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1883-4.

NEW SOUTH WALES.

VOTES

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PROCEEDINGS

OF THE

LEGISLATIVE ASSEMBLY

DURING THE SESSION

ΟF

1883-4,

WITH THE VARIOUS DOCUMENTS CONNECTED THEREWITH.

IN ELEVEN VOLUMES. VOL. V.

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LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

VOTES AND PROCEEDINGS.

SESSION 1883-4.

IN ELEVEN VOLUMES.

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1883.

(THIRD SESSION.)

NEW SOUTH WALES.

RAILWAYS AND TRAMWAYS

O E

NEW SOUTH WALES.

REPORT

BY

THE COMMISSIONER FOR RAILWAYS

FOR THE YEAR

1882.

Presented to Parliament by Command.



SYDNEY: THOMAS RICHARDS, GOVERNMENT PRINTER.

1883.

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NEW SOUTH WALES.

RAILWAYS OF NEW SOUTH WALES.

(REPORT FOR 1882.)

The Commissioner for Railways to The Honorable the Secretary for Public Works.

Department of Public Works, Railway Branch, Sydney, 1 September, 1883.

Sir,

I have the honor to submit, for the information of the Government, a statement of the transactions of this Department for the year 1882.

No. 1.—RAILWAY CAPITAL AUTHORIZED.

At the close of 1881 the amount of Loans authorized was £26,702,661. Railway Debt. No additional loan was authorized in 1882. The total amount of Debentures Nos. 7 & 8, issued at the close of 1882 was £15,660,600, leaving a balance of £11,042,061 pp. 57-62. still to be raised.

The Railway capital bears interest as follows:—

£7,110,800—5	per	cent.					<i>:</i>	•••	annual inter	est	£355,540
8,549,800—4		,,	• • •								£341,992
11,042,061—4	•	,,		•	(stil	11to	be be	raised)	,,	:	£441,682

The average interest being 4.26 per cent., equal to £1,139,214.

The interest paid for 1882 on Railway Loans was £643,992. The net return from the Railway working of that year was £764,228, showing a net profit, after meeting all demands for working expenses and interest upon capital, of £120,136.

2.—RAILWAY CAPITAL EXPENDED.

At the close of 1882 there had been expended on lines open for traffic Capital expended. £15,848,494,* and on lines in course of construction £928,148; in all, Appendix £16,776,642, of which amount the sum of £1,896,178 was expended in the pp. 63-65. year 1882, as under:—

Construction	***	 	£1,666,381
Rolling Stock an	d Machinery, &c.	 •••	$\sim\!219{,}546$
Trial Surveys		 • • • •	10,251
			

£1,896,178

The

^{*} Includes cost of old Pitt-street Tramway, taken up in 1867.

The sources from which the money expended on lines open for traffic have been obtained are—

From Loans	•••	 		£15,210,615
,, Revenue		 •••		633,001
•				
			. '	£15,843,616*

The interest bearing capital expended on lines in operation was therefore only £15,210,615, and, as several of the lines were in operation for parts of the year only the net returns for 1882 will pay at the rate of 5.36 per cent. per annum for the period during which the lines were working; but in calculating the interest which the net receipts give the whole amount of capital has been, as in past years, included without regard to the source from which it has been obtained. The percentage to capital is consequently reduced from 5.36 to 5.14.

3.—LINES OPEN AND IN PROGRESS.

Railways Of the sum £1,666,381 expended in 1882 for construction, the sum Appendix No of £741,861 was expended on lines open for traffic, and the balance, £924,520, invested in unproductive lines in course of construction.

In the following statement is given the length of Railway lines open for traffic during the year 1882:—

Southern and South-western Lines.

•		Miles.
South:—In operation at close of 1881—Sydney to Albury South-west—Junee to Darlington	}	486
Opened 1 March, 1882—Darlington to Carathool	•••	34
", 4 July, 1882—Carathool to Hay		34
Total opened 31 December, 1882		554
Average for the year	•••	529

Western Line.

In operation at close of 1881—Sydney to Dubbo (including Rich	\mathbf{mond}	
Branch)		281
Opened 15 May, 1882, Wallerawang to Capertee		23
Opened 20 October, 1882, Dubbo to Nevertire	•••	63
- · · · ·		
Total opened 31 December, 1882		367
•		
Average for the year	•••	308
	Nor	rthern

^{*} Excluding the cost of the old Pitt-street Tramway, which was taken up in 1867.

Northern Line.

In operation at close of 1881—Newcastle to Tamworth (including	
Morpeth Branch) and Werris Creek to Gunnedah	
Opened 9 January, 1882—Tamworth to Moonbi	12
Opened 11 July, 1882—Gunnedah to Boggabri	24
Opened 2 August, 1882—Moonbi to Uralla	51
Opened 1 October, 1882—Boggabri to Narrabri	32
Total opened 31 December, 1882	147½
Average for the year	$281\frac{1}{2}$

It will be seen from the foregoing that during 1882 no less than 273 Southwestern miles of line were open for traffic, embracing extensions of great importance. In the south-west the line was extended from Darlington to the town of Hay, one of the most important centres in Riverina. The effect which the opening of this extension has had in diverting the Riverina trade to our own Capital is shown by the wool returns.

In the west the Department was able to arrange with the contractors Western Line. (A. & R. Amos) for the opening of the line from Dubbo to Warren Road, 63 miles, on the 16th October last, eight and a half months before the expiration of the contract time, a promise having been given by the Government that the contractors should be paid a bonus of £9,000 if the line were opened by the date mentioned. Of this sum, £5,000 was contributed by the Cobar Copper Company, in consideration of the benefit which the earlier opening of the line would confer upon the interests they represented.

The first section of the branch line to Mudgee, viz., from Wallerawang to Capertee, was opened on 15th May, 1882.

During the years 1880 and 1881 no additional mileage was opened Northern on the Northern Line; in 1882, however, 119 miles of line, an addition of over 50 per cent., were added to the Northern Railway system. The Main Northern Line was extended from Tamworth, first, to Moonbi, and subsequently to Uralla, on the borders of the rich and extensive district of New England. This extension resembles in some respects the Western Line over the Blue Mountains. The works are exceedingly heavy, owing to the mountainous character of the country. The line reaches a height above sea-level almost as great as the highest point reached by the Great Western Line. In the vicinity of the railway are many views of great beauty, which, added to the salubrity of the climate, should make this place the tourists' district for the residents of the lowland plains and towns in the Northern District. Since the close of the year the line has been extended to Armidale, the cathedral city and capital of New England.

The North-western Line was extended from Gunnedah to Narrabri, a distance of 36 miles. This extension will bring to the Northern system a considerable amount of traffic that was formerly carried by the Western line, and will open up a large area of country.

Since.

Since the close of 1882 the following extensions have been opened—

Uralla to Armidale, 1 February, 1882 ... 15 miles.

Nevertire to Nyngan, 9 June, 1882 ... 36 ,,

Albury to River Murray, 14 June... ... 1,

LINES IN PROGRESS.

Railways in progress.

At the present time there are 533 miles under construction. Particulars of the lines under construction are as follows.

Great Western Railway.

Wallerawang to Mudgee—85 miles.

Wallerawang to Mudgee. The first section of this line, viz., from Wallerawang to Capertee, a distance of 23 miles, was opened for traffic on the 15th May, 1882.

The contract time for the completion of the line to Mudgee is 30th June, 1884, and there is every reason to believe that it will be opened for traffic by that date.

Nyngan to Bourke—126 miles.

Nyngan to Bourke. Tenders for the extension Nyngan to Bourke were opened on the 22nd November, 1881, when the tender of George Mann & Co., for £412,977 18s. 4d. (the lowest of four received) was accepted. The contract time for completion of the line to Bourke is 31st March, 1885.

Great Northern Railway.

Uralla to Tenterfield—136 miles.

Uralla to Tenterfield The extension from Uralla to Glen Innes, $78\frac{1}{2}$ miles, was let to Mr. D. Proudfoot, on the 18th January, 1881, for the sum of £457,523. The time for the completion of this length is 31st December, 1883. The first section, Uralla to Armidale, 15 miles, was opened on the 1st February last.

Tenders for the extension from Glen Innes to Tenterfield, a distance of $57\frac{1}{2}$ miles, were opened in October last, when that of Messrs. Cobb & Co., for £618,737 14s. 2d., the lowest of six received, was accepted. The line is to be completed by the 30th June, 1885.

Sydney to Illawarra—1st Section.

Sydney to Illawarra. Tenders for the first section of this line, a distance of 23 miles from Macdonaldtown, were opened on the 12th September, 1882. Nine tenders in all were received, and the lowest—that of Messrs. C. & E. Miller, for £258,419—accepted.

The date for the completion of the whole length is 30th September, 1884, but it is probable that some portions of the line will be opened before this time. The contract includes the erection of the bridge over the George's River. The works beyond the 15th mile were, by arrangement with the contractors, stopped while surveys were made of a proposed deviation in the route. The survey has not yet been completed.

Homebush

Homebush to Waratah—1st Section, 29 miles.

Tenders for the first section of this line were opened on the 1st May Homebush to last. Ten tenders were received, and the lowest—that of Messrs. A. & R. Amos, for £445,472 16s. 8d.—accepted. The time for completion is 1st March, 1886. Included in this contract is the erection of the bridge over the Parramatta River. Amos & Co.'s tender for £380,969, the lowest of three received, was accepted on the 17th August last for a second section of this line, a distance of 49 miles.

Goulburn to Cooma—1st Section.

Tenders for the first section of the above line, extending from Goulburn Goulburn to Bungendore, a distance of $39\frac{1}{2}$ miles, were opened on the 3rd October last. Cooma. Eight tenders were received, and that of Topham, Angus, & Co.'s, for £232,508, accepted. The date for completion is—to Tarago, 1st October, 1883; to Bungendore, 31st December, 1884.

Murrumburrah to Blayney—1st Section.

Seven tenders were received for the construction of the first section of Murrumthis line to Young, and the lowest—that of Messrs. O'Rourke & M'Sharry, Blayney. for £184,270 6s. 8d.—accepted, on the 23rd September, 1882. The date for completion is 31st December, 1884.

Narrandera to Jerilderie.

'Tenders for the construction of this line were opened on the 28th Narrandera to November last, and Messrs. Halliday, Owen, & Co.'s, for £284,330 8s. 4d., the lowest of six received, was accepted.

This line, 65 miles in length, is to be completed by 30th November, 1884.

The following is a summary of the progress made with the construc-summary of tion of new lines:—

Summary of progress made in construction of new lines.

· Extension.	Distance.	Progress.
Wallerawang to Mudgee .	Miles. 85	From Wallerawang to Capertee, 23 miles, opened on 15 May. Line to be completed to Mudgee by 30 June, 1884.
Nyngan to Bourke	126	Line to be finished by 31 March, 1885.
Uralla to Tenterfield	136	The extension, Uralla to Glen Innes, is to be completed by 31 December, 1883. A section, Uralla to Armidale, was opened on 1 February, 1883. The line to Tenterfield is to be completed by 30 June, 1885.
Sydney to Illawarra	68	First section, 23 miles, under construction, to be completed by 30 September, 1884.
Homebush to Waratah	93	Two sections, 78 miles, under construction.
Goulburn to Cooma	130	Goulburn to Bungendore, 39½ miles, under construction, to be completed to Tarago 1 October, 1883; to Bungendore, 31 December, 1884.
Murrumburrah to Blayney .	108	Murrumburrah to Young, under construction, 18 miles, to be completed 31 December, 1884.
Narrandera to Jerilderie .	65	Under construction, to be completed by 30 November, 1884.

Railways opened and to

In the following table the lengths of Railway lines authorized, the be constructed total lengths opened, the extent of double line, and the lengths remaining to be constructed, are shown:—

Railways.	Length of Line sanctioned.	Length opened for traffic.	Portion laid with double rail.	Length remaining to be finished.
Great Southern—Sydney to the River Murray	Miles. 387	Miles. 387	Miles. 13½	Miles.
South-Western—Junee to Hay	167	167		
Narrandera to Jerilderie	. 65			65
Cooma Branch—Goulburn to Cooma	130			. 130
Cootamundra to Gundagai	. 33			33
Murrumburrah to Blayney	108	·········		108
Sydney to Wollongong and Kiama	68	· · · · · · · · · · · · · · · · · · · ·		68
Homebush to Waratah	93			. 93
Great Western—Granville to Bourke	490	364	1	126
Windsor and Richmond Branch	16	16		
Wallerawang to Mudgee	85	23		62
Orange to Forbes	83		,	83
Great Northern—Newcastle to Tenterfield	381	260	20	121
Morpeth Branch	4	4		*******
North-Western—Werris Creek to Narrabri	97	97		••••
Bullock Island Branch	. 1½	$1\frac{1}{2}$	11/2	•••••
Darling Harbour, &c	2	- 2 ·	2	•••••
Total	$2,210\frac{1}{2}$	1,321½	38	889

4.—LAND TAKEN FOR RAILWAY PURPOSES.

Appendix No.

The quantity of land taken for Railway purposes during the past year, was 5,140 acres $12\frac{2}{3}$ perches, of which 977 acres $14\frac{1}{6}$ perches were private, and 4,162 acres 3 roods $38\frac{1}{2}$ perches Crown Land.

On reference to Appendix No. 4 it will be seen that both the rate per mile and per acre on the total of all lines has increased. This is principally owing to the costliness of the land required for the construction of the line from Albury to the River Murray, and also to the number of buildings which had to be taken on the Illawarra Railway. The amount to be paid for land on the latter line is also very large, a value being stamped upon it by the prices realized at the sales of numerous subdivisions which were submitted to auction immediately before the issue of the proclamation and when the centre line of railway had already been marked out.

The claims outstanding on the 31st December, 1881, were 454, to which were added 164 during 1882; of these 618 claims 162 were settled in 1882, leaving, at the close of the year, 456 in various stages of adjustment.

For

For some time past consideration has been given to the question whether the community is not entitled, in a more direct way than has hitherto prevailed, to a portion of the wealth created by the construction of railways with public money. I brought this principle under the consideration of Mr. Secretary Lackey in connection with the extension of the Tram Lines, and it was so far adopted that the construction of the Tram Line to Cook's River was made conditional upon the owners of the land through which it would pass giving free the land required for the purpose. This proposal wasvery generally responded to, and no doubt the whole of the persons who held property would have given the portion required free had not other considerations determined the Government to abandon the construction of the line. I have called the attention of successive Ministers of Works for the last two years to the desirability of providing for the increased traffic on the Southern Line and creating and developing additional suburban traffic, by the construction of a line from about Liverpool to meet the Illawarra Line in the neighbourhood of Newtown.' Such a line would open up a large area of country capable of cultivation, and would give an additional outlet for the overcrowded population of the city. In order that the community might share in the benefits derivable from the expenditure of the money in the construction of this line, it was proposed to resume a large area of land, about one mile in width, throughout the whole route; and after providing for roads and the creation of suitable townships, to re-sell the land not required for railway purposes, the profits made upon the re-sale to go as a set-off against the cost You thought favourably of the proposal, and took some initiaof the railway. tory steps to give effect to it; but it soon appeared, from the fact that public petitions were being largely signed advocating this route, that either the intentions of the Government in this regard had become known, or the necessity for such a line had manifested itself to others. The object in view being thus in a measure frustrated, the alternative course was adopted of intimating to those interested, who waited by deputation upon you, that you would only consent to recommend the construction of the line to Parliament upon the understanding that the land required for its construction was given free. The policy proposed to be pursued in this respect is not, I find, without example. The question has recently been taken up in New Zealand, and the Minister for Public Works, the Hon. Walter Woods Johnston, in a statement delivered to Parliament on the 3rd July last, in speaking of the treatment of land specially benefited, said:

I now come to the consideration of the manner in which lands specially benefited by the construction of railways should be dealt with. With reference to the advantages which have accrued in the past, the Government does not intend now to make any proposals, for it is not practicable to suddenly seize for the State a share of these advantages without inflicting numberless wrongs. But with regard to the future the case is different, and we are free to consider, unembarrassed by any apprehension of committing injustice, what share the community may be entitled to of the wealth created by the construction of railways with public money. In seeking the simplest and fairest course to adopt; the first suggestion which will have probably occurred to the minds of honorable members is that the State should repurchase all the land for a certain distance on either side of the proposed line at a certain increase upon the property-tax valuation. Valuations for taxation are usually low; on the other hand, compensation for expulsionshould be liberal-perhaps compensation to the dispossessed landholders of twenty-five per cent. more than the valuation for property-tax would not be inequitable; and when railways are extended through country suitable for settlement there can be no doubt that the re-sale in moderate-sized farms of the land so taken would produce a profit sufficient to make a considerable contribution towards the cost of the railway, and moreover would bring into existence a traffic large enough to cause the railway to be a source of considerable revenue. Great collateral advantages would accrue to the Colony from the increase in our total production, and from the revenue contributed by an additional population.

5.—Importation of Railway Materials.

Appendix No. In the Appendix will be found a return of the Permanent-way materials, locomotives, and miscellaneous articles imported during the year under review.

The following is an abstract of the returns:—

Number of Ships employed.	Number of Tons of Goods shipped.	Valu Goods s	ed.	Amounts p Freight and I		Average ra		
155	41,318	£ 447,430	 d. 6	£ *37,933 †4,750	:		3 4 ·34 2 3· 59	

* Freight. † Insurance.

In the above are included:

n the above are	inoru	.uou				Weight in Tons.	ĮVε	lue.	
							£	s.	d.
Permanent-way m	aterial :	for autl	horized ex	tensior	ıs	29,131	218,567	5	2
•	Renev	vals of	Existing	Lines		3,469	24,586	14	3
	Tram	ways	•••			1,684	16,419	1	6
22 Locomotives						1,117	58,019	16	3
13 Motors						170	18,399	10	8
Miscellaneous arti	icles		•••			5,747	111,438	4	8
					•	41,318	£447,430	12	6.
						·			

Early in the year 1882 it became apparent that the store business of the Department could not much longer be transacted in the very restricted premises allotted to that branch at Redfern.

These premises had long been recognized as inadequate to the requirements of the Store Branch, but were clung to year after year in constant anticipation of the early removal of the workshops from the Redfern yard, and a consequent migration in which the Store Branch would participate.

For the double purpose of affording relief to the Redfern store premises, and of obviating delays in the transmission of supplies for the various works in the country districts, branch stores were opened at Goulburn and Bathurst. These have been found of great practical utility, and an actual pecuniary gain to the Department.

The relief thus afforded was, however, temporary only, being gradually negatived by the rapid increase of the business.

The following figures will convey some idea of the increase during the past ten years, and it may be pointed out that so far back as 1873, the year taken for comparison with 1882, the premises were considered inadequate for the efficient conduct of the business, which has since increased *elevenfold*.

		1873.	1882.
Value of purchases in the Colony	 . <i>:</i> .	£50,865	£433,798
Do Miscellaneous Imports	 •••	5,877	187,858
,		£56,742	£621,656

It was therefore determined to erect the present commodious premises at Eveleigh, in which, at the time of writing, the store staff is permanently established, and the business conducted in a systematic manner, which was almost impracticable in the cramped and inadequate premises previously occupied.

They occupy an area of about $5\frac{3}{4}$ chains north and south, by about $8\frac{3}{4}$ east and west; and upon this have been erected two galvanized-iron stores, each 200 feet long by 50 wide, and a small oil store, 40 feet long by 20 feet wide. The necessarily large clerical staff employed for the conduct of such a business has been accommodated in a handsome two-story brick building, containing eight large rooms, and surrounded by a balcony and verandah. A small garden has been laid out in front, and there is an air of comfort and neatness about the whole surroundings which is not often met with in connection with structures of this kind erected for Railway purposes, but which is none the less pleasing. A new store building, 75×50 , has also been erected at Randwick. This was in view of the increasing business of the Tramways, and the desirability of keeping the transactions quite distinct from the Railways.

The management of the store branch for all lines had been vested in the Storekeeper, Redfern, but on the opening of these three additional branch stores, making five in all, it was considered that that Officer could not efficiently conduct the general management of this service, and at the same time be responsible for the detail working of one particular branch. The difficulty was met by the appointment of a Superintendent of Stores, and of Storekeepers to take charge of the various branches, a change which came into operation at the commencement of the present year.

6.—Existing Lines.

Maintenance of Ways and Works.

All the lines were kept in good order during the year, and a large Appendix No. number of new works executed, details of which will be found in the Report of the Engineer for Existing Lines (Appendix I.) The following were the principal works carried out: - Excavation and levelling for workshops, foundation for running shed, and erection of store premises at Eveleigh; Goods sheds and heavy cranes provided at the principal suburban stations, and light cranes at several of the up country stations. At Summer Hill a Station-master's house was erected, and an over-bridge at Ashfield. A large number of new sidings were laid in during the year, amounting to 7 miles on the Southern Line, 5 miles on the Western Line, and over 1 mile on the Northern Line. The principal sidings were those in connection with the new and extensive cattle-yards erected by the City Corporation at Homebush. About $1\frac{1}{2}$ miles of new sidings were laid in at Granville, and also at Penrith. 1 mile of sidings were laid in at Blackheath, principally for loop lines, and 1 mile at Bathurst. In the south, principally on the Darling Harbour Branch and Suburban Line, 3 miles of line were relaid with steel rails. the west, in various parts, 10 miles of line were relaid. On the Richmond Line over 1 mile was relaid. $37\frac{1}{2}$ miles of railway fence were wired on the Southern Line and 11 miles on the Western Line. The work of improving the gradients and strengthening the Richmond Line has been continued during the year. Locomotive

Locomotive and Carriage Division.

Appendix No. 2, p. 26.

Complaints are still made of the great inconvenience suffered by this branch owing to the want of room at the workshops. The urgent necessity is pointed out for the early completion of the works at Eveleigh, so that operations may be carried on at that place. The works are being pushed forward as fast as possible, and arrangements have been made for obtaining the new and improved appliances that will be used. The visit of Mr. Scott, the Locomotive Engineer, to America and Great Britain, will, it is hoped, be productive of much good to the Department. - Mr. Scott visited the principal railway workshops of these countries, and will adopt in our establishments the most valuable appliances he saw in use in the leading workshops of England and America.

THE following is an Abstract of Rolling Stock on hand on 31st December, 1880, and the number and description of Vehicles supplied in 1882.

Appendix No.

· I	10C01	noti	ives			· · ·				Passe	nge	er.		•										3000	ls.						
Jue'l	Passenger.	Goods.	Total.	Dining.	Sleeping.	First-class.	Composite.	Compo. Brake Vans.	Second-class.	Mail Vans.	Prison Vans.	Hearses.	Horse Boxes.	Carriage Trucks.	Brake Van.	Total.	Brake Vans.	Accident Vans	Ā.	Was	ggons	э. Н	Water Trucks	Ö.	1	Cattle.	Meat.	Composite Cattle & Goods Van.	Refrigerating Car.	Total.	Total of all vehicles.
2'	103	103	233	1	7	75	76	26	148	10	5	6 1	Rolli 94	ng S 56				•	1st D		•		3	31	7 24	3 24	5 13	1	18	5 4849	5612
	11	24	35		1	6	10	. 5	5			7		Roll	ing S	tocl			··	ring			12		. 6	5 5	7		 	. 596	665

It will be seen that thirty-five engines were supplied during the year. Twelve of these were made by colonial makers, viz., four by Mr. Henry Vale and eight by the Atlas Company. It is satisfactory to state that the Colonial-built engines have to the present time fulfilled the requirements of the Engineer, both as regards material and workmanship.

The stock of engines is still below estimated requirements, but a considerable number are under construction.

A question of some moment to the Department is that of obtaining permanent and good supplies of water at various convenient points on the lines. Before supplies are taken from any new source, samples of the water are sent to the Government Analyst, in order to ascertain whether the water contains any qualities that will affect injuriously the locomotive boilers. The whole question is receiving careful attention. Last year much inconvenience was caused by the failure in the dry season of many of the sources of supply, particularly on the Western Line, and water trains, at considerable expense, had to be run to meet the deficiency.

7.—REVENUE AND EXPENDITURE.

The varying necessities of the traffic, and the measures for its encouragement and development, have continued to receive close attention, and during the year numerous modifications in rates have been made from time to time in order to attract and secure traffic to the railways.

The gross earnings in 1882 were £1,698,863, being £254,637, or 18 per cent. in excess of those for 1881. The working expenses were £934,635, being £196,301 in excess of 1880, and the net earnings £761,228.

Gross and net earnings and working expenditure.

Of the gross earnings, the sum of £587,825 was derived from coaching traffic, and £1,111,038 from goods traffic. The proportion of the former to the latter was 34.60 to 65.40.

In the following tables are given the particulars of the Revenue and Expenditure for 1882 compared with 1881:—

COACHING TRAFFIC.

Particulars of coaching 1881. ·1882. traffic. S. & W. North. Total. S. & W. North. Total. ...| No. 105,788 1,440,253 First-class 951,115 77,868 1,028,983 1,334,465 Second-class 3,041,744 325,463,3,367,207,3,683,475 434,849,4,118,324 . . Number Total 3,992,859 403,331 4,396,190 5,017,940 540,637 5,558,577 ofSeason ticketspassengers No. of journeys 2,430,778* 80,344 2,511,122 3,336,416 89,320 3,425,736 Gross 6,423,637 483,675 6,907,312 8,354,356 629,957 8,984,313 First-class £ 147,952 22,128 170,080 180,982 28,018 209,000 Second-class 197,215 43,514 220,385 271,083 240,729 50,698 Season tickets .. †19,176 840 20,016 d33,3471,035 34,382 Receipts Total[.] 364,343 66,482 430,825 434,714 79,751 514,465 from Horses and carri-Coaching $12,477 \\ 3,255$ 41,741 11,161 37,935 ages, parcels, &c. 31,629 10,112 50,412 traffic 8,504 9,754 Mails 2,657 13,009 ,, Miscellaneous .. 3,636 1,3122,741 4,948 7,198 9,939 Gross 408,112 80,563 488,675 489,601 98,224 587,825 $3\frac{1}{2}$ First-class s. d. 3 $3\frac{3}{4}$ 84 $2 \ 10^{\frac{3}{4}}$ 14 Average 2 Second-class 3 8 1 1 2 1 3 1 $5\frac{1}{4}$ $2\frac{1}{4}$ $2\frac{1}{4}$ fare per Season tickets .. 0 $\mathbf{2}$ 0 $2\frac{1}{2}$ 0 0 0 2 $2\frac{3}{4}$ 0 head. Mean. 2 1 11 9 1 3 1 0글 2 $6\frac{1}{4}$ 1 $1\frac{1}{5}$ First-class ... £ s. d. Second-class .. Season tickets ... ${f A}$ verage Receipts from Total ` 9 5 2 9 1 1 1 7 4 5 0 1 3 2 5 1 8 2 7 2 8 4 6 4 459 11 0 Coaching Horses and carritraffic ages, parcels, &c. 45 4 3 44 9 7 11 12 7 11 12 0 9.0 7.0 43 43 13 3 Mails 11 13 0 per average 11 13 5 5 3 7 11 12 5 11 13 7 mile of line. Miscellaneous .. 5 15 2 0 0 8 11 7 9 15 5 8 17 7 Gross 560 12 0 353 6 9 511 3 5 583 11 0 350 3 4 525 First-class 26.5020.1325.45 28.37d. 21.84 27.29Second-class 35.32 39.58 36.02 35.54 39.5336.20 Season tickets ... 3.430.760.812.994.213.64 Average Total 65.2560.4764.46 68.1262.1867:13 receipts per Horses and carripassenger 5.67ages, parcels, &c. 9.196.255.959.736.58train mile. Mails 1.522.421.67 1.532.541.70 Miscellaneous :.. 0.651.20 0.741.13 2.141.30 Gross 73.09 73.28 73.12 76.73 76.5976.71Proportion First-class 14.81 $\cdot 16.10$ 14.90 15.97 16.7916.03 Second-class 47.35 67.29 48.75 44.09 69.03 45.85 classes. Season tickets ... 37.84 16.61 36.3539.94 14.18 38:12

100.00

40.61

54.12

5.27

100.00

Proportion (

of

receipts.

First-class

Second-class

Season tickets ...

100.00

33.28

65 45

100.00

1.27

100.00

39.48

55.87

· 100·00

4.65

100.00

41.63

50.70

7.67

100.00

100·0C

35.13

63:57

1.30

100.00

100.00

40.63

52.69

100.00

6.68

^{*} Includes 450,216 journeys made with workmen's tickets. † Includes £3,052 for workmen's tickets. £6,463

The number of first-class passengers carried shows-

An increase of... 383,350 for South and West Lines.

, ... 27,920 ,, North line.

An increase of... 411,270 ,, all lines.

The number of second-class passengers carried shows-

An increase of... 641,731 for South and West lines.

" ... 109,386., North line.

An increase of... 751,117 ,, all lines.

The number of season tickets (journeys)—

Increased ... 905,638 for South and West lines.

" ... 8,976 " North line.

An increase of... 914,614 ,, all lines.

The total increase in the number of passengers carried on all lines was 2,077,001.

The receipts for coaching traffic increased—

£81,489 for South and West lines.

17,661 ,, North line.

£99,150 ,, all lines.

The receipts from coaching traffic per average mile of line show-

£ s. d.

An increase of... 22 19 0 for South and West lines.

A decrease of ... 3 3 5 ,, North line.

Average increase 13 18 2, all lines.

The receipts per train mile show—

An increase of... 3.64 for South and West lines.

" ... 3.31 " North line.

,, ... 3.59 ,, all lines.

The proportion of percentage of classes of passengers shows—

An increase of... 1.13 for 1st class.

A decrease of ... 2.90 ,, 2nd ,,

An increase of... 1.77 , season tickets.

The proportion of percentage of receipts-

Increased ... 1.15 for 1st class.

Decreased ... 3·18 ,, 2nd ,,

Increased ... 2.03 ,, season tickets.

The goods traffic compared in the same way is shown as under:—
Goods Traffic.

•		:	1881.	!		1882.		Particulars of goods traffic.
		s. & w.	North.	Total.	s. & w.	North.	Total.	
$\textbf{Tons carried} \begin{cases} \textbf{Merchandise} \dots \\ \textbf{Minerals} \dots \\ \textbf{Wool} \dots \\ \textbf{Live Stock} \dots \end{cases}$	Tons	524,239 278,172 29,734 32,288	1,052,164 10,734	1,330,336 40,468	393,956 28,400	118,541 1,395,940 13,683 13,843	725,281 1,789,896 42,083 62,178	
Total	,,	864,433	1,169,417	2,033,850	1,077,431	1,542,007		
Receipts from Goods Traffic.	£ "	518,320 63,350 70,684 70,753	53,434 22,499	116,784 93,183	93,188 67,786	149,125 71,313 30,712 23,418	699,380 164,501 98,498 140,070	
Miscellaneous	"	723,107 2,071				274,568 4,744	1,102,449 8,589	•
Total	,,	725,178	230,373	955,551	831,726	279,312	1,111,038	
Average rate Merchandise per ton. Wool Live Stock	S.	19·77 4·55 47·65 43·83	1 01 41 93	1.76 46.05	4·73 47·74	1.02	19:34 1:84 46:81 45:05	
Mean	,,	16.78	3.94	9.45	15.42	3.62	8:48	
Average No. of tons per mile of line. Merchandisc Worklands Worklands Worklands Worklands Worklands Worklands Worklands Worklands Worklands Live Stock	Tons	720 382 41	4,61	1,392 42	469	4,985 49	38	
Total	. ,,	1,187	5,129	2,127	1,284	5,507	2,340	
Average receipts per mile of line. Merchandise Minerals Wool Live Stock Miscellaneous.	£ s. d.		5 234 7 3 0 98 13 7 0 37 11 5	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	111 1 5 80 15. 9 139 0 10	83 9 9	146 18 9 87 19 8 125 2 4	
Total	,,	996 2 8	1010 8	2 999 10 7	991 6 7	995 15 4	992 8 0	
Average receipts Per train mile. Average Minerals Wool Wiscellaneous	d.	67·4 8·24 9·19 9·20 0·21	27:09 11:39 0 4:39	2 12:08 8 9:64 8 8:20	9·38 6·88 11·78	$egin{array}{cccc} 27 \cdot 22 \ 11 \cdot 72 \ 8 \cdot 94 \ \end{array}$	13·11 7·85 11·10	5
Total	,,	94.3	1 116.4	98.88	83.76	106.62	88.5	3

In the tonnage carried there was

An increase of 99,639 in merchandise.

459,560 in minerals.

,, 1,615 in wool.

, 24,774 in live stock.

585,588 total increase.

Per average mile of line open, the result shows:-

A decrease of 6 tons in merchandise.

An increase of 207, minerals.

wool.

· A decrease of

4 ,, w

An increase of 16 ,,

live stock.

213 total increase.

The

The receipts show—

An increase of £36,668 in merchandise.

47,717 in minerals.

, 5,315 in wool.

60,753 in live stock.

5,034 in miscellaneous.

£155,487

Per average mile of line open, the receipts show-

£ s. d.

A decrease of 68 9 7 in merchandise.

An increase of 24 15 7 in minerals.

A decrease of 9 9 9 in wool.

An increase of 42 2 11 in live stock.

,, 3 19 0 in miscellaneous.

£7 1 10 average decrease.

The average receipts per train mile show-

d

A decrease of 12.83 for merchandise.

An increase of 1.03 for minerals.

A decrease of 1.79 for wool.

An increase of 2.96 for live stock.

" 0.31 for miscellaneous.

10.32 total decrease.

Working Expenditure.

The particulars of the whole of the expenditure are given in the following table:—

Particulars	of
working	
expenditure	

1881.	,		1882.	
& W. North.	Total.	S. & W.	North.	Total.
6,285 44,722 0,345 10,119 8,272 60,324 3,933 58 293 127 5,204 5,831	188,821 245,007 40,464 238,596 3,991 420 21,035 738,334	215,265 255,501 35,309 206,784 3,162 868 20,743 737,632	46,724 58,985 11,212 71,341 80 181 8,480 197,003	261,989 314,486 46,521 278,125 3,242 1,049 29,223 934,635
787 720	7772	879	702	835
11:28	11·55 14·99 2·47 14·59 0·24 0·03 1·29	13·20 15·66 2·17 12·68 0·19 0·05 1·27	11·98 15·12 2·87 18·28 0·02 0·05 2·17	12·96 15·56 2·30 13·76 0·16 0·05 1·45
43.25 53.38	45.16	45.22	50.49	46.24
18·21 12·57 17·32 15·67 2·68 3·25 15·73 19·40 0·34 0·02 0·03 0·04 1·34 1·87	13·07 16·97 2·80 16·52 0·28 0·03 1·45	16·30 19·33 2·68 15·65 0·24 0·06 1·57	12·38 15·62 2·97 18·89 0·02 0·05 2·25	15:43 18:51 2:74 16:37 0:19 0:06 1:72
0.03 0.04		0.03	0·03 0·06 1·45 1·57	0·03 0·06 0·05 1·45 1·57 2·25

The total working expenditure, compared with 1881, increased-£163,563 or 29 per cent for South and West lines.

32,738 or 20

North line.

196,301 or 27

all lines.

The expenditure per average mile of line open-Increased £92 for South and West lines Decreased £18 for North line

Decreased £63 for all lines

The expenditure for train mile shows as follows—

An increase of 1.97d. for South and West lines.

A decrease of 2.89d, for North line.

An increase of 1.08d. for all lines.

The proportion of expenditure to gross receipts from all sources shows 55.83 per cent. for South and West lines.

52.18

North lines.

55.02

all-lines.

Net Earnings.

The percentage of net earnings to capital expended in 1882, as against Percentage of 1881, was as under:-to capital.

		1881.	, , ,		1882.	
	No. of miles.	Capital invested.	Percentage of interest.	No. of miles.	Capital invested.	Percentage of interest.
South and West	· 767½	10,523,505	5.32	347 ½	11,798,326	5·15
North	$228\frac{1}{2}$	2,778,092	5.28	921	4,045,290	5·10
All Lines	996	13,301,597	5.31	1,2681/2	15,843,616	5:14

The subjoined abstract furnishes the percentages which the gross Percentage of earnings, the working expenditure, and the net earnings bear to the capital gross earnings, working expended on lines in operation for 1882, as compared with 1881.

net earnings to capital.

		1881.			1882.			
·		S. & W.	North.	Total.	S. & W.	North.	Total.	
Net receipts from all sources	€	559,221	146,671	705,892	583,694	180,534	764,228	
Do. per average mile	€	768	643	738	696	644	- 683	
Do. per train mile	 1.	42.13	47.67	43.17	35.78	46.26	37.81	
capital. Do. of expenditure to	%	10 [.] 78 5 [.] 46	11·19 5·91	10·86 5·55	11·65 6·50	10 [.] 66 5 [.] 56	11·42 6·28	
capital. Do. of net receipts to capital.	,,	5.32	5.28	5:31	5:15	5:10	5.14	

North.

The net earnings from all sources for the year show as follows:—£24,473 increase South and West.

33,863 ,,

58,336 ,, all lines.

The net earnings per average mile of line open show

A decrease of £72 for South and West lines.

An increase of £1 for North line.

A decrease of £55 for all lines.

The proportion of gross earnings to capital

Increased 0:86 on South and West lines.

Decreased 0.14 on North lines.

Increased 0.64 on all lines.

The proportion of expenditure to capital .

Increased 1.04 on South and West lines.

Decreased 0.15 on North lines.

Increased 0.78 on all lines.

The proportion of net receipts to capital

Decreased 0.17 on South and West lines.

, 0.18 on North line.

" 0·17 on all lines.

Summary of gross earnings, working expenditure, and net earnings for 1881 and 1882. The following is a summary of the gross earnings, working expenditure, and net carnings of the Railways for 1882, as against 1881:—

		South and West.	North.	Total.
,		£	£	£
Gross earnings; 1882	•••	1,321,327	377,536	1,698,863
Do. 1881 '	•••	1,133,290	310,936	1,444,226
Increase for 1882	•••	188,037	66,600	254,637
Working expenditure, 1882	•••	737,633	197,002	934,635
Do. 1881	•••	574,069	164,265	738,334
Increase for 1882	•••	163,564	32,737	196,301
Net earnings, 1882		583,694	180,534	764,228
Do. 1881	•••	559,221	146,671	705,892
Increase for 1882		24,473	33,863	58,336

8.—DIVISION OF THE RAILWAY LINES INTO SECTIONAL AREAS.

The following statements of the capital, revenue, and expenditure on Division of the various sections of the Great Southern, Western, Richmond, and Northern sectional Railways for the year 1882 will show that generally the traffic on the new areas. lines has much improved, and that the old lines have been largely benefited thereby.

All sections. and Richmond.

It will be seen that the line from Junee to Hay has been worked at a Competing, as we do, with Victoria and South Australia for the Riverina traffic, it is necessary to give both low rates and good service; and while it is to be regretted that the revenue did not for 1882 cover the expenses on that line, it must not be forgotten that the South-Western traffic goes to swell the receipts between Sydney and Junee, and largely improves the returns on that section of the Railway. There are indications, moreover, that the traffic on the South-Western line is improving. obtained for the first three months of the present year, it is shewn that 900 tons of goods in excess of the quantity sent in the corresponding period of last year were forwarded from Sydney to Hay, and although it is not assumed that the whole of this increase will be maintained, as we shall lose, now that the Murrumbidgee is again navigable, some portion of the Melbourne traffic which has reached Hay via Sydney, there is every reason to believe that the bulk of it will remain with us.

ALL SECTIONS-SOUTH, WEST, AND RICHMOND.

Expend	diture.	Earnings.		
			Percent. to earn- ings.	All Sections—South, West, and Richmond— Train mileage— Coaching
,	. £	d.		£ d.
Locomotive expenses	290,810	17.83	22.01	Coaching 489,601 76.73
Permanent-way do.	215,265	13.20	16 29	Goods 831,726 83.76
Traffic do.	210,815	12.92	15.96	
General charges do.	20,743	1.27	1.57	
Balance, net earnings	£ 737,633 583,694	İ	55.83	
	£1,321,32	7		• £ 1,321,327 81 01
*Capital expended— Construction †£10,204,096 Rolling Stock, &c 1,594,230			Per cent. per annum return on capital 5.15	
	1	£11,798	3,326	

^{*} The lengths of lines and periods during which they were in operation are as under :--768 miles for 12 months. 10 $_{6}^{7\frac{1}{2}}$ 22 οħ do 21 do

[†] The cost of the Old Pitt-street Tramway is not included here.

SUBURBAN SECTION—SYDNEY TO GRANVILLE.

Sydney to Granville.

	Expenditure.							I	arnin	gs.	
Sydney to Granville— Miles open			Cost per train mile.	Percent. to earn- ings.	Sydney to Granville— Train mileage— Coaching436,145 Goods124,114 Total560,259				Earn- ings per train mile.		
Locomot Permane Traffic General	ent-way		 	£ 41,621 21,538 30,172 2,969	d. 17·83 9·23 12·92 1·27	17·95 9·29 13·01 1·28	Coaching Goods			£ 134,708 97,150	d. 74·13 187·86
Balan				135,558 231,858					£	231,858	99:32
Cons	truction ng Stock	 c, &c.		· 8	£1,223, 279, £1,503,	745		t. per capital	annu	m return	9.02

FIRST SECTION, SOUTH-GRANVILLE TO GOULBURN.

Granville to Goulburn.

Expendi	ture.	Earnings.			
Miles open 121 tr		Cost per train mile.	Per cent. to earnings	Granville to Goulburn— Train mileage— Coaching	Earn- ings per train mile.
-	£	d.		£	d.
Locomotive expenses	50,048	17.83	18:37	Coaching 98,01	5 80.83
Permanent-way do.	35,313	12.58	12.96	Goods 174,46	8 109.42
Traffic. do.	36,281	12.92	13.31		
General do.	3,570	1.27	1.31		
,	125,212	4.60	45.95		
Balance, net earnings	147,271		<u></u>		
£	272,483			£ 272,48.	3 97.07
				<u> </u>	
Line in operation 12 months. $\pounds 2,122,319$			Per cent. per annum return on capital	6.94.	

SECOND SECTION, SOUTH-GOULBURN TO ALBURY.

· Earnings. Expenditure. Earn-Per cent. to Cost per train ings per train mile. earnings mile. Total 770,574 £ d. d. Locomotive expenses 57,244 17.83 29.06 91,249 81.81 Coaching 16.09 26.22Goods... 105,748 50.47 Permanent-way do. 51,643 Traffic 41,500 do. 12.9221.06 General · do. 4,083 1.272.0748.11 154,470 78.41 Balance, net earnings... 42,527 196,997 61.36 £ 196,997 Capital expended— Construction ... Rolling Stock, &c. £2,150,481 237,684 Per cent. per annum return on £2,388,165 1.78. capital Line in operation 12 months.

Goulburn to Albury.

SOUTH-WESTERN LINE-JUNEE TO HAY.

Expendi	ture.	Earnings.				
Junee to Hay— Miles open			Per cent. to earnings	Junee to Hay— Train mileage— CoachingGoods	Earn- ings per train mile.	
	· £	d.			£	d.
Locomotive expenses	15,071	17.83	34.34	Coaching	15,349	32.71
Permanent-way do	26,653	31.53	60.72	Goods	28,544	75 [.] 91
Traffic do	10,925	12.92	24.89	_	40.000	<u></u>
General do	1,075	1.27	2.45	Loss on working	43,893 9,831	51.92
	53,724	63 [.] 55	122.40		53,724	
Capital expended—		£912 52 £965	,959	Loss per cent. per capital	annum o	n 1·17

Junee to Hay.

No. 1, West-Granville to Bathurst.

Granville to Bathurst.

Ex	pendit	ure.	Earnin _,	gs.			
Granville to Bathurst— Miles open			Cost per train mile.	Per cent. to caruings	Granville to Bathurst- Train mileage— Coaching Goods	256,789 753,332	Earn- ings per train mile.
		£	d.		1	£	d.
Locomotive expenses	•••	75,040	17:83	20.21	Coaching	92,296	86.26
Permanent-way do		43,049	10.23	11.77	Goods	273,569	87.15
Traffic do		54,398	12.92	14.87	` ,	·	-
General do	•••	5,352	1.27	1.46	ŧ .		
		177,839	42.25	48.61			
Balance, net earnir	ıgs	188,026				<u> </u>	·
	£	365,865				365,865	86.93
Capital expended— Construction Rolling Stock, &c.				,013 ,430			
Line in operation 12 m	ionth	s.	£2,862	,443	Per cent. per annu capital		on 6·57

No. 2, WEST-BATHURST TO NEVERTIRE.

Buthurst to Nevertire.

Expendit	Earnings.							
Bathurst to Nevertire- Miles open Train mileage6		Percent. to earn- ings.	Bathurst to Nevertire— Train mileage— Conching			Earn- ings per train mile.		
Locomotive expenses	£ 46,377	′d. 17:83	23.96	,			£	. d.
Permanent-way do	28,854	11.09	14.91	Coaching	•••		49, 386	89.28
Traffic do	33,619	12 92	17:37	Goods	•••	••.	144,144	70:38
General do	3,308	1.27	1.71					
Polones not compine	112,158 81,372	43.11	57-95					
Balance, net earnings	193,530	-				£	193,530	74.40
Capital expended— Construction Rolling stock, &c		£1,355 233	,284 ,501			•	,	
Line in operation— £1,588,785 133 miles for 12 months. 63 ,, ,, $2\frac{1}{3}$,,				Per cent. 1 capit		num 1	return on	6.11

MUDGEE BRANCH-WALLERAWANG TO CAPERTEE.

Exper	nditure.			Earnings.			
Wallerawang to Cape Miles open Train mileage		Percent. to carn- ings.		10,446 8,834	Earn- ings per train mile.		
	£	d.			£	·	
Locomotive expenses	1,432	17.83	26.88	Coaching	2,010	46.17	
Permanent-way do	2,914	36.27	54.69	Goods	3,318	90.14	
Traffic do	1,038	12.92	19.48				
General do	102	1.27	1.91				
•	5,486	68.29	102.96		5,328	66.32	
•	1	•	<u>. </u>	Loss on working	158		
Capital expended— Construction Rolling stock, &c.		£190	,000 ,428	£	5,486		
		£196	,42 8	<u> </u>		<u> </u>	
Line in operation for $7\frac{1}{2}$	months.			Loss per cent. per annu	m on capita	d 0·13	

Wallerawang to Capertee.

RICHMOND BRANCH—BLACKTOWN TO RICHMOND.

Expend	iture.		Earnings.			
Blacktown to Richmond,— Miles open Train mileage	Cost per train mile.	Per cent. to earnings	Blacktown to Richmond- Train mileage— Coaching	Earn- ings per train mile.		
	£	d.			£	d.
Locomotive expenses	3,977	17.83	34.97	Coaching	6,588	66·11
Permanent-way do	5,301	23.77	46 [.] 61	Goods	4,785	38.78
Traffic do .	2,882	12.92	25 [.] 34		11 979	50.99
General charges	. 284	1.27	2:50	Loss on working	11,373	50 55
	E 12,444	55.79	109.42	£	12,444	
Capital expended— Construction Rolling Stock, &c.		£157,5			,	
Line in operation 12 mont	Loss per cent. per annum o	on capita	1 .63			

Blacktown to Richmond. Northern and North-Western Lines.

' All Sections—North and North-Western.

Expendito	ıre	Earnings.		
All Sections—North and North-western— Miles open 347½ Train mileage 936,501		Cost per train mile.	Per cent. to earnings	
Locomotive expenses Permanent-way do Traffic do General charges	£ 70,197 46,724 71,601 8,480	d. 17·99 11·98 18·35 2·17	18·59 12·38 18·96 2·25	£ d. Coaching 98,224 76.59 Goods 279,312 106.63
Balance, net earnings	197,002 180,534 377,536	50:49	52·18	£ 377,588 96·75
*Capital expended— Construction £3,650,035 Rolling Stock, &c 395,255 £4,045,290				Per cent per annum return on capital 5·10

^{*} Note.—The lengths and periods during which the above lines were in operation during 1882, were 240½ miles for 12 months; 75 miles for 6 months; 32 miles for 3 months.

No. 1 North—Newcastle to Murrurundi.

TICHCASOIC	w
Murrurun	a:
murrurun	uı,

-	Expendit	ure.				Earnin	gs.	
	Miles open 124		Cost per train mile.	Per cent. to earnings	Newca Train mi Coac . Goo	Earn- ings per train mile.		
	•	£	d.	÷		•	£	d.
	Locomotive expenses	.44,361	17.99	17:31	Coaching		63,868	83.26
	Permanent-way do	23,224	9.42	9.07	Goods		192,372	113.24
	Traffic do	45,24 8	18.35	17:66		•		
	General do	5,359	2.17	2.09			_	
	Balance, net earnings	118,192 138,048	47.93	46.13				
	Capital expended— Construction Rolling stock, &c.		£1,741,			£	256,240	103.91
	Line in operation for 12 mo	•	£2,010		Per cent. capital	per annun	n return of	n . 6·87

No. 2 North-Murrurundi to Tamworth and Uralla.

Expendit	ure.				E	ırning	8.		Murruru to Urall
Murrurundi to Uralla— Miles open Train mileage 2	Cost per train mile.	Per cent. to earnings	I Goods 165,000 I				Earn- ings per train mile.		
	£	d.					£	d.	
Locomotive expenses	18,244	17.99	21.94	Coaching	•••		23,721	72.63	
Permanent-way expenses	15,976	15.75	19.21	\mathbf{G} oods	•••		59,454	86.47	
Traffic expenses	18,609	18.35	22.37						
General charges	2,204	2.18	2.65						
Balance, net earnings	55,033 28,142	54.27	66:17			}	* -		
£	83,175	-				£	83,175	82.01	
TO 11' 4 7 0	::	£1,360 87 £1,447	,079	Per cent.	per a	annui 	m return	on 2·78	

NORTH-WESTERN LINE.

Expendit	are.		Earnin	gs.			
Worris Creek to Narrabri— Miles open	Cost per train mile.	Per cent. to earnings	Werris Creek to Narr Train mileage— Coaching Goods	Earn- ings per train mile.			
Locomotive expenses Permanent-way do Traffic do General do	£ 7,592 7,524 7,744 917 23,777 14,344	d. 17·99 17·83 18·35 2·17 56·34	19·91 19·74 20·31 2·41 62·37	Coaching Goods	£ 10,635 27,486	d. 56·32 117·87	
	38,121				38,121	90.33	
Capital expended— Construction Rolling stock, &c Line in operation— 41 miles for 12 months. 24 do 6 do 32 do 3 do		89	,711 ,910 ,621	Per cent. per annum capital	return on	3·64·	

Werris Creek to Narrabri.

STATEMENT OF PROFIT AND LOSS.

Statement of profit and loss.

In the following summary is given a statement of the Lines open for Traffic; the period each was working; the cost of construction, including Rolling Stock, &c.; the total capital expended; and the net earnings and the per cent. per annum returned on capital expended.

Lines open for Traffic.	Period for which lines Wiles. Wiles. Were in Operation.		Cost of Con	struction.	Cost of Rolling Stock, Machinery, &c., used in working.	Total capital	Net Earnings.	Loss on working.	Rate per cent, per annum of interest returned on capital.	Loss per cent. per annum on capital.
	Miles.	Period for were in c	Amounts.	Totals.	Cost of. Stock, M &c., used i	expended.	Larnings.	Loss on	Rate per annum o returned	Loss per
	Miles.	Ms.	, £	£	£	£	£			
Sydney to Granville	14½	12	, æ	1,223,990		1,503,735			9.02	
Granville to Goulburn	1211	12		1,793,558	328,761	2,122,319	147,271		6.94	
Goulburn to Albury	252	12	•••••	2,150,481	237,684	2,388,165	42,527		1.78	
	34	6	186,263							
[Junce to Hay	34	10	186,264 }	912,219	52,959	965,178	•••••	9,831		1.17
	99	12	539,692							
Granville to Bathurst	132	12	*******	2,421, 013	441,430	2,862,443	188,026		6.57	
Bathurst to Nevertire {	63	21/3	320,000 }	1,355,284	233 501	1,588,785	81,372		6.11	
200741150 80 2101011110 }	133	12	1,035,284	1,000,204			•		0	
Wallerawang to Capertee	22	7 ½		190,000	6,428	196,428		158	•••	0.13
Richmond Branch	16	12		157,551	13,722	171,273		1,071	•••	0.63
Newcastle to Murrurundi	125 1	12		1,741,921	268,266	2,010,187	138,048		6.87	
Murrurundi to Uralla {	51	6	623,072	1,360,403	87.079	1,447,482	28,142		2 78	
	74	12	737,331	2,000,100	0,,0,0	_,,				
(32	3	172,390							
Werris Creek to Narrabri	24	6	129,264	547,711	39,910	587,621	14,344		3 64	
	41	12	246,057		l		775,288	11,060		
				Deduct lo	ss on wor	king		. [
All Lines	1,2681		·····	13,854,131	1,989,485	15,8 43,61 6	764,228		5.14	
]			,		!					<u> </u>

9.—Ton Mileage.

Gross ton mileage. In the following tabulated statement are shown the average distance each passenger and each ton of goods was conveyed, and the amount received per passenger and per ton for every mile carried:—

	South	& West.	North.	Total.
Average mileage per passenger Average mileage per ton—goods and live stock Average receipts per mile per passenger Average receipts per ton per mile, coaching traffic Average receipts per ton per mile, goods traffic Average receipts for coaching traffic per ton per mile, including tare Average receipts for goods traffic per ton per mile, including tare Average receipts for goods traffic per ton per mile, including tare	,,	11.53 91.33 1.08 15.91 2.03 .593	24·91 17·27 1·21 17·52 2·52 ·633	12·47 47·73 · 1·10 16·16 2·13 · 599

In the Appendix to this Report will be found the ton mileage returns Appendix No. of our lines for 1882, and details of the net earnings of the different descriptions of goods traffic are afforded in the following tables.

The amount which each item contributes to the net earnings is shown as under:—

GREAT SOUTHERN, WESTERN, AND RICHMOND LINES.

Ton Mileage.

Description of Goods.	Weight carried.	Miles carried.	Average miles per ton.	Freight.	Tonnage amount per mile per ton.	Per ton per mile, net and tare.		Net earnings per ton per mile.
Flour	28,400 48,347	No. 3,044,953 2,549,722 10,858,308 3,674,958 2,374,319 3,450,936 2,108,069 6,629,310 10,112,381 53,633,088	No. 121 31 131 82 92 54 25 60 32 88 80 64 84 64 233 43 209 21 96 20	£ 14,612 10,114 43,412 20,066 12,593 14,296 12,225 67,790 116,660 520,823	d. 1·15 0·95 0·96 1·31 1·28 0·99 1·39 2·45 2·77 2·33	d. 365 302 266 349 351 266 315 424 348 487	d. 234 234 234 234 234 234 234 234	d. 131 068 032 115 117 032 081 190 114 253

The large items of goods traffic on Great Southern, Western, and Richmond lines distinguished.

Description of Goods.	Ton mileage.	Freight received.	Net earnings per ton per mile.	Proportion of net earnings.
_	No.	£	d.	£
Flour	9,606,053	14,612	·131	5,250
Wheat	8,038,647	10,114	.068	2,280
Coal	39,204,015	43,412	.032	5,235
Firewood	13,816,729	20,066	115	6,634
Road-metal	8,614,296	12,593	·117	4,206
Shale		14,296	.032	1,721
Hay and Straw	9,313,531	12,225	.081	3,148
Wool	38,356,517	67,790	·190	30,412
Live Stock	80,350,029	116,660	.114	38,228
All other goods	256,690,838	520,823	.253	271,124
Total	476,879,184	832,591	·185	368,238

The proportion to net earnings which they contributed shown.

GREAT NORTHERN RAILWAY.

Description of Goods.	Weight carried.	Miles carried.	Average miles per ton.	Freight.	Tonnage amount per mile per ton.	Per ton per mile, net and tare.	Working expenses per ton per mile.	Net earnings per ton per mile.
	Tons	No.	No.	£	d.	d.	d.	d.
Flour	7,146	414.140	57.95	2,474	1.43	.467	.251	·216
Wheat	3,090	150,605	48.74	886	1.41	.451	·251	.200
Hay and Straw	7,563	341,763	45.19	2,567	1.80	421	·251	·170
Coal (Govern-	,	,						'
ment trucks)	12,882	998,924	77.54	3,935	0.95	.303	.251	·052
Coal (owners'				İ	Ï			
trucks)	1,314,178	9,398,514	7.15	59,370	1.52	-522	·321	.201
Wool	13,683	2,284,945	166.99	30,712	3.23	•576	.251	·325
Live stock	13,843	1,754,387	126.73	23,419	3.20	415	.251	·164
All other goods	169,622	11,281,193	66.51	151,206	3.22	.286	.251	.335
Total	1,542,007	26,624,471	17.27	274,569	2.47	.550	·267	283

The large items of goods traffic on Great Northern line distinguished.

GREAT NORTHERN RAILWAY-continued.

The proportion to net earnings which they contributed shown.

Description of Goods.	Ton mileage.	Freight received.	Net earnings per ton per mile.	Proportion of net earnings.
Flour Wheat Hay and Straw Coal (Government trucks) Coal (owners' trucks) Wool Live Stock All other goods Total	1,464,562 3.116.099	£ 2,474 886 2,567 3,935 59,370 30,712 23,419 151,206	d. -216 -200 -170 -052 -201 -325 -164 -335	£ 1,145 387 622 677 22,950 17,380 9,290 86,712

10.—Wool Returns.

The following is a return of the Wool carried on the Railways for the years 1881 and 1882:—

Returns for 1882 compared with 1881. Appendix No. 28, p. 93.

		South and West.	North.	Total.
No. of bales in 1882		162,584	73,334	235,918
Do. 1881		168,512	55,875	224,387
Increase in	ı 1882		17,459	11,531
Decrease i	n 1882	5,928	*********	
Revenue in 1882	£	67,790	30,712	98,502
Do. 1881	£	70,685	22,498	93,183
Increase in	n 1882 £		8,214	5,319
Decrease i	n 1882	2,895	•••••	••••••

The return above shows the wool carried during the year. In Appendix No. 29 will be found the quantity carried from each station for the season 1881-2, in comparison with the season 1882-3.

Wool carried for season 1881-2 compared with 1882-3. Dividing the line into sections, it will be found that there is a decrease of 2,828 bales on the Main Southern Line between Sydney and Albury. There has been very little change on the last opened portions, from Wagga Wagga to Albury, the decrease being at stations that have been opened for some considerable time, and must be due mainly to the severity of the season which has checked the natural increase of sheep and reduced the clip of wool. The South-western Line, owing to the opening of the extension from Darlington to Hay for the season 1882–3, shows a very considerable increase, the quantity carried being 17,353 bales in the season 1881–2, against 30,502 bales for the season 1882–3, an increase of 13,149. This represents wool that had previously gone to Victoria, but which, owing to the extension of the line to Hay, has now been diverted to our lines. The quantity of New South Wales wool sent across the border to Victoria has for years, owing to the extension of our Railways into Riverina, been steadily declining. From

the statistics published this year by the Collector of Customs it will be found that four years back, viz., in 1879, the quantity of wool sent across the border into Victoria was 175,761 bales; in 1880 it had been reduced to 153,049; in 1881, to 126,349; and in 1882, to 115,584—a decrease of 10,765 bales in comparison with 1881, and a decrease of 60,177 in four years. It must be remembered also that during this period the total number of sheep in the Colony has been increased by 20 per cent.

Turning to the Western Line, the result is not so encouraging. In 1881-2, 91,969 bales of wool were carried, while in 1882-3 the number carried was only 74,150, a decrease of 17,546 bales, almost entirely due to the drought, which was very severe in the Western Districts.

The Northern Line shows a total increase of 23,683 bales. The principal increase, 17,420 bales, was due to the extension of the Northwestern Line. There was an increase of 4,597 bales on the line between Murrurundi and Uralla, but a small decrease (334 bales) on the portion of the line that has been long opened for traffic.

Altogether the wool traffic for the season shows an increase of 14,185 bales, a result due entirely to the newly opened extensions diverting that traffic to our lines that had long been enjoyed by the other Colonies. A double advantage is reaped by drawing the wool to our lines, for not only is the Railway benefited in getting the traffic, but the return loading is obtained, in the shape of station supplies, implements, &c.; and further, trade is kept in our own Colony and with our own people that would otherwise be obtained by the merchants of the neighbouring Colonies. Had the season been a favourable one the natural increase in the number of sheep would have materially augmented the total quantity of wool carried.

In the following statement is given the number of sheep in the Colony at the close of the years 1881 and 1882:—

Districts.	Number of Sheep, 1st January, 1882.	Number of Sheep, 1st January, 1883.	Increase, 1st January, 1883.	Decrease, 1st January, 1883.
Border	11,492,128	10,404,587		1,087,541
Northern	6,991,956	8,482,938	1,490,982	
Southern	9,167,548	9,179,537	. 11,989	
Western	8,940,314	8,047,752	•••••	892,562
	36,591,946	36,114,814	1,502,971	1,980,103

Number of sheep in the Colony.

11.—COAL TRAFFIC.

Coal traffic, Appendix, Nos. 33-39, pp. 100-103. The coal traffic during the year shows a satisfactory increase. This great interest was not disturbed, to any material extent, by strikes, and as an increased export trade was done a larger quantity of coal than usual was carried.

The total quantity carried over the Northern Line for the years 1881 and 1882 was as follows:—

			Tons.	Freight.
1882	•••	• • •	1,327,060	£63,305
1881	•••	• •••	1,029,256	47,510
Incres	ase		297 804	15 795

The following were the quantities shipped for foreign and intercolonial ports:—

1882				,	 1,080,446
1881		,	•••	•••	 899,369
Т	ກດນອາ	92			181.077

Appendix No. 38, p. 103.

There was a still larger proportionate increase in the quantity of coal and shale hauled over the South and West Lines. Increased activity was shown in the working of the Lithgow mines, which has resulted in a very much larger output for the year 1882. The quantity of shale forwarded from Hartley Vale and Joadja was nearly doubled; while a considerable quantity of coal was forwarded from the mines recently opened on the Southern Line, near Moss Vale. The development of the coal mines on the Southern Line is a matter of great importance to the Department; previously the coal used on that line had to be drawn from Lithgow and Sydney, but now a considerable proportion of this haulage can be saved. The total traffic on the Southern and Western Lines was as follows:—

	Tons.	Freight.
1882	152,705	£55,924
1881	105,524	38,121
Increase	47,181	17,803

In addition to the above there were 99,429 tons conveyed for the Department, the freight on which amounted to £43,322. As this coal was used for locomotive purposes the sum named has not been included in the revenue returns of traffic.

12.—RETURNS.

In addition to the Returns given and referred to in the Report, the following will be found in the Appendix:—

Appendix No. 24, p. 78. 1. The particulars of the various classes of merchandise carried, its tonnage, and freight value.

Appendices Nos. 25 & 26, pp. 83-91. Appendix No. 27, p. 92.

Appendix No. 30, p. 96.

- 2. The revenue traffic and expenditure at each of the Stations.
- 3. Live stock traffic.
- 4. Statement of the value of the live stock and wool, &c., exported over the Border.

5. Business transacted at Central Booking Office.

6. Detailed returns of the coal traffic.

10. Return of accidents.

- 7. Particulars of the suburban passenger traffic.
- 8. Merchandise traffic rates, 1881 and 1882.
- 9. Comparative statement of the rates of railway carriage in the Austra-Appendix No. 52, pp. 134-

No. 53, p. 145.

Appendix No.

Appendix No. 31, p. 97.

Appendices

- 11. Table of the progress and financial position of the Railways, from Appendix No. 55, p. 147. 1855 to the end of 1882.
- 12. Number and classification of employés, and the scales of, and total Appendices amount paid for, salaries and wages. pp. 148-155.
- 13. Return of free passes issued during 1882.

Appendix No. 58, p. 156.

Annexed to the Appendix are thirteen coloured diagrams, showing the following particulars of the Railway transactions for each of the twenty-seven years from 1855 to the end of 1882:-

- 1. Length of line opened on 31st December in each year.
- 2. Number of passengers.
- 3. Tonnage of goods.
- 4. Earnings from coaching traffic.
- 5. Earnings from goods traffic.
- 6. Gross and net earnings and working expenses.
- 7. Working expenses.
- 8. Earnings per train mile.
- 9. Working expenses per train mile.
- 10. Percentage of working expenses to gross earnings.
- 11. Net earnings.
- 12. Capital invested in lines open.
- 13. Interest on capital.

A Railway map showing in colours the Railway systems of the Colony, the lines constructed, under construction, and authorized, is appended.

13.—RECAPITULATION.

The transactions during the year are thus summarized:-

The total expenditure for construction was £16,776,642, of which the sum of £15,848,494 was expended for lines opened for traffic.

The net earnings were £764,228, yielding 4.55 per cent. to the total capital expenditure, and 5.14 per cent. to the capital invested on lines open for traffic.

At the close of the year, 1,268 miles of line were open for traffic, and 504 miles were in course of construction.

The rolling stock consisted of 268 locomotives, 564 coaching, and 5,445 goods vehicles.

64-E

The value of the railway materials, in the conveyance of which 155 vessels were employed, amounted to £447,431, and the freight and insurance to £42,684, making a total of £490,115.

During the year, 104,153 trains, of which 57,176 were passenger and 46,977 goods trains, were run a distance of 4,851,127 miles. The earnings amounted to £1,698,863, and the working expenditure to £934,635, or 55.02 per cent. of the earnings. 8,984,313 passengers travelled, of whom 2,836,909 were first class, and 6,147,404 were second class. Included in these figures are 15,785 season-ticket holders, representing 3,425,736 journeys. The proportion percentage of these classes is for first class passengers 16.03, second class 45.85, and for season-ticket holders 38.12.

The merchandise traffic consisted of 1,348,679 head of live stock, 235,918 bales of wool, 1,789,896 tons of minerals, and 725,281 tons of general goods.

The earnings per mile open were £1,518, the expenditure was £835, the net earnings were £683.

The earnings per train mile were 84.05d., the expenses 46.24d., and the net earnings 37.81d.

There was an increase of 411,270 in the number of first class passengers, of 751,117 second class, and 914,614 in the journeys made by season-ticket holders, also an increase in the receipts of £99,150 from coaching traffic, and of £155,487 from goods traffic—making a total increase of £254,637.

I may conclude this Report by congratulating the Government upon the results which have followed the extension of the railways into the border lands of the Colony. The additional extensions which have been authorized will still further promote the commercial relations between the distant parts of the country and the metropolis, open up fresh fields for settlement, and stimulate the development of our natural resources.

I have the honor to be,

Sir.

Your most obedient servant,

Commissioner for Railways.

The Honorable F. A. Wright,
Secretary for Public Works,

&c., &c.,

&c.

TRAMWAYS OF NEW SOUTH WALES.

Department of Public Works, Railway Branch, Sydney, 1 September, 1883.

Sir,

I have the honor to supplement my Report for 1882, upon the Railways of the Colony, with a report for the same period upon the construction and operation of the Tramways in the City and Suburbs of Sydney.

In the following table is given the capital expenditure on the lines Capital open and under construction to 31 December, 1882:—

Lines and Sections.	Total Exp to 31st D 188	endit ecemb	ire er,	Amount e	expo 82.	ended	Total exp 31st Dec	end	ed to 382.
	£	8.	d.	£	8.	d.	£	8.	d.
Railway Station to Circular Quay	28,450	14	9	13,214	14	0	41,665	8	9
Liverpool-street to Randwick and Coogee	46,126	10	0	20,316	5	10	66,442	15	10
Darlinghurst Junction to Waverley and Woollahra	24,331	18	4	13,000	2	6	37,332	0	10
Crown-street Junction to Cleveland-street	5,651	15 1	0	858	17	10	6,510	13	8
Campbelltown to Camden	14,529	14	8	14,984	16	6	29,514	11	2
Newtown (Glebe Junction) to Marrickville	12,208	14	9	17,813.	2	8	30,021	17	5
Glebe Point and Forest Lodge	4,419	6	0	34,240	7	9	38,659	13	9
Railway Station Junction to Botany	7,129	2	1	64,133	8	1	71,262	10	2
Newtown to Cook's River	297	3	7				297	3	7
Harris-street to Pyrmont	.61	2	1	214	19	9	276	1	10
Total cost of construction	143,206	2	_ 1	178,776	14	11	321,982	17	0
Tramway workshops for all lines			8	18,134			29,368		
Rolling stock	63,021	7	1	36,815	7	11	99,836		
Machinery	669	6	2	1,553	4	11	2,222		
Furniture	1,198	13	1	848	6	5	2,046	19	6
Trial surveys, as shown in 1881 £1,049 .15 8	-								
Transferred, as above									
	988	13	7	1,699	6	7	2,688	0	2
Total	220,317	16	8	237,827	7	Q.	458,145	3	8

In addition to the sum of £600,000, voted in 1880 for the construction of Tramways, the sum of £400,000 was voted on the Loan Estimates for 1883 for this service. The balance in hand on the 31st August last was £354,000.

Lines open.

At the close of 1881 there were $9\frac{1}{2}$ miles of Tramway open for traffic. During 1882 an additional $12\frac{1}{2}$ miles were opened, increasing the mileage in operation on 31 December, to 22, the capital expended upon which, inclusive of rolling stock, machinery, and workshops, was as under:—

	*	Capital i	nvested.	
Lines open for Traffic.	Actual length in miles.	Construction of Lines.	Proportion of cost, rolling stock, machinery, workshops, &c.	Total Capital invested.
	•	£	£	£
Redfern Railway Station to Bridge-street	$1\frac{3}{4}$	41,665	18,242	59,907
Liverpool-street Junction to Randwick	$3\frac{1}{2}$	59,498	20,117	79,615
Darlinghurst Junction to Waverley and Woollahra	$3\frac{1}{2}$	37,332	37,700	75,032
Crown-street to Cleveland-street	$0\frac{3}{4}$	6,511	13,029	19,540
Devonshire-street Junction to Botany	6 <u>3</u>	71,263	20,027	91,290
Railway Station Junction to Glebe Point and Forest Lodge	$2\frac{1}{2}$	38,662	8,983	47,643
Newtown Road Junction to Marrickville	31	30,022	9,512	39,534
		<u> </u>		·
Total	22	284,951	127,610	412,561

The extensions opened during the year have caused a very large increase in the transactions of the Tramways. The Camden Line, which may be considered to be connected more with the Railway than with the Tramway system, was opened on the 10th March, 1882. This line, $7\frac{1}{2}$ miles in length, is an experimental one, constructed in order to see whether tram lines can profitably be used as subsidiary or feeding lines to the main trunk lines. The result, so far, has been unsatisfactory, the transactions for the nine months of 1882 the line was in operation showing a loss of over $1\frac{1}{2}$ per cent. upon the capital expended.

The Tramway to Botany via Redfern and Waterloo was opened on the 17th May, 1882. The line has been extensively patronised. The population in Redfern and Waterloo affords a large permanent traffic, while at holiday times the number of passengers from the City to Botany has been so great as to tax the rolling stock resources of the Department to the utmost.

On the 15th August, 1882, the Main Line was extended from Hunterstreet to the present Terminus at Bridge-street, where space was obtained to provide for the necessary shunting of the motors and cars. The area acquired, however (two acres in extent), is much too small for the purpose, and this can be readily understood when it is mentioned that there are upwards of 1,000 trams arriving at and leaving the Terminus daily.

On the same day that the Terminus at Bridge-street was opened, viz., the 15th August, the lines to Forest Lodge and Glebe Point were brought into operation. The road carrying both lines, from the Railway Station at Redfern to the junction of Parramatta-street with the Newtown Road, has been paved with wooden blocks, the Government paying $\frac{3}{5}$ and the Corporation of Sydney $\frac{2}{5}$ of the expense. It will be seen from the sectional Returns

that

that these extensions were worked at a loss last year; they were, however, open for a short period only, four and a half months, and as they have been better patronised since more satisfactory returns are looked for.

The line from George-street West to Newtown was opened for traffic on the 2nd October, 1882. This line connects with the Tramway from Newtown to Marrickville, opened 31st December, 1881, and a continuous service is now afforded between Marrickville and Sydney.

Since the close of 1882 the following new extensions have been brought into operation:—

Randwick to Coogee, 2 miles, opened on the 25th January.

George-street West, towards Leichhardt, $1\frac{1}{4}$ mile, opened on the 18th June. This line is to be continued through Annandale to Leichhardt.

There are at the present time no new Tram lines in course of con-surveyed struction, but surveys have been made of the following proposed extensions:—

Along Harris-street to John-street, Pyrmont, 1 mile 19 chains.

From the present Terminus at Bridge-street via the Circular Quay by George-street to Lower Fort-street, and thence by Kent-street, Sussex-street, and Quay-street to the Parramatta-street Bridge, 3 miles.

From the Tea Gardens, Waverley, to Bondi, 1 mile 60 chains.

From Milson's Point to the public Reserve at the North Shore; and thence by the Military Road to Middle Harbour; and from Middle Harbour to Brighton (Manly Beach), 9 miles.

From Newcastle to Platsburg, 8 miles 25 chains.

From the Leichhardt Line, at Balmain Road, to Five Dock, 4 miles 13 chains.

Other lines have been surveyed, notably a line from Leichhardt, through Balmain, and over the Bridges to Ryde; a line from Bowral, or Moss Vale, to Robertson; and a line from Goulburn to Crookwell; but the question whether these and other lines are to be tram-lines—making use as far as practicable of the ordinary roads—or light lines of railways having independent and fenced-in routes, has not yet been finally determined.

REVENUE EXPENDITURE.

The total earnings derived from the City and Suburban Tramways Appendix 15, during the year were £126,202, an increase of £63,653 over the earnings of 1881. The expenditure was £103,136, and the net earnings £23,066, which, upon the capital invested in lines open, gave a return of 6.80 per cent. As will be seen from the foot-note to the sectional returns, one-seventh only of the cost of relaying the line from Hunter-street to Redfern station with steel rails has been charged to the working expenses of 1882, it having been decided that as the steel rails were guaranteed by the manufacturers to last for seven

years,

years, it would not be right to burden one year with the whole cost of relaying; indeed it is open to question whether any portion of this outlay should be charged to working expenses, in view of the fact that the line which was replaced was constructed as a temporary one only to meet the special requirements of the traffic for the time the Exhibition of 1879 and 1880 was open. The charge, in this aspect of the case, is properly one for capital to bear, but as to so charge itjustifiable as that course could have been shown to be-would have been to introduce a departure from the invariable practice of the Department to charge revenue with all cost of renewals, exceptional or otherwise, it was determined to adhere to that principle in this instance also. In addition to the heavy expense incurred in the relaying of the line from Redfern to Hunterstreet, a large sum was spent in renewing with steel rails portions of the Randwick and Waverley Lines, the cost of which was wholly charged to the working expenses for the year. The larger portion of this expense was spent on the line from Liverpool-street to Botany-street, and as this is included in the Randwick section, the net earnings derived from that section are consequently low—a better return will be shown for the present year.

The section from the railway station to Hunter-street shows the highest return of interest to capital, viz., nearly 16 per cent., while the Waverley and Woollahra section comes next with the handsome return of 13 per cent.

The increase in the passenger traffic was, owing to the opening of fresh lines, very great. In 1881, 7,090,125 passenger fares were collected, but during 1882 the collection reached the large total of 15,269,100 fares, equal to 986,400 per average mile of line, while the earnings were equal to £8,142 per average mile of line, results which exceed any published Tramway transactions in any part of the world.

Appendix 21, The working expenses, compared with those of 1881, are shown in the following statement:—

`				,	1882.	1881.	Increase.
		•			£	£	£
Locomotive power					52,736	22,819	29,917
Carriage repairs	.:.				· 7,974	3,331	4,643
Maintenance and re	newal	of Way	<i>7</i>		17,481	13,552	3,929
Traffic charges		•••			22,836	11,069	11,767
General charges	•••	•••	•••		2,109	1,336	773
				-	103,136	52,107	51,029

In the following statements are given the capital expenditure, the gross earnings, the working expenditure, the net earnings, and the return which the net earnings give to the capital invested in each section.

CITY

All sections

CITY AND SUBURBAN TRAMWAYS-1882.

ALL SECTIONS.

Expenditure. Earnings. Earn-All Sections Cost pe Per All Sectionsngs pe train
 Miles open
 22

 Train mileage
 670,649
 train cent. to 22' mile. earning mile. d. d. Locomotive expenses 60,710 21.73 48.11 Earnings from all sources 126,202 45.16Permanent-way 17,481 6.2613.85 Traffic 22,836 18.09 8.17 General do 2,109 .75 1.67 103,136 36.9181.72Balance, net earnings... 23,066 £ 126,202 45 16 Capital expended -Construction £284,951 127,610 Interest returned on capital expended, Rolling stock, workshops, &c. 6.80 % per annum. £412,561 Lines in operation 111 miles for 12 months. 7 5 4를 do do 22 miles do do 3 do do

Note.—The amount given above as permanent-way expenses is that properly chargeable to the working of the year 1882. The line Redfern to Hunter-street was during the year relaid with steel rails, for which the manufacturers when supplying gave a guarantee of seven (7) years wear. The whole of this expenditure, owing to the system of voting annual supplies, has to be charged in the books to the particular year in which the money was actually expended; the accounts for this year will therefore show a sum of £14,325, or $\frac{a}{7}$ of the cost of relaying the Redfern line during 1882, in excess of the permanent-way expenses as shown in this statement.

RAILWAY STATION TO BRIDGE-STREET.

Expendi	ture.	Earnings.				
Railway Station Line— 13			Per cent. to earnings	Railway Station Line- Miles open Train mileage	Earn- ings per train mile.	
Locomotive expenses	£ 7,565	d. 21.73	31.99	Earnings from all sources	£ 23,651	d. 67·92
Permanent-way do	3,444	9.89	14.56			
Traffic do	2,846	8.17	12.03			
General - do	263	·75	1.11			
· .	14,118	40.54	59.69	, ·	·	
Balance, net earnings	9,533		<u> </u>			
· at	23,651			£	23,651	67.92
Capital expended— Construction Proportion rolling stoc	Interest returned on cap 15 91 % per annum.	ital expe	nded,			
Line in operation 12 mont	as.	£59	,907			•

Note.—The sum given above as permanent-way expenses is that properly chargeable to the year 1882, on which see note on all sections statement.

Railway Station to Bridge-street Liverpool-st Junction to Randwick.

LIVERPOOL-STREET JUNCTION TO RANDWICK.

Expendi	turę.	Earning	s.			
Randwick Line— No. of miles open 3½. Train mileage116,427.			Percent. to earn- ings.	Randwick Line- No. of miles open Train mileage	3չ.	Earn- ings per train mile.
Locomotive expenses	£ 10,539	d. 21.73	47·21	·	£	d.
Permanent-way do	5,943	12.25	26.62	Earnings from all sources	22,323	46.01
Traffic do	3,965	8.17	17.76		,	
General do.,	366	0.75	1.64	•	,	
	20,813	42.90	93.23			
Balance—net carnings	1,510		·			
£	22,323		•	,		
Capital expended— Construction	· , <u>-</u> - ,	' £59	408	£	22,323	46.01
Proportion—Rolling St				Not coming an usu cont		
Line in operation twelve m	onths.	£79	,615	Net earnings per cent. I on capital	er annum	1.90

DARLINGHURST JUNCTION TO WAVERLEY AND WOOLLAHRA.

Darlinghurst
Junction to
Waverleyand
Woollahra.

Expendit	ure.	Earning	9.			
Waverley and Woollahra Line— No. of miles open $3\frac{1}{2}$. Train mileage 149,040.			Percent. to earn- ings.	Waverley and Woollahr No. of miles open. Train mileage	$3\frac{1}{2}$.	Earn- ings per train mile.
Locomotive expenses	£ 13,492	d. 21.73	40.61		£	d.
Permanent-way do Traffic do	4,381 5,075	7·06 8·17	13·19 15·27	Earnings from all sources	33,226	53·50
General do	469	0.75	1.41			,
	23,417	37.71	70.48			
Balance—net earnings	9,809					
Capital expended— Construction Proportion—Rolling Ste	 ock, &c.	£37 37	,332 ,700	æ	33,226	53:50
Line in operation twelve m	onths.	£75	,032	Net earnings per cent. p on capital	er annum 	13.07

CROWN-STREET TO CLEVELAND-STREET.

Crown-street to Clevelandstreet.

Expenditure	».	Earning	5.			
Crown-street Line— Miles open			Per- cent. to earnings	Crown-street Line— Miles open Train mileage	4.	Earn- ings per train mile.
	£	`-d.	£	·	£	d.
Locomotive expenses	6,436	21.73	61.31	Earnings from all sources	10,498	35.44
Permanent-way do	506	1.71	4.82			
Traffic do	2,420	8.17	23.05	•		
General do	224	·75	2.13	•		
	9,586	32.36	91:31		•	
Balance, net earnings	912			•		
Capital expended— Construction	10,498	. £6	,511	£	10,498	35.44
Proportion—Rolling Stoc	k, &c	. 13	,029	•		
Line in operation, 12 months		£19	,510	Net earnings per cent. to capital	per annum	4.67

DEVONSHIRE-STREET JUNCTION TO BOTANY.

Devonshirestreet Junction to Botany.

Expendi	ture.	. Earning:				
Waterloo and Botany Line— Miles open			Per- cent. to carnings	Waterloo and Botany Line — I Miles open		
	£	d.			£	d.
Locomotive expenses	10,808	21.73	57 43	Earnings from all sources	18,819	37.83
Permanent-way do	1,146	2 ·30	6.09			
Traffic do	4,065	8.17	21.60			
General do	375	.75	1.99	·		
	16,394	32.95	87:11		-	,
Balance, net earnings	2,425			-		
£	18,819			$oldsymbol{arepsilon}$	18,819:	37.83
Capital expended— Construction Proportion—Rolling S	 tock, &c	£71 20	,263 ,027	<u>.</u>		
Line in operation, 7½ mon	ths.	£91	,290	Net earnings per cent. on capital	per annun	ı . 4·25
				<u>, </u>		

Glebe Point and Forest Lodge.

RAILWAY STATION JUNCTION TO GLEBE POINT AND FOREST LODGE.

	Ex	pendi	ture.			Earnings.		
Glebe Point an Miles oper Train mile	ı .		$2\frac{1}{2}$	Cost per train mile.	Per cent. to earn- ings.	Glebe Point and Forest Lod Miles open	ge— 2½. ,014	Earn- ings per train mile.
			. £	d.			£	d.
Locomotive exp	enses		6,519	21.73	76:34	Earnings from all sources	8,539	28.46
Permanent way	do		480	1.60	5.62	Balance, loss on working	1,139	ļ <u>.</u>
Traffic	do		2,453	8.17	28.73			-
General	do	•••	226	·75	2.65			
		- £	9,678	32.25	113.34	, £	9,678	
Capital expended— Construction £38,660 Proportion Rolling Stock, &c. 8,983						,	•	
Line in operation, 4½ months.						Loss per cent. per annum on	capita	16.38

Newtown and Marrickville.

. NEWTOWN ROAD JUNCTION TO MARRICKVILLE.

Expendi t ure.				Earnings.		
Newtown and Marrickville Line— Miles open	$3\frac{1}{4}$	Cost per train mile.		Newtown and Marrickville Li Miles open59 Train mileage59	3 4	Earn- ings per train mile.
Permanent way do	£ 5,351 .,581	d. 21·73 6·42 8·17	58·51 17·29 22·00	Earnings from all sources	£ 9,146	d. 37·14
General do	186),130	75 37·07	2·03 99·83			
Capital expended—	16 9,146		000	ę	9,146	37:14
Construction Proportion Rolling Stock, Line in operation—	&c	9	0,022 0,512 0,534	ato	9,140	37 14
$1\frac{3}{4}$ mile for 12 months. $1\frac{1}{2}$ do 3 do.	•			Net earnings per cent. per on capital	annun 	0.05

CAMPBELL/TOWN TO CAMDEN TRAMWAY.

Campbelltown to Camden.

	Ex	pendit	ure.			Earnings.	
Camden Tramw Miles open Train miles	• • • • • • • • • • • • • • • • • • • •	2	7½ 3,007	Cost per train cent. to mile.		Camden Tramway— Har Miles open	per in
			£	d.		£ d.	-
Locomotive exp	enses	•••	1,189	12.40	55.23	Coaching 1,288 23.0)3
Permanent-way	do		707	7.38	32.84	Goods 865 21.6	35
Traffic	do	•	794	8.28	36.88	Total earnings 2,153 22.4	<u>-</u> 6
General	do-	••.	30	·31	1.39	Balance loss on working 567	
		£	2,720	28.37	126.34	€ 2,720	
Capital expende Construction Rolling stock	٠.,	•••		£	29,515 5,864		
Line in operatio	n, 9½ m	onths	i.	£	35,379	Loss per cent. per annum on- capital 2.0)2

ACCIDENTS.

A return of accidents will be found in Appendix No. 54. The number Appendix 54, of persons killed during the year was 8, the same number, it may be p. 146. mentioned, as was recorded for 1881. Of these eight, four were run over, three lost their lives through their own want of caution in attempting to enter or leave the cars when in motion, and one (a tram conductor) was killed by being knocked off the footboard of a car by a passing dray.

The most serious accident occurred on the Camden Line a few days after it was opened for traffic. A tram from Camden, laden with passengers, when approaching the junction at Campbelltown, was, in error, turned into a siding, and collided with some ballast waggons. A number of passengers sustained a severe shock, but fortunately none were fatally or very seriously injured. Two collisions, but not of an important character, happened during the year on the City lines, causing slight injuries to six persons.

ROLLING STOCK.

The Locomotive Running Sheds, which were described in the last Rolling stock. Annual Report, have been completed, and are found of great advantage in enabling the necessary repairs to the motors and cars to be carried out with facility.

The stock at the end of the year consisted of forty motors, eighty-one cars, and five trucks, an increase of seventeen motors, thirty-four cars, and five trucks over the previous year's supply. The vehicles now possessed by the department are found fairly equal to the requirements of the traffic.

During the year under review a new type of engine was brought into use, viz., the combined motor and car, made by Kitson & Co., of Leeds. This vehicle has been engaged between the Railway Station and Bridge-street; it runs smoothily, but requires frequent repairs.

The Locomotive Engineer (Mr. William Scott), who was despatched to America and the United Kingdom primarily for the purpose of inspecting and reporting upon the railway workshops and appliances in those countries,

was also directed to report upon the Tramway system in operation, and the In his report of the observations he made, which motive power employed. has been prepared for publication, Mr. Scott says that he obtained as much information as possible about the construction and working of Tramways both in Great Britain and on the Continent, and concludes an interesting description of the Tramway systems of the Old World with the statement that he has no hesitation in asserting, judging by what came under his own observation, that both the motors and cars on our Tramway lines are better adapted for their work than any he had seen, and certainly compared most favourably in construction and accommodation with those used on English and Continental lines. Mr. Scott further says, "I am very certain that those who have experienced the conveniences of our Tramway system would never be satisfied with either the speed or accommodation afforded by horse tramways"; and adds, it is the opinion of all those to whom he had spoken who have a knowledge of tramway working that it is a foregone conclusion that horse power will ultimately be entirely superseded by mechanical power.

Mr. Scott's duties as Railway Locomotive Engineer do not bring him into contact, either directly or indirectly, with the administration of the business of the Tramways, and his conclusions therefore must be freed from the imputatations that they are other than disinterested—not arrived at from a spirit of esprit de corps—nor animated, unconsciously or otherwise, by an undue desire to commend and sustain the action of the Tramway authorities of the Colony.

It is gratifying to add that while Mr. Scott considers the Baldwin Motors, which we have adopted, to be the best yet designed, the Constructor of them has admitted that a motor designed by Mr. Downe, our Engineer for Tramway rolling-stock, is a great improvement upon the Baldwin. A specimen motor, which has been made in America to Mr. Downe's design, is now on its way to the Colony to be tested on our lines.

But although it appears from the foregoing that our construction and equipment compare favourably with the construction and equipment of other Tramway lines, I am far from believing that we have arrived at anything approaching perfection in either, and shall consider improvements are still necessary while a single just requirement remains unsatisfied, or one reasonable complaint is unredressed.

CONCLUSION.

In concluding this report upon the Tramways of the Colony for the year 1882, it affords me pleasure to bear my testimony to the zeal and competency displayed by the officers immediately charged with the conduct of them; they have assisted me most assiduously in endeavouring to perfect the administration of this important branch of the Public Service, and much of its success is due to their unremitting care and attention; indeed the whole staff of officers and men deserve, not alone my commendation, but the thanks of the public, with whom they necessarily come much in contact, for their acknowledged civility and for the faithful and intelligent manner in which they discharge their onerous and sometimes difficult duties.

I have the honor to be,

&c.

Sir,

Your most obedient servant,

The Honorable F. A. Wright,
Secretary for Public Works,
&c., &c.,

Commissioner for Railways.

APPENDIX

TO THE

REPORT ON THE RAILWAYS AND TRAMWAYS

0F

NEW SOUTH WALES,

1882.

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Diagrams descriptive of Railway transactions from 1855 to 1882. Map showing Railway Systems and lines.

APPENDIX TO REPORT ON RAILWAYS.-1882.

No. 1.

The Engineer for Existing Railways and Tramways to The Commissioner for Railways.

Sir, Railway Department, Office of Engineer for Existing Lines.

I have the honor to submit my Annual Report, from January 1st to December 31st, 1882, on the condition of the Existing Railways and Tramways under my charge.

SUBURBAN RAILWAYS.

Sydney to Granville Junction—Double Line—Length, 13 miles 16 chains.

GREAT SOUTHERN AND SOUTH-WESTERN RAILWAYS.

Granville Junction to Albury-Single Line-Length, 373 miles 4 chains.

Junee Junction to Darlington-Single Line-Length, 98 miles 66 chains.

Darlington to Currathool—Single Line—Length, 33 miles 66 chains—Opened for public traffic on the 1st March.

• Currathool to Hay—Single Line—Length, 34 miles 57 chains—Opened for public traffic on the 4th July.

The whole of the works on these lines, including the various branches, have been kept in good order during the year.

In addition to the various new works and improvements particularized further on, extensive repairs have been carried out on the several sections. On that section between Sydney and Granville a large portion of the fences have been renewed and paled. The sleepers are also being renewed for a distance of about $3\frac{1}{4}$ miles.

The timber bridges between Picton and Goulburn have been thoroughly overhauled, and are, where found necessary, being renewed. A large number of them have been renewed during the year. The iron bridges on this section have also been repainted.

The following works have been carried out during the year:-

At Sydney-

Verandah erected at office of Inspector of Permanent Way.

Additional water-closet accommodation provided.

Additional office erected for Inspector of Permanent Way.

Water laid on to premises occupied by Mr. Castner.

Chimney of spring-furnace taken down and re-erected.

3-ton crane erected.

Offices for District Engineer erected.

Additions built to Locomotive Engineer's office.

Offices at goods-shed extended.

Gas-main laid on to platform and signals.

New platform erected.

Arrival platform lengthened.

Store-room for Traffic Department erected.

Offices for Traffic Branch completed.

At Darling Harbour-

Water laid on to goods-shed and offices.

Hydrants fixed in yard.

New sewers nearly completed.

New goods-shed nearly completed.

64-G

At Eveleigh-

New carriage-shed erected.

Floor of carriage-shed asphalted.

Commissioner's land fenced in.

House erected over pumping-engine and well.

Water laid on to platform.

New signal erected:

Water laid on to carriage-shed.

New stores nearly completed.

Store offices nearly completed.

Excavations and levelling for workshops, &c., being carried out.

Foundations for running-shed in course of construction (by contract).

At Macdonald Town-

New drinking fountain erected.

Down line distance signal altered.

Waiting-shed enlarged.

Approach road to station fenced.

At Newtown—

New 5-ton crane erected.

New wicket-gate erected.

Fence erected round fire-engine.

New sub-way, Liberty-street, nearly completed. At

At Stanmore-

Flagging at approach to station extended.

New block signals erected.

New double-arm signal erected.

Water laid on to station.

Gas laid on to signal-box and signal.

At Petersham-

Gas laid on to signal-box.

New advance starting signal erected.

New 5-ton crane erected.

Water closet and urinals erected.

Verandahs fixed at sides of signal-box.

Goods-shed erected (by contract).

At Summerhill-

New house erected for station-master (by contract).

Underground tank constructed.

At Ashfield-

Gas laid on to station-master's house.

Ticket office enlarged.

New 5-ton crane erected.

New batten fence and gate crected.

Gas laid on to station.

Signal-box enclosed.

New iron over-bridge erected at Matilda-

Goods-shed erected (by contract).

At Croydon-

New batten fence erected.

At Burwood-

New 5-ton crane erected.

New picket fence and bye-posts crected.

Gas laid on to post-office.

New gas-stove fixed in signal-box.

Gas laid on to station and signals.

New verandahs fixed at sides of signal-box.

New lamps erected on station.

New lamps erected on over-bridge.

400-gallon tank provided and fixed at signalbox.

Goods-shed erected (by contract).

At Redmyre-

New tank and stand fixed.

New semaphore signal erected.

At Homebush —

New semaphore erected at cattle-yards.

Temporary block signal-box erected at cattleyards sidings.

New up and down line distance signals erected at cattle-yards.

New lamp erected on over-bridge.

New down line starting signal erected.

New up and down line starting signal erected at cattle-yards.

New dock wall at cattle-yards nearly completed.

At Rookwood-

New advance starting signal erected.

Four 400-gallon tanks provided and fixed.

New waiting-sheds and ladies' room on up and down platforms, completed.

New water-closets and urinals, nearly completed.

New picket fence erected in front of Stationmaster's house.

New goods-shed erected by contract.

At Granville-

New water-closet fixed for signalman.

New signal erected at Hudson Brothers' siding.

Well sunk at Duck River.

New 5-ton crane erected.

New lamp erected at south side of overbridge.

New lamp erected on overbridge.

Gas laid on to station-buildings.

New goods-shed and loading-stage erected.

Additional tank fixed at Sydney Road gate-house.

New house erected over pumping-engine.

Water laid on to urinals.

Box erected for signalman.

Gas laid on to signals.

New wicket-gate erected.

Five gates erected at Hudson Brothers' siding.

New signal-box erected.

New signal-box erected at Dog Trap Road.

Platform erected near Granville, and another nearly completed.

Fixing interlocking apparatus.

At Fairfield—

New picket fence erected at Station-master's

House for porter erected, and another nearly completed.

At Cabramatta-

New carriage-dock constructed.

New goods-shed erected.

Two tanks and stands fixed at goods-shed.

At Liverpool-

New tank and stand fixed at gate-house, near hospital.

Well sunk for locomotive department.

New ash-pit constructed.

New 5-ton crane erected.

Drain from station to river lengthened.

North end of platform enclosed with picket fence.

At Minto-

New verandah erected at porter's house.

New goods-platform erected.

New goods-shed being erected by contract.

At Campbelltown-

Alterations and additions made to goods-shed.

New 5-ton crane erected.

New wicket-gates erected.

New goods office erected.

At Menangle-

Goods-shed renewed.

Two tanks fixed at goods-shed.

At Douglas Park-

New semaphore erected.

At Picton-

New store-room erected.

New gate erected near stock-yards.

New house erected for engine-men.

New cart weigh-bridge, and office erected.

Partition erected in goods-shed.

Office removed from Bundanoon and re-erected for guards.

Ticket-office, removed from Bundanoon, erected.

At Picton Lakes-

New watch-box for gatekeeper erected.

At Bargo

Cottage for porter in charge crected.

At Coolaman-

Two culverts lengthened.

Porter's cottage, removed from Bowning, in

New platform in hand.

Stop and scotch blocks fixed.

Two distance signals erected.

At Fresh Food and Ice Company's Siding-

Buffer-stops and scotch-blocks erected.

At Mittagong-

Large parcels office erected.

5-ton crane erected.

Picket-fence erected.

Notice-boards and turnstiles fixed.

Water-closets and urinals erected.

New stop-blocks fixed.

Porch erected to gate-house.

Platform extended 50 feet.

New lamp erected.

Signals removed and erected on platform.

Electric repeaters fixed.

At Joadja-

Box-drain extended 11 feet.

New buffer-stops and scotch-blocks fixed.

At Bowral-

Approach to Mr. Ward's ground fenced in. New cess-pit constructed.

At Burradoo-

Stop and scotch-blocks fixed.

Level crossing constructed at 84 miles 78 chains.

At Austermere-

Stop and scotch blocks fixed to Berrima Coalmining Co's Siding.

Two distance-signals erected.

At Moss Vale-

Buffer-stops fixed.

Stockyards pitched and ballasted.

Approach-road ballasted.

New picket-fence erected to platform.

New cart weigh-bridge fixed.

Platform lengthened 60 feet.

New underground tank to goods-shed constructed.

Culverts lengthened.

At Meryla-

Tank to gate-house fixed.

At Bundanoon-

New station erected.

Porch erected to cottage for porter in charge.

Two new lamps and posts erected.

At Baker's Siding-

Two new distance-signals erected.

At Wingello-

Approach-road formed and ballasted.

Loading-dock, 200 feet, constructed.

New platform, 150 feet, erected.

Porter's cottage, removed from Bowning, erected.

Two new 16-feet gates fixed.

Lamp erected.

Two new distance-signals erected.

At Barber's Creek-

Pumping-house enlarged.

At Marulan-

Stop and scotch blocks fixed.

Stockyards divided and new sheep-race pro-

New house for Station-master in hand.

Cart weigh-bridge fixed and office erected.

Gate enlarged at Sutton Forest Saw-mill Co.'s

Signal-levers fixed on platform.

At Carrick-

New 15-feet gate erected.

At Townang-

Station-master's house erected.

Platform extended.

At North Goulburn-

Three name-boards fixed.

New waiting-shed and office erected.

Signal-levers fixed on platform.

At Goulburn-

6-feet paling fence erected around workshops

Additions to weigh-bridge office erected.

New picket-fence erected on both sides of approach to station.

Sand-house removed and re-erected.

Inspector's offices removed and re-erected.

New rooms with verandah for guards erected.

At Goulburn-continued.

Store and offices fitted up, water laid on, and tanks and chimney erected.

Platform lengthened.

Three new name-boards fixed.

New picket-fence erected to platform.

New blacksmith's shop erected.

Coal-bin for Traffic Department fixed.

Level crossing gates, Goldsmith-street, altered to close across line.

Gate-house removed and re-erected.

Buffer-stops fixed.

Offices for District Engineer erected.

Gentlemen's water-closet and urinals erected.

Two culverts lengthened.

Distance-signal removed and re-erected.

At Yarra-

Waiting-shed removed from Bundanoon erected.

At Breadalbane-

Verandah at back of Station-master's house erected.

Verandah erected to station.

Filter-frame made and fixed.

New tank fixed.

Signal erected.

At Fish River-

Well sunk for locomotive water supply.

At Gunning-

Fender to goods-shed fixed.

Electric repeater-boxes fixed.

At Jerrawa-

Lamp-room erected.

Notice-board fixed.

Signal erected.

Patent lever to distance signal fixed.

At Yass—

Fender to 5-ton crane fixed.

Water laid on to copper for heating water for foot-warmers.

At Yass Lime Company's Siding-

New buffer-stops put in.

Stop-block fixed.

New gate erected.

Two distance signals in hand.

At Bowning-

Chimney erected to goods office.

At Binalong-

Old station removed and re-erected temporarily.

New station in hand.

At Rocky Ponds-

Electric repeater-box fixed.

At Cunningar-

Gate-house fenced.

At Harden-

New tank stand erected.

Water laid on to urinals and water-closet.

At Harden—continued.

Pumping engine-house erected.

Pumper's and engine-cleaners' cottages fenced.

Stock reserve fenced.

Pumper's cottage, removed from Rocky Ponds, erected.

Chimney erected at goods office.

Wicket-gate fixed.

Reservoir impounded and silt-pit constructed.

New cess-pit constructed. . .

At Murrumburrah—

Gates fixed to close across line.

Turnstiles erected.

Buffer-stops and stop-blocks fixed.

Bank between main line and siding sheet piled.

15-feet gate fixed on approach to siding.

Station-master's residence removed and reerected.

3-ton crane erected.

Water-closet and urinals removed and re-

Electric box and contacts fixed to up-distance signal.

At Two-mile Creek-

Buffer-stops and stop-blocks fixed.

New entrance gates fixed.

Two new distance-signals erected.

At Wallendbeen-

Two additional rooms erected at station.

Stockyards erected.

Gates at Bland Road altered to close across line.

5-ton crane erected.

At Cootamundra—

Goods-shed lengthened and loading-stage widened and covered.

Wicket-gate fixed.

Chimney erected to goods office.

Front of waiting-shed covered.

Turnstile fixed.

Tank fixed to pumper's house.

5-ton crane erected.

Lamp erected.

At Mullaly's Siding-

Two distance signals in hand.

At Cungegong—

Two distance signals in hand.

At Bethungra-

Two name-boards fixed.

New engine-pit constructed.

Wicket-gate fixed.

Pumping engine-house removed from Bomen erected.

At Illabo-

Position of entrance gates altered.

At Junee Junction-

Temporary station buildings erected.

House for engine men erected.

Four wooden cottages erected.

At Junee Junction—continued.

Two porters' cottages removed from Bomen erected.

Engine-drivers' room removed from Bomen built.

Three tanks fixed.

Office for Traffic Inspector removed from Benerembah erected.

New cess-pit constructed.

Cellar built under refreshment-room.

Temporary water-closets for Locomotive Branch erected.

Lamp fixed at entrance to station.

Electric repeater-box and contact for triangle-signal fixed.

At Harefield-

Two notice-boards fixed. Staff and ticket-boxes fixed.

At Bomen-

New notice-boards fixed.

Gates at level crossing 308 miles 2 chains altered to close across line.

At South Wagga-

Large drain at back of porters' cottages covered in.

Two sets of buffer-stops fixed.

Temporary water-closet for Locomotive Branch erected.

Lockers and shelves in engine-shed fixed.

House for enginemen built.

Porters' cottages fenced in.

New stockyards constructed and pitched.

Approach road to goods-shed metalled.

Urinals drained into timber culvert.

Drainage to engine-pits altered and improved.

Cart weighbridge fixed.

Electric repeater-box and contact fixed.

Level crossing constructed at 324 miles 16 chains.

At Hanging Rock-

Approaches to station blinded.

5-ton crane erected.

At Yerong Creek-

Ladies waiting-room and water-closet erected. Two new turn-stiles fixed.

At Culcairn-

Buffer-stops fixed.

Capping to carriage-dock fixed.

5-ton crane erected.

New stockyards being erected.

At Gerogery-

New 5-ton crane crected.

Fence erected to Station-master's residence.

Two small gates erected at entrance to station.

Semaphore and up-distance signal erected.

At Bowna-

Notice-boards fixed.

Fire-places built in station buildings.

Name-boards and lamps fixed.

At Bowna—continued.

Lamp-room erected.

Goods-yard enlarged and metalled.

Letter-receiver fixed.

At Ettamogah-

Notice-boards fixed.

Two distance-signals erected.

At Albury-

Approaches to passenger-station and goods-shed made up.

Tanks fixed to porters' cottages.

10-ton frame erected.

Coupling-rack and flag-stand fixed.

New buffer-stops fixed.

Water laid on to enginemen's house.

New stop-blocks fixed.

Hay-gauge erected.

Temporary passenger-platform converted into loading-stage.

Small entrance-gate fixed.

New lamps erected on passenger-platform.

Land fenced for plantation.

Picket-gate fixed.

Cart weigh-bridge fixed.

Stone kerbing fixed in front of station.

Turn-table altered.

Tanks fixed to porters' cottages.

Station-signal erected.

Signal-lever removed from temporary platform and fixed on new platform.

Miscellaneous—

New distance-signal at 12 miles 10 chains.

Tool-boxes, trollies, &c., made for extension, Darlington to Currathool.

SOUTH-WESTERN RAILWAY.

At Old Junee-

Station-fittings provided.

Station-signal and two distance-signals erected.

At Marrar-

Platform, 40 feet long, erected.

At Coolaman-

Station-signal and two distance-signals erected.

At Grong Grong-

Fireplace in booking-office built.

Station-signal erected.

At Narrandera -

5-ton crane erected.

Pumper's cottage built.

New engine-pit constructed.

Stop-blocks fixed.

Turnstile fixed.

Chimney and water-closet erected to gatehouse.

Cart weigh-bridge fixed.

Approach to goods-shed widened.

At Narrandera—continued.

New well for locomotive water supply sunk. Semaphore and up distance-signal erected. Up distance repeating-signal erected.

At The Quarry-

New gate fixed at entrance to station.

New gate fixed at entrance to contractors'

Chimney erected to booking-office.

Semaphore erected.

At Yanco Siding-

Stop-blocks fixed.

Two distance-signals erected.

At Hulong-

New cottage erected for porter in charge.

Coupling-rack fixed.

Water supply for carriers provided.

Gates to sheep-yards altered and refixed.

Semaphore erected.

Approaches to sidings formed, &c., by contract.

At Darlington-

Cottage erected for porter in charge.

New stockyards erected.

New name-boards fixed.

New notice-boards fixed.

Stop-blocks fixed.

Lamp-posts erected.

Coupling-rack fixed.

Semaphore erected.

400-gallon tank fixed.

Approaches to sidings formed by contract.

At Benerembah—

New stop-blocks fixed.

Office removed to Junee Junction.

Chimney erected in booking-office.

At Bringagee-

Gate erected.

Semaphore erected.

At Koorongal-

New stop-blocks fixed.

At Currathool-

Water-closets removed from Darlington and re-erected.

Lamps erected at station.

New stop-blocks fixed.

Additions to sheep-yards carried out by contract.

Approaches to sidings formed, &c., by con-

New wicket-gate fixed.

Name-boards fixed.

Semaphore erected.

At Uardry—

New stop-blocks fixed.

At Beabula—

New stop-blocks fixed.

At Waradgery-

New stop-blocks fixed.

At Hay-

Two turnstiles erected.

Semaphore and down distance-signal erected.

5-ton crane erected.

CULVERTS RENEWED DURING THE YEAR:-

	At	No.	No. of	Span of or		Depth o	f clear	Description.
· Miles.	Chains.	No.	openings.	span or of	oenings.	waterv	vay.	Description.
,				fţ.	in.	ft.	in.	
28	60	1	3	2	0	2	6	Timber walls, open top, wing piled.
32	31	1	1	7	0	1.	· 3	Timber walls, open top, brick wings.
32	46	1 1	1	8	6	2	0	Timber trussels, open top, wings piled.
32	57	1	2	3	0	2	2	Timber walls, open top, wings piled.
32	58	1	3	2	0	2	6	Timber walls, open top, wings piled.
26	14	1	1	12	0	4	9	Brick piers, brick wings, open top.
33	16	1	3	2	0	2	6	Timber walls, open top, wings piled.

THE FOLLOWING CULVERTS HAVE BEEN LENGTHENED DURING THE YEAR.

Mile	eage.	Size of Culverts.	*No. of opening.	Lengthened.
72 miles 72 ,, 77 ,, 85 ,, 85 ,, 133 ,, 60 ,, S.W. Railway}	2 chains 13 ,, $24\frac{1}{2}$,, $28\frac{1}{2}$,, $35\frac{1}{2}$,, 51 ,, 40 ,,	3 feet 3 ,, 2 ,, 2 ,, 5 ,, 5 ,,	1 1 1 2 1 1	20 feet 20 ,, 11 ,, 30 ,, 21 ,, 21 ,, 60 ,,

he foll	lowing sid	ings have be	en laid i	in durin	g the	vear :—	_		•	
			•		0	,				Feet.
		ng, up-line si	de, Sydı	ney .	• • •	:	•••	•••	•••	653
1	No. 2 do	do	фo		•••	*	• • •	•••		556
S	Slip point	s.to d o	••• .	•••	•••	•••	•••	•••	•••	18
Γ	Chrough r	oad to Nos. I	1 and 2	sidings	•••			•••		157
ľ	Vew sidin	g to Goods-sl	hed ·	•••		•••		•••		941
Γ	Chrough r	oad to do								344
	_	ng, Eveleigh,	extende	ed						85
	No. 2 do	-								180
	No. 3 - do			•••	•••			•		209
		siding, up-lin		 Nawton			•••	•••		1,230
		siding, dp-m siding, down				•••	•••	•••	•••	504
						•••	•••	•••		
		ng to cattle-y	_	.omebus	sn	• • •	•••	•••	•••	1,716
	No. 2 do		do		•••	•••	•••	•••	•••	1,553
	No. 3 do		do		•••	•••	•••	•••		981
	No. 4 do		do			•••	• • •	•••	•••	374
	No. 5 do		do			•••		•••	•••	.105
1	No. 1, thre	ough road,	do	•	• • • •	•				156
N	No. 2 do		do		•••	•••		•••		156
S	Slip points	S	do		•••		•••	•••		20
		ng, Rookwoo		.:.						783
		ugh road, A		•••	•••	•••	•••			180
		•	do	•••	···.	•••	•••	•••	•••	172
					• • •	•••		•••		
		ng, at 12 mile		ams	•••	•••	• • •	•••	•••	1,240
			do		••• .	•••	•••	•••	•••	728
	siding at		• • •	•••	•••		•••	•••	•••	194
		ng, Granville	•••	21.	•••	•••	•••	•••	•••	1,090
	No. 2 do		•••	•••	•••	•••	•••	•••	•••	1,218
	No.3 do	do	•••	•••.	•••	•••	•••	•••	• • •	923
1	No.4 do	do	•••	•••	•••		•••	·		608
N	No. 5 do	do				1		`		600
Ŋ	yo. 6 do	do		•••	•••			•••	•••	566
N	No. 7 . do	do .								459
N	No. 8 do	do	•••							396
N	No. 9 do	do							• • • •	-378
r	No. 10 do	do								378
ľ	No. 11 do	do								315
	No. 12 do			•••				•••		252
	Chrough r			•••		•••				161
	•	at Minto	•••	•••	•••	•••	•••	•••	•••	46
		No. 1 dock, C	···· !amnhal	ltown		•••	•••	•••	•••	
	_	new dock, c	_	110011	•••	•••	•••	•••	•••	145
	•	•	do	•	•••	• • • •	•••	•••	•••	342
	Block sidir	-	do		•••	•••		•••	•••	322
	Slip points	-	do			•••	•••	•••	•••	46
	_	ig at 72 miles	s 6 chai	•		s)	• • •	•••	•••	1,629
	Block sidi	•		do		•••	•••		•••	348
		76 miles 14 c			ood an	d Ice (Co.)		. 2 2	581
	-	Mittagong, e				•••	•••	•••	•••	347
S	Siding at '	77 miles 21 c	hains (J	Joadga j	Creek)	, exten	ded	•••	,	595
I	Block sidi	ng at Burrad	00	•••	•••	•••	•••	•••	···	245
8	Safety sid	ing do	•••	•••		•••	,		•••	205
H	Block sidi	ng at Moss V	ale		•••			•••		817
I	Loop and	block sidings	at Win	igello	•••		•••	•••		1,953
	_	l through roa		-	•••		•••	•••		735
	_	e siding, Go		•••	•••		•••	•••	•••	662
		r Store Depa		Goulbi				• • •		553
	_	r Traffic Dep								1,749
	-	Junction of				•••			•••	300
	-	191 miles 60		-					•••	288
~	-0 ***	•		, <u></u> .		,	•••	•••	•••	200

Sidings

Sidings laid during the year-continue	d.						
Siding at Murrumburrah	•••	•,• •		•	•	• • •	249
Sidings at Two-mile Creek				•••		•••	483
Cattle siding, South Wagga		• • • •	•••	•••	•		966
Through roads, do		•••	•••		•••		353
Sidings to carriage dock, Culca	irn	•••	•••			•••	279
Sidings to cattle-yards, Albury		•••		•••	•••		1,696
Siding at Narrandera	•••	•••	•••		.•••	•••	330
					•		
•							36,843

Permanent-way relaid with Steel Rails:-

	1877.	1878.	1879.	1880.	1881.	1882.	Total.
	feet.	feet.	feet.	fcet.	feet.	feet.	feet.
Main "up" line, 1st mile	1,387	·	2,465	533	238		4,623
Main "down" line, 1st mile	1,173	2,587		424	153	•••••	4,337
Main "up" line, Darling Harbour Branch				531	•••••	1,509	2,040
Main "down" line, do	•••••		•••••	259		1,487	1,746
Main-"up" line, between 1 and 4 miles			325		•••••	5,359	5,684
Main "down" line, between 1 and 3 miles	*****	20	•••••	3,864		3,272	7,156
Main "up" line, between 10 and 11 miles		•••••	•••••	· · · · • •	5,280		5,280
Main "down" line, at 13 miles	į .	*****	•••••	273	••••	••••	273
Main line, between 14 and 15 miles		******	1,302		1,338	•••••	2,640
Main line, between 26 and 27 miles		******			1,238		1,238
Main line, between 51 and 53 miles				••••		2,793	2,793
Main line, at 68 miles	952	•••••	•••••	•••••	•••••	····••	952
	3,512	2,607	4,092	5,884	8,247	14,420	38,762

Sidings re-laid with Steel Rails.

		1879.	1880.	1881.	1882.	Total.
Sidings of	t Cardonar	feet.	fect.	feet. 3,455	fect.	fcet. 8,760
Do	t Sydney			178		178
Do Do	Granville	743 ·	829	576		1,572 576
Do	Liverpool			1,275	`	1,275
	Total	743	4,639	5,484	1,495	12,361

The following Sleep	ers have	been t	ised for	renew	als du	ring tl	he year	· :
Sydney to Granville Ju	inction	•••			•••	•••	•••	557
Granville Junction to (J oulbur	n	•••	***	•••	•••		
Goulburn to Albury	•••	•••			•••	•••	•••	4,328
•		Total	•••	•••			• • •	7,528

The foll	lowing sleeper	s have	been u	ısed i	n new sid	ings laid in	during the y	ear:		
Sidings at	Sydney				1,488	Sidings at	Joadga		•	196
Do	Eveleigh	•••			140	\mathbf{D}_{0}	Burradoo			142
$\cdot \mathbf{Do}$	Newtown	•••	•••		426	\mathbf{D}_{0}	Moss Vale		•••	268
\mathbf{D}^{o} .	Burwood	•••	•••		36	\mathbf{Do}	$\mathbf{W}_{\mathbf{ingello}}$	•••	• • •	635
\mathbf{D} o	Homebush	•••	•• ,	•••	1,726	·Do -	\mathbf{M} arulan	•••	•••	226
\mathbf{Do}	$\mathbf{Rookwood}$	•••	•••		266	\mathbf{Do}	Goulburn	•••	•••	1,080
\mathbf{Do}	Auburn	•••			108	\mathbf{Do}	Yass Lime	Compan	y	124
Do	12 miles, 10 d	hains			665	Do	Two-mile C	reek	•••	172
\mathbf{Do}	Granville	•••	•••	•••	2,691	\mathbf{Do}	Murrumbur	rah	•••	87
. \mathbf{Do}	Minto	•••	•••		. 13	Do	South Wag	ga	•••	445
\mathbf{D}_{0}	Campbelltown	a	•••		13	\mathbf{Do}	Albury .		•••	567
\mathbf{D} o	Coleman's	•••	•••		654	Do	Narrandera	`		122
Do	Fresh Food &	t Ice C	ompan	y's	190					
Do	Mittagong	•••	•••		109			Tota	l	12,589
									•	
mha fall	lowing quantit	. of ho	11004 1	aa ba	an naad i	luuina 4ha -				
rue ton	owing quantity	y or ba	mast I	ias De	en uscu c	turing she y	ear:—		Cubic yar	de.
Syc	lney to Granv	ille Jui	action	,	•••		·		5,049	
Gr	anville Junctio	on to G	oulbu	rn	•••		•••		7,333	
Go	ulburn to Alb	ury					•••		12,017	
	nee Junction t	-			•••.				3,779	
		•			•		•	•		
					Tota	:			28 178	

RAILWAY FENCE WIRED DURING THE YEAR.

Bounding the property of	Sides.	М	dileage.	No. of Wires,		
bounding the property of —	antes.	From	То	No. of wires.	Leng	TN.
	,	ms. chs.	. ms. chs.		ms.	chs.
Mr. Beans	2	158 20	159 50	1	2	60
Mr. Noble	1	159 60	160 0	. 4	0	20
Mr. Buist	2	169 70	172 60	1	5	60
Mr. Murray ,	2	172 60	173 20	1	1	0
Reserve adjoining Mr. Murray's property	2	173 20	173 65 {	4 on N. 1 on E.	} 1	10
Mr. Pollard	1	173 65	174 75	1	î	10
Do	1	173 65	174 50	1	0	65
Reserve and Bowning Station yard	-2	193 48	193 72	4	0	24
Mr. Wm. Rumble	2	208 40	209 0	2	1	0
Mrs. Catherine Crow	1	209 0	210 30	2	1	30
Late Mr. Brown	1	210 30	211 60	2	1	30
. Mr. Wm. Alchin	1	259 25	260 61	3	1	36
Messrs. Sawyer and Smith	2	265 60	268 40	1 '	5	40
Do do	2	268 40	270 40	3	4	0
Do do	1	261 48	265 60	3	4	12
Messrs. Connon	1	260 61	262 72	3	2	11
Do	1	260 60	261 48	3	0	. 68
Mr. Cowley	2	270 40	271 60	3	2	40
		, Tota	ıl		37	36

GREAT WESTERN RAÍLWAY.

Granville Junction to Parramatta—Double Line—Length, 1 mile 9 chains.

Parramatta to Dubbo-Single Line-Length, 262 miles 47 chains.

Dubbo to Nevertire - Single Line-Length, 63 miles 5 chains-Opened for public traffic on 20th October, 1882.

The whole of the works on these sections have been kept in good repair during the year.

The first section of the Mudgee line, viz., Wallerawang to Capertee, single line, length, 22 miles 74 chains, was opened for public traffic on the 15th May. This length has also been kept in good running

The following works have been carried out during the year:-

At Parramatta—

New stock-yards erected.

Front of old station drained.

Water laid on from goods-shed tank to water-

New lamp erected between Smith-st. and platform.

New gas-lamp erected at Railway-bridge, in station-st., Ḥarris Park.

New station completed, except painting.

At Seven Hills-

New lamp erected.

New water-closet and urinal erected.

New drinking fountain erected. Coal-stage lengthened.

At Mount Druitt-

New distance-signal creeted up and down lines.

At Cross Road Siding-

Additional room crected at porter's house. New gate erected at porter's house.

At Penrith-

Tank stands erected for Locomotive Depart-

New 5-ton crane erected.

New lamps fixed at engine-shed.

Lockers fixed in engine-shed.

New well sunk for Locomotive Department.

New house erected over pumping-engine.

Office erected at truck weigh-bridge.

Water laid on to Station-masters' house.

Bridge widened.

Twelve funnels erected at engine-shed.

Water-meter fixed.

Six new engine-pits constructed.

400-gallon tank erected at goods-shed.

New dock walls nearly completed.

New goods-shed erected.

At Emu Plains-

New box erected for porter at Gravel Pits.

At Glenbrook-

New kitchen erected at Station-master's house. Semaphore signal altered.

At The Valley-

Two new wicket-gates erected.

At Springwood-

Wicket-gate erected alongside crossing. Buffer-stops erected.

At Faulconbridge-

Additional room erected to waiting-shed. Wicket-gate erected.

At Linden—

Approach stage to platform erected. Office erected.

House for porter in charge erected.

Small house for night porter erected.

Staff-boxes provided.

At Lawson-

Staff-boxes provided.

At Wentworth Falls-

Two signals erected.

Staff-boxes supplied.

Dam for Locomotive Department constructed.

At Katoomba-

Approach to platform formed.

New wicket-gate and gate erected.

At Blackheath-

Staff-boxes provided.

At Mount Victoria—

Fence and gate from over-bridge to stockyards erected.

New weighbridge fixed.

Staff-boxes provided.

Turn-table lengthened.

At Hartley Vale—

New gate erected.

At Mount Wilson-

Staff-boxes provided.

At Clarence Siding-

Semaphore signal erected.

At Zig Zag, Bottom Points-

Platform lengthened.

Porter's office erected.

New lamp erected.

At Eskbank-

Gate erected in fence.

New goods-shed erected.

Loading-stage erected.

Paling-fence erected from overbridge to Lithgow.

At Eskbank-continued.

Turn-stile fixed in fence.

Closet to guard's house erected.

At Lithgow-

Fence erected across culvert.

At Bowenfells-

Wicket-gates erected.

. Staff-boxes provided.

At Wallerawang-

Alterations and additions to station completed.

Wash-house to Station-master's residence erected.

Horse and carriage dock constructed.

Box culvert and drain constructed.

Signal erected.

At Rydal—

Well for Locomotive Department deepened.

At Tarana-

New cattle-yards erected.

Loading-stage constructed.

Well sunk.

Staff-boxes supplied.

At Locksley-

Porter's in charge house fenced in.

At Brewongle-

Up-distant signal erected.

At Raglan-

Distant signals erected.

At Kelso-

Staff-boxes supplied.

At Bathurst-

Verandah extended.

New lamp and storeroom erected.

New locomotive office erected.

Counter fixed in telegraph office.

Carriage-shed erected by contract.

New office for District Engineer erected. Verandah to driver's house in progress.

Gas laid on to Station-master's house.

Additional locomotive workshops in progress.

Oil and waste store erected.

Two lamp-posts and lamp erected.

New blacksmith's shop erected.

Additional water-way provided for draining

Verandah to guards' barracks erected.

Inspectors' offices erected.

New home signals erected.

Pumping-engine house raised.

New permanent-way workshops erected.

Remodelling signals in progress.

Down platform erected.

Sub-way in progress.

Improving drainage in progress.

Improving roads and yard in progress.

Laying water-pipes, hydrants, &c., in progress.

New cesspits in progress.

New turn-table erected.

At Perth-

New lamp-room erected.

New crane erected.

At George's Plains-

Loading stage lengthened.

Wicket-gate erected.

Cart weighbridge fixed.

At Wimbledon-

Home—up and down distant signals in progress.

At Blayney—

Fence from level crossing to carriage dock erected.

Picket-fence along platform erected.

Hay gauge at Lime siding erected.

At Spring Grove-

Two distant-signals erected.

New gate for level crossing erected.

At Spring Hill-

New distant-signals erected.

Tank with appliances for fire fixed.

Loading stage crected.

Cart weighbridge fixed.

Gate widened.

Counter and cupboards fixed in lamp-room.

Buffer-stops erected.

At Orange-

Balcony to Station-master's house erected.

Picket-fence erected.

Shower-bath fixed under tank.

Cattle-yards altered.

Water laid on to carriage examiner's house.

Carriage examiner's house fenced in.

Lockers fixed in guard house.

At Mullion Creek-

Small lamp-room erected.

At Kerr's Creek-

Office for staff erected.

One home and two distant signals erected.

Platform erected.

Stage erected, fence and earthworks removed.

Wicket-gate fixed in fence.

At Warne-

Lamp and store-room erected.

Two distant-signals erected.

Loading-stage erected.

At Store Creek-

Sand-house erected.

Gate fixed in fence.

Fence erected round dam.

At Ironbarks—

Small lamp-room erected.

New down-line distant signal erected.

Carriage dock erected.

At Springs—

Two distant signals erected.

At Apsley-

New platform (100 ft.) erected. Wicket-gate fixed.

At Wellington-

Picket fence erected.

Water-crane erected.

Shower-bath fixed under tank.

Wicket-gate fixed.

Wicket-gate fixed opposite station.

At Mary Vale—

Goods-shed erected.

Loading stage erected.

Two lamps erected.

Water-closets and urinals erected.

Small lamp-room erected.

At Murrumbidgerie-

Lamp-room erected.

Staff-boxes provided.

At Dubbo-

Kitchen to guard's house erected. Station-master's kitchen altered.

At Dubbo-continued.

Kitchen to driver's house erected.

Wicket-gate, Gipps-street, fixed.

Picket fence erected.

Coal stage lengthened.

Gate fixed in fence west of Macquarie River.

Staff-boxes provided.

At Ballast Siding-

Staff-boxes provided.

Temporary platform erected.

At Narromine-

Staff-boxes provided:

At Trangie -

Staff-boxes provided.

At Nevertire-

Temporary water-closets erected.

Temporary stage and sheep hurdles erected.

Platform lengthened.

Staff-boxes provided.

Locomotive office removed from Bathurst and re-erected.

CULVERTS PUT IN DURING THE YEAR:-

At	No.	No. of Openings.	Span of . Openings.
.92 miles 49 chains. 104 ,, 30 ,, 145 ,, 0 ,,	1 1 1	ft. 1 2 3	ft. in. 7 0 3 0 1 6

The following sidings	have been laid	in during the year -—	•
-----------------------	----------------	-----------------------	---

Line siding at	Granville	extend	ed.				•••		315
Slip points, Bla		•••			•••		··· .		23
Slip points, Ro						•••			23
Weigh-bridge	-			Penrith	•••	•••			$1,\!452$
No. 2 siding, "	-			do		•••	• • •		72
No. 3 do	do			do			•••		144
No. 4 do	do	.:.	•••	. do	•••	•••	•••	• • •	249 -
No. 5 do	do	•••		do		•••	•••	•••	482
No. 6 do	do			$\mathbf{d}\mathbf{o}$			•••		726
No. 1 engine-s	hed siding			do	•••	•••		,	403
No. 2	do	•••		do	•••	•••		•••	360
No. 3	do	•••		do	•••		•••	•••	414
Through road	to Nos. 1 a	nd 2 s	idings	do	'	•••	•••		184
No. 4, engine-s	shed siding	; .		do	•••	•••	•••	•••	625
No. 5	do	•••		$_{ m do}$	•••	•••,	• • •	•••	426
No. 6	do		•••	do	•••	•••	•••	•••	404
No. 7	do		•••	дo	•••	• • •	•••		298
Slip points	•••	•••	•••	do	• • •	•••	•••	•••	30
No. 2 siding, "	down" line	Э		do	•••	•••	•••	•••	307
No. 3	do	•••	•••	do	•••	•••			371
No. 4	do	• • •	•••	do ·	•••	•••	• • •	•••	161
No. 5	do	`	•••	do	•••	• • •	•••	•••	61
No. 6	do	•••	•••	do	•••		•••	•••	342
	do	•••	•••	do	•••	•••	•••	•••	661
Block siding, I	awson .	•••	• • •	•••	•••	•••	• •,•	•••	99

Sidings

Sidings laid during th	e vearco	ntinue	ď.						1.
	-								Feet.
Block siding,			• • • •	•••	• • •	•••	•••	•••	538
Loop siding, B		•••	•••	•••	•••	•••	• • •	• • •	2,336
$\mathrm{D}o$	do	•••	••	•••		•••	•••	• • •	2,127
· Through road	do			•••		,			176
Block siding, (larence si	ding	•••				• • •		838
Do 1	Wallerawa	ng	•••			•••		• • •	678
Through road	do					•••	•••	• • •	165
Block siding,	l'arana		•••	•••			•••	•••	38
\mathbf{D}_{0}	do	•••		•••					368
\mathbf{D}_{0} . If	Bathurst					•••		•••	1,650
Loop siding	do				•••	•••		•••	792
Block siding	do	•••	•••	•••		•••	•••	•••	660
Through road	do			•••	•••	•••	•••	•••	165
Block siding	do	•••	•••			,	•••		1,320
Do	do	•••		•••	•••		•••		858
· Do S	Springhill			•••			•••	•••	.371
Loop siding	do	•••		•••			•••	•••	126
Block siding, I	Kerr's Cre	ek	•••	•••	····		•••	•••	322
Loop siding, I	Iary Vale	•••		•••			••	•	732
Do D	ubbo				•••				705
\mathbf{Do}	do	•••		•••					633
Block siding	do			•••	•••				35 5
Do	do		···	•••	•••				834
Through road	do ·		,	•••	•••	•••			208
Č									
	ı	otal	•••	•••		•••	•••		25,627

PERMANENT WAY relaid with Steel Rails:-

		1875.	1876.	1877.	1878.	1879.	1880,	1881.	1882.	Total.
_		feet.	fcet.	feet.	fect.	fcet.	feet.	feet.	feet.	feet.
Betwee	en 13 and 14 miles, Up line						175			175
\mathbf{Do}	13 and 14 miles, Down line				1,451	2,106	417			3,974
Do	14 and 15 miles			1,082		106				1,188
\mathbf{Do}	26 and 27 miles						·	572	******	572
Do	33 and 34 miles	******		,				3,768		3,768
Do	35 and 36 miles	•••					168	4,695	:	4,863
Do	36 and 37 miles				147			• • • • • •	2,300	2,447
$\mathbf{p}_{\mathbf{o}}$	37 and 38 miles								5,280	5,280
\mathbf{D}_{o}	38 and 39 miles			2,204	2,601		•••		6	4,811
Do	39 and 40 miles						3,038			3,038
\mathbf{D}_{0}	41 and 43 miles								4,606	4,606
Do	46 and 47 miles		• • • • • • •					3,387		3,387
Do	47 and 48 miles	·	•••						660,	660
\mathbf{Do}	48 and 50 miles								·4,356	4,356
Do	49 and 50 miles							5,280		5,280
Do	50 and 53 miles	5,325	3,644	10,560			924			20,453
\mathbf{Do}	55 and 56 miles								2,640	2,640
\mathbf{Do}	56 and 57 miles		••••	,			2,640			2,640
'Do	57 and 58 miles		.,					5,280	3,960	9,240
Do	58 and 62 miles		••••	,,,	13,200					13,200
\mathbf{Do}	63 and 67 miles					7,920	4,290		3,960	16,170
\mathbf{Do}	66 and 68 miles		••••					6,600		6,600
\mathbf{Do}	68 and 69 miles		•••••						3,300	3,300
\mathbf{D}_{0}	89 and 90 miles		*****						3,036	3,036
Dо	90 and 91 miles								3,366	3,366
\mathbf{Do}	91 and 92 miles	,					4,884		396	5,280
\mathbf{Do}	153 and 154 miles						5,214			5,214
Dо	154 and 157 miles					9,702				9,702
Do	160 and 162 miles						2,640		5,280	7,920
Do	166 and 169 miles			,,,				22,440	••••	22,440
Do	174 and 176 miles			.					4,884	4,884
Do	186 and 188 miles		•••••						5,280	5,280
-	Total	5,325	3,644	13,846	17,399	19,834	24,390	52,022	53,310	189,770

SIDINGS RE-LAID WITH STEEL RAILS.

	•		•	188	0.	1881.		1882	Tot	al.
Sidings at Penr Siding at Hartl Sidings at Esk	ey Vale		•••		et. 77 97	feet. 166	ł	feet. 628	fee 79 27 69)4. '7
	Total	•••	•••	97	74	166		628	1,70	8
The following sle	epers have been	n used	for	renewa	ls durii	ng the v	'		<u>'</u>	
Granville	Junction to Ba	thurst	;						2,196	
Bathurst t	o Nevertire			•••	•••	•••	•••		3,646	
		То	tal		•••	•••	•••		5,842	
The following slee	epers have beer	used	in ne	ew sidir	ngs laid	l in dur	ing the	e year :-	-	
	Granville				•••	٠	-	-	109	
Do	Blacktown			•••		•••	•••		13	,
Do	Rooty Hill	•			•••		•••	•••	13	,
\mathbf{Do}	Penrith	•••			. 	•••			2,746	
\mathbf{D}_{o}	Wentworth F	alls		٠	•••	•••		•••	170	
Do	Blackheath	•••						•••	742	-
Do	Hartley Vale			١				•••	130	
Do	Mount Wilso	n				•••	•••		240	_
\mathbf{p}_{0}	Clarence Sidir	ng	•					٠	281	
$\widetilde{\mathrm{Do}}$	Esk Bank	•••						•••	26	•
\mathbf{D}_{0}	Wallerawang	•••				•••	•••	•••	720	
\mathbf{D}_{o}	Tarana	•••		•••		•••			586	_
\mathbf{D} o	Bathurst	•••						•••	2,157	
\mathbf{D}_{o}	Kerr's Creek	•••							98	
Do	Mary Vale								60	
. Do	Dubbo		•••			•••	•••	••••	336	
		\mathbf{To}	tal	•••		•••	•••	·	8,427	
The following qua	antity of ballas	t has b	een	used d	uring t	he year	:		•	
	Junction to Sp			•••		-			2.504 c	ubic yds.
	o Wellington	_		•••				•••	2,596	•
	n to Nevertire			•••	•••		•••	•••	936	"
		То	tal	∴ .		•••	•••		6,036	,,

RAILWAY	FENCE	WIRED	DURING	THE	YEAR.
			•		

Pounding the meanagh of		Mile	eage.			_	
Bounding the property of	From		То		No. of Wires.	Length.	
Mr. Andrew Brown	ms. 95	chs.	1	chs.	2		chs.
Ď ₀			97	•	2	2 0	
Mr. Abbott	102	10	103	74	2	1	59
Mr. M'Pherson	108	20	108	40	2	0	20
Mr. M'Laughlin	112	73	114	24	2	1	31
Do	112	35	114	50	2	2	28
Messrs. Campbell and M'Kenzie	131	40	132	86	2	1	40
Mr. Richards	178	50	181	14	2	2	44
Total	· · · · · · · · · ·			·····		12	76

RICHMOND LINE.

Single Line-Length, 16 miles 11 chains.

The several works on this branch have been kept in good order.

The work of improving the gradients has been continued and completed during the year, 75 chains. having been lowered, and 1 mile and 24 chains lifted. The bridges at 33 miles 79 chains and 34 miles 1 chain have also been renewed and strengthened. Ten culverts have been renewed.

The following works have been carried out during the year:-

At Riverstone-

At Richmond-

Stage for unloading sheep and cattle erected.

At Mulgrave-

Water laid on from locomotive tanks to

station premises.

. At Clarendon-

New semaphore erected. New platform erected.

Temporary offices erected.

Temporary platform erected.

Footpaths kerbed and guttered.

New goods-shed nearly completed.

New station erected (by contract).

268 feet.

The underme	entione	ł sidings have	e been	laid in	during	the yea	r:	
No. 1	siding,	Richmond	•••			•••		
No. 2	do	do		٠	•••			
m				•				

585 Through road to main line, Richmond 157 Through road to goods-shed, Goods-shed siding

> Total... ,757 feet.

PERMANENT WAY RELAID WITH STEEL RAILS.

	1878.	1879.	1880.	1881.	1882.	Total.
	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.
Between 21 and 26 miles	2,642	3,192		10,563	2,215	18,612
Between 32 and 35 miles				795	525	1,320
Between 37 and 38 miles	·········				1,659	1,659
Total	2,642	3,192		11,358	4,399	21,591

The following sidings have been relaid with steel rails:-

	Oouglas Siding idings at Richmon	 d					·		1882. 200 1,174
~	, , , , , , , , , , , , , , , , , , , ,		•••	•••	•••		•••	•••	
		Tota	al				*** 1	•••	1,374
The follo	owing sleepers hav	e been	used :	for ren	ewals d	luring 1	the yea	r:—	
	Blacktown to Rich			•••					1,243

The following sleepers have been used in new Sidings laid in during the year: Sidings at Richmond...

The following quantity of ballast has been used during the year:

Re-laying and ballasting 2.601 cubic yds. Improvements to gradients ... 5,519 New Sidings, Richmond 1,389

> Total 9,508 cubic yds.

Account of Permanent-way Rails turned, renewed, and broken, from the opening of the various Extensions, Great Southern, South-Western, Western, and Richmond Lines, to 31st December, 1882.

Entered	_	•	. Date			opened fic up to	Rails.				
Extensions.	Leng	gth.	when of for tra	ened ffic.	31st December, 1882.		Number turned.	Number renewed.	Number broken.		
	ms.	oho									
Sydney Yard to 1st mile-post	шъ.	ÇIII.			yrs.	ms.	,	7.006	_		
1st mile-post to Granville	13	16	26 Sept.	, 1855	27	3 }	1,731	1,936	9		
Granville to Liverpool	8	68	20 ,,	1856	26	(2,962	1,368	13		
Liverpool to Campbelltown	11	65	17 May,		24	3	1,090	255	3 8		
Campbelltown to Menangle	6	50	I Sept.		20	7₺ 4	542 161	56	12		
Menangle to Picton	12	28	ı July,		19	6	627	266	12		
Picton to Mittagong		75	ı Mar.,		15	10	2,485	630	7		
Mittagong to Sutton Forest	23 8	62	2 Dec.,		15	I	200	29	7		
Sutton Forest to Marulan	28	57	6 Aug.,		14	4	402	59	25		
Marulan to Goulburn	19	73	27 May,	1860	13	7	43 ¹	151	23		
Goulburn to Gunning	30	20	9 Nov.,			2	1,075	1,384	-3 95		
Gunning to Bowning	29	26	3 July,		7 6	6	795	1,198	35		
Bowning to Binalong	14	42	ı Nov.,	1876	6	2	176	193	2		
Binalong to Murrumburrah	19	48	12 Mar.,	1877	. 5	ο Σ .	111	215			
Murrumburrah to Cootamundra	25	13	ı Nov.,		5	2	152	141			
Cootamundra to Bethungra	15	10	15 Apl.,	1878	4	83	116	130	2		
Bethungra to Junec	18	28	б July,	1878	4	6	33	56	••••		
Junee to Bowman	17	38	3 Sept.,	1878	4	4	27	48			
Bowman to South Wagga	5 58	I	Ι ,,	1879	3	4	30	26	• • • • • •		
South Wagga to Gerogery		63	Ι,,	1880	2	4					
Gerogery to Albury	18	37	3 Feb.,	1881	I	11	• • • • •		• • • • • •		
Sydney to Albury	386	20					13,146	8,251	242		
Junce to Narrandera	61	0	28 Feb.,	T88 r		10					
Narrandera to Darlington	37	66	I Sept.,		1		•••	4	4		
Darlington to Currathool	33	66	1 Mar.,		0	3	• • • • • •	I	3		
Currathool to Hay	34.		4 July,		0	6 .					
Junce to Hay	167				•••••			5	7		
Granville to Blacktown	8	24	4 July,	1860		6					
Blacktown to Rooty Hill	3	66	12 Dec.,		22 21	0 ¹ / ₂	875	347	15		
Rooty Hill to South Creek	3	75	I May,		20	8	189	55	13		
South Creck to Penrith	4	66	7 July,		20	6	149	44 266	I		
Penrith to Wentworth Falls	27	70	11 ,,	1867	15	5½	552 8,587	2,994			
Wentworth Falls to Mount Victoria	14	70 l	ı May,		14	8	3,815	1,397	3		
Mount Victoria to Bowenfells	19	49	18 Oct.,		13	21/2	3,633	1,118	5 13		
Bowenfells to Wallerawang	7	46	r Mar.,		12	10	795	159			
Wallerawang to Rydal	6	iı	ı July,		12	6 .	3 ² 7	26	3		
Rydal to Locksley	19	11	20 Apl.,		10	8	1,136	86	4		
Locksley to Brewongle	5	31	ı July,		10	6	460	10			
Brewongle to Ragian	′ 5	3	4 Mar.,	1873	9	10	151	8			
Raglan to Kelso	3	ō	ı Мау,	1875		8	177	7			
Kelso to Bathurst	1	35	4 Apl.,	1876	7 6	9	179	119	4		
Bathurst to Blayney	27	69	ı Nov.,	1876	6	2	817	2,575	i		
Blayney to Orange	19	75	19 Apl.,	1877	5	83	180	1,258	1		
Orange to Wellington	55	55	ı June,	1880	2	7		2	2		
Wellington to Dubbo	28	11	ı Feb.,	1881	I	11	••••	3	3		
Dubbo to Nevertire	63	_5				,	• • • • • • •	••••			
Granville to Nevertire	325	52					22,122	10,474	69		
Wallerawang to Capertce	22	74	15 May,	1882	0	7½					
Blacktown to Richmond	16	11	ı Dec.,	1864	18	ı	471	360			

Note.—This statement does not include the relaying of the line from Sydney to Granville, laid originally with Barlow rails, and renewed with double-headed rails, nor those portions of the Southern and Western Lines which have been relaid with steel rails.

The following shows the number of men per mile of single line engaged in the maintenance of the permanent way:—

GREAT SOUTHERN, WESTERN, AND RICHMOND RAILWAYS.

	, .		·,					, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Sydney to Granville June	etion i	includi	a Hac	lom'a	Cnools	Comoto	D	Mo	n per mile.
Darling Harbour Bra	nch ar	d Sidir	og He	ad of T	Oreek Jarling	Harbor	ry Dra		1.30
Caran-illa da Carallaria	,		.60, -10	tite OI I	umug	TIME DO	u.	• • •	
Granville to Goulburn	• • •	• • •		•••					0.90
Goulburn to South Wagga	ı Wagg	ga	• • •						1.12
South Wagga Wagga to A	lbury								1.00
Junee to Darlington									1.16
Darlington to Hay									1.15
Granville Junction to Bat								•••	0.78
		•••	•••	•••	•••	• • • •	• • • •	•••	
Bathurst to Orange	• • •	•••		•••	• • •		•••		1.00
Orange to Dubbo									1.05
Dubbo to Nevertire	• •					1		•••	1.06
Wallerawang to Capertee							•••	•••	
	•••		• • •	• • •	• • •	• • •	• • •	• • •	1.13^{-}
Blacktown to Richmond	• • •	•••		•••	• • •.				0.93

List

LIST OF MACHINERY IN WORKSHOPS ON 31ST DECEMBER, 1882:-

Carpenters' shop-

- 1 20-horse power semi-portable engine.
- 1 dimension planer.
- 1 wood-turning lathe.
- 2 circular-saw benches.
- 2 tennoning machines.
- 1 horizontal boring machine.
- 1 cross-cutting machine.
- 1 band saw.
- 1 fret saw.
- 1 variety wood working machine.
- 2 mortising machines.
- 1 surface-planing machine.
- 1 squaring and planing machine.

Fitting shop-

- 1 12-inch lathe.
- 2 $10\frac{1}{2}$ -inch lathes.
- 1 10-inch lathe.
- 1 6-inch lathe.
- 5 drilling machines.
- 1 slotting machine.

- 1 shaping machine.
- 5 planing machines.
- 2 screwing machines.
- 1 wood-turning lathe
- 1 10-horse-power semi-portable engine.

Smiths' shop-

- 1 10-horse-power portable engine.
- 1 fan to blow 16 fires.
- · 2 punching and shearing machines.
- 2 steam hammers.
- 1 fan to blow 20 fires.

Plumbers' shop-

- 1 pair rollers.
- 2 burring machines.
- 1 folding machine.
- 1 swedging machine.
- 1 lead-washer punching machine.
- 1 punching and cutting machine.
- 1 pipe-screwing machine.
- 1 guillotine machine.

GREAT NORTHERN RAILWAY.

Newcastle to West Maitland—Double Line—Length, 20 miles.

The permanent way has been kept in good condition.

With two exceptions the bridges are in very good order. One over Throsby's Creek, near the Waratah Junction, consisting of two 20 feet spans on stone abutments and pier, and another near the Waratah Crossing, of one 15 feet span, also on stone abutments, are becoming very shaky—the stonework showing unmistakeable signs of giving way, owing to bad material and workmanship. The abutments will probably require to be taken down and rebuilt; but, in order to keep them safe beyond doubt, temporary trestles are being erected.

The buildings and other works on this section are in very good order.

West Maitland to Tamworth—Single Line—Length, 161 miles 28 chains.

The permanent way, bridges, and other works on this section are in good condition.

Many of the cuttings on both sides of the Liverpool Range have been very troublesome during wet weather, in consequence of their tendency to slip; but the line has always been kept clear without interruption to the traffic.

Tamworth to Moonbi-Single Line-Length, 12 miles. Opened for public traffic 9th January, 1882.

Moonbi to Uralla—Single Line—Length, 51 miles, 57 chains. Opened for public traffic 2nd August, 1882.

The permanent way and works on these sections are in good condition.

These portions of the line have given very little trouble, except near Kentucky, where some difficulty has been experienced in keeping the side drains clear, owing to the soft greasy nature of the slopes.

Bullock Island Branch—Double Line—Length, 1 mile 43 chains.

Morpeth Branch—Single Line—Length, 4 miles.

All the works on these branches are in very good order.

North-western Branch.—Werris Creek to Gunnedah—Single Line—Length, 40 miles 40 chains. The works on this section are in first class condition.

Gunnedah to Boggabri-Single Line-Length, 24 miles 5 chains. Opened for public traffic 11th July, 1882.

Boggabri to Narrabri—Single Line—Length, 32 miles. Opened for public traffic 4th October, 1882.

These sections have been found difficult to maintain. The line was far from good when opened for traffic, and subsequent heavy rains caused a good deal of trouble. It is now however in fair running order, and is gradually being improved.

The bridges and other works are in first class condition.

64-I

The following works have been carried out during the year:-

At Newcastle-

Sand furnace erected.

Commissioner's land fenced. .

Fountain fixed at Station.

At Honeysuckle Point-

Brick office for Store Branch erected.

Down platform extended.

Two additional gas-lamps erected.

Galvanized corrugated iron store erected.

Crane erected in store.

At Wickham-

Gas-lamp erected at Railway street crossing. Gas-lamp erected at Hannell-street crossing.

At Bullock Island-

A loading platform erected.

Railway fence extended to wharf.

At Waratah-

Brick ticket-office erected on up platform.

At Hexham Township-

A porter's residence erected.

Booking office erected.

Closet and urinal erected.

Loading wharf constructed.

At Woodford-

Booking office erected.

At Victoria-street-

Closet and urinal erected.

Waiting-shed erected on up platform.

At East Maitland-

Retaining wall and fence erected at Melbourne-street.

Fountain fixed at station.

At Morpeth-

Sheep-yard constructed.

At High-street-

Two fountains fixed at station.

At West Maitland-

Loading wharf constructed.

Brick residence for Station-master erected.

Traverser erected.

Dray weigh-bridge fixed.

Fountain fixed at station.

Gas-lamp erected at Elgin-street approach to station.

At Ravensworth-

Ladies' waiting-room erected.

At Musclebrook-

Underground tank constructed:

Culvert extended.

Fence erected.

At Aberdeen-

Galvanized corrugated iron goods-shed erected. Level crossing constructed.

At Wingen -

Goods-shed erected.

At Doughboy Hollow-

Closet and urinal erected.

At Willow-tree -

Verandah erected to station.

At Tamworth-

Gas laid on to station grounds and buildings. Lamps and spikes fixed and gas laid on to footbridge.

At Walcha Road-

Level crossing constructed.

At Kentucky-

Loading stage erected.

Gate fixed.

At Boggabri-

Wool-stage erected.

At Narrabri—

Wool-stage erected.

FLOOD OPENINGS PUT IN DURING THE YEAR.

. At .	At . No.			
106 miles 0 chains. 128 ,, 25 ,, 174 ,, 0 ,, 174 ,, 25 ,, 175 ,, 25 ,, 175 ,, 40 ,, 175 ,, 40 ,, 175 ,, 54 ,,	1 1 1 1 1 1 1 1	1 1 1 1 1 2 3 1 4	8 feet 2 " 9 " 9 " 9 " 3 " 3 "	

•	•							
The following si	dings have been laid in	during	g the y	ear:—				
Siding to	Mortuary Station, Ho	neysuc	kle Po	int				Fee 42
_	al sidings, Bullock Isla	_						2,83
	Nos. 10 and 11 crane	•		and Dy	ke			1,78
Extension	n of sidings to No. 1 ci	rane, B	ullock	Island	Dyke			16
Extension	n of sidings, Murrurur	adi	•••		•••			10
Additions	al siding, Murrurundi		•••	•	` `			€
Extension	of siding, Doughboy	Hollow	• • • • • • • • • • • • • • • • • • • •	•••	•••	•••		21
		Ţ	tal		•::	•••		5,58
The following slo	eepers have been used :	for ren	ewals	during	the yea	r :—	_	
Newcastle	e to Murrurundi			••••	•••			94
Murrurui	ndi to Tamworth	•••	•••	•••		•••		10
		r	'otal	•••	•••	•		1,0
Fhe following a	uantity of ballast has b	neen mg	ed dur	ing the	vear :-	_		
		con us	·	ing viic	your.		C	lubic ye
	e to Murrurundi ndi to Tamworth	•••	•••	•••	•••	•••	· •••	2,09
	n to Uralla	•••	•••	•••	•••	•••	•••	4,22 48
	reek to Narrabri	•••	•••	•••	•••	***	***	4.6
(1,01110,0	TOOK OO TAMIMOIT	•••	•••	•••	•••	•••	••••	
		Ţ	oțal	•••	•••	•••	•••	7,2
Sleepers used fo	r renewals of sidings d	luring	the yea	ar :—				
Sidings a	t Newcastle	•••	•••		•••	•••	•••	4
The following sl	eepers have been used	in new	siding	rs laid i	n durii	o the	vear :-	
	t Honeysuckle Point	•••	•••	•••		-B	•••	14
До	Bullock Island June	tion				•••	•••	94
Do	Bullock Island Dyke			•				68
\mathbf{D}_{0}	Murrurundi	•••		•••				
Do	Doughboy Hollow			• • • • • • • • • • • • • • • • • • • •	•••			ı
	•	Т	'otal	•••	•••	•••		1,84
		•	1-1					

ACCOUNT OF PERMANENT-WAY RAILS TURNED, RENEWED, AND BROKEN DURING THE YEAR.

Extensions.			Date	Time opened for Traffic up to 31st Dec., 1881.		Rails.			
		gth.	when opened for Traffic.			Number turnéd!	Number renewed	Number broken.	
Newcastle to Murrurundi, including Morpeth and Bullock		chs.		yrs.	ms.				
Island branches	124	69				257	387		
Murrurundi to Quirindi	24	78	13 Aug., 1877	• 5	$4\frac{1}{2}$		504		
Quirindi to Tamworth	37	23	15 Oct., 1878	4	$2\frac{1}{2}$		43		
Tamworth to Moonbi	12	0	9 Jan., 1882	1	0				
Moonbi to Uralla	51	57	2 Aug., 1882	. 0	5				
Newcastle to Uralla, including Morpeth and Bullock Island	,				,				
branches	250	67				257	934		
Werris Creek to Gunnedah	· 40	40	11 Sept., 1879	3	$3\frac{1}{2}$		8		
Gunnedah to Boggabri	24	5	11 July, 1882	0	· 5½				
Boggabri to Narrabri		0	4 Oct., 1882	Į į	3				
Werris Creek to Narrabri	96	45					8		

The following shows the number of men per mile of single line engaged in the maintenance of the permanent-way:—

						•		'nΤ	en, per muc	•
Newcastle to Murrurundi, i	ncludin	g Morp	eth an	d Bullo	ck Isla	nd bra	aches		0.96	
Murrurundi to Tamworth	•••	•••	•••	•••		* * * *	•••		1.07	
Tamworth to Uralla	`			•••,						
Werris Creek to Narrabri	•••	•••		•••	:			•••	1.00	

TRAMWAYS FOR 1882.

EXISTING LINES. .

Lines.	Opened for Public Traffic.	Length of Single Line.	Length of Double Line.	Total	Length.
		ms. chs.	ms. chs.	ms.	chs.
Redfern to Hunter-street	15th September, 1879	*	1 39.29	1	39.29
Hunter-street to Bridge-street	15th August, 1882	•••••	0 19.99	0	19.99
Liverpool-street to Randwick Race-course	14th September, 1880	•••••	2 41	2	41
Race-course to Randwick	19th March, 1881		1 2.09	, 1	2.09
Darlinghurst to Ocean-street	12th March, 1881	0 6⋅80	1 40.36	1	47.16
Ocean-street to Waverley	13th April, 1881	1 25.84		1	25.84
Woollahra line	17th May, 1881	0 65-22		0	65.22
Crown-street line	15th September, 1881	0 .68.91		0	68.91
Redfern to junction of George-street west and Glebe	15th August, 1882		0 43.94	0	43.94
road. George street west to Glebe Point	15th August, 1882	0 72.75	0 4.85	0	77.60
Junction of George-street west and Glebe road to	15th August, 1882	0 57.06	0 6.53	0	63.59
Forest Lodge. George-street west to Newtown bridge	2nd October, 1882		1 27.09	1	27:09
Newtown to Marrickville	31st December, 1881	1 26.68	0 42.25	ĺ	68.93
Redfern to Botany	17th May, 1882	2 52.09	4 14.03	`6	66.12
Campbelltown to Camden	10th March, 1882	· 7 33		7	33
					•
		16 8:35	13 41.42	29	49.77

The permanent-way on all these lines has been kept in good running order.

The work of relaying both up and down lines between Redfern and Hunter-street with steel rails and guards has been continued and completed during the year. The section from Liverpool-street to Botany-street, and the curve at entrance to Moore Park, have also been renewed with steel rails.

The rails in Botany-street and in a portion of the up line from Racecourse to Randwick are wearing fast, and will require renewing during 1883. The up line from Darlinghurst to entrance to Water Reserve, and the down line from Darlinghurst to near the Sacred Heart Church, and from cokehouse to Paddington Reservoir, have been relaid with steel rails and guards. The rails in the other portions of this section are wearing fast, and will require renewing. About 8 chains of the Woollahra line has been relaid, and the other portion will shortly require renewing. The whole of the Crown-street line will have to be relaid, as the iron T-rails are much worn.

The road in Devonshire-street, which is laid with 70-lb. steel T-rails, is standing well. The curves leading into and out of Redfern-street have been relaid with steel rails, and the other portions of the section to Waterloo will require renewing during the year. From this point to Botany the line is in good order.

The Glebe and Forest Lodge lines are in good order.

The very heavy traffic on the road from George-street West to Newtown Bridge necessitated considerable repairs to the line, which, however, is now in good order. From Newtown Bridge to Marrickville the line is in good order, but the iron T-rails on this section show signs of considerable wear.

Lines in course of construction:—

Randwick to Coogee, double line

University Gates to Johnson-street, Leichhardt, double line

Length.

1 mile 70 chains.

1, 24,

Total ... 3 miles 14 chains.

The following works have been carried out during the year:-

Culvert widened at Sydenham Road, Marrickville.

Water-meter fixed at Newtown.

Box erected for pointsman at corner of George and Devonshire Streets, Sydney.

Water-crane and stand-pipe erected at Treasury grounds.

Smiths' shop for permanent-way erected at Tramway yard, Pitt-street.

Fourteen lamps erected at stopping places, Waterloo to Botany.

Two 12-feet gates erected at Mr. Pemell's property, Randwick.

Fence erected at Queen-street, Woollahra.

Fence erected at Camden Tramway.

Ash-pit constructed at Botany.

Motor-shed erected at Botany.

Accommodation provided for Traffic Foreman at Treasury grounds.

Closets erected at Treasury grounds.

Closets and urinals erected in Tram-yard, Pitt-street.

Ten gates erected on Tram-line, Campbelltown to Camden.

Goods-shed and platform erected at Camden.

Goods-shed and platform erected at Narellan.

Buffer-stops erected at Narellan.

Buffer-stops erected at Camden.

Four pairs gates erected at Camden.

New signal-box erected at Tram Junction, Campbelltown.

Interlocking apparatus fixed at Tram Junction, Campbelltown.

Coal-stage erected at Campbelltown.

Tram-car shed erected at Randwick, by contract.

Brass furnace erected at Randwick, by contract.

Running-shed erected at Randwick, by contract.

Store and offices in course of erection at Randwick, by contract.

PERMANENT-WAY RELAID.

	1881	1882.	Total.
Redfern to Hunter-street	Feet. 4,620	Feet. 9,961	Feet. 14,581
Liverpool-street to Darlinghurst	2,932	5,570	8,502 .
Darlinghurst to Moore Park	1,140	652	1,792
Crown-street Line	•••••	153	153
Darlinghurst to Waverley	. 386	7,716	8,102
Woollahra Line	•••••	542	542
Redfern to Botany	•••••	384	384
Total	9,078	24,978	34,056

 Sidings relaid during the year:—
 ...
 ...
 ...
 ...
 ...
 531 feet.

 Sidings at Pitt-street yard
 ...
 ...
 ...
 ...
 ...
 792 ,,

 Total
 ...
 ...
 ...
 1,323 feet.

					- , ' 3				
	The following sidings have been laid in	a durin	g the	year :-	_			Feet.	
	Through-roads, Pitt-street yard	1	· · · ·	•				279	
į	Do Liverpool-street		• • •	;.		11.		376	
	Do Elizabeth-street			:::	-			251	
	Sidings and through-roads, Tre				•••	•••	•••	1,351	
•	Through-roads, Redfern and Fo						•••	126	
	Sidings at Moore Park		ouge	III.C		• • • •	***	•	
•	- Loop siding, Vernon-street	•••	•••	•••	•••	•••	•••	3,022	
	. -	•	•••	•••	•••	•••	•••	514	
	Through-road, Woollahra line			`	•••	• • • •	•••	126	
	Sidings and through-roads to w	orksno	ps, r	andwic	ĸ	·	•••	10,479	
		Total	•••	•••	•••	;*;		16,524	
	The following sleepers have been used New Lines—	during	the	year :	-				
	Hunter-street to Bridge-street				•••	•••	•••	1,855	
	Doubling-line, Darlinghurst to	-			eriey	***	••;	287	
	Doubling-line, Newtown bridge	to Sta	tion-	street	• • •	•••	•••	591	
		Total	.,.	•••	.,,	•••	•••	2,733	
	•	•	,		,			4 5 4 5 5 5	
	Relaying—				-			•	
	Redfern to Hunter-street	•••	•••	•••	•••	•••		308	
•	New Sidings—				•		•		
	Vernon-street			•					
	•	•••	•••	•••	•••	•••	•••	174	
	Randwick	•••	•••	•••	•••	•••	•••	224	
		Total	•••	•••	• • • •	:::		398	
			7.48	-1.		•	• •		
	The following shows the number of m	en per	$_{ m mile}$	of sing	le line (engage	d in th	e maintenance of	the
perma	nent-way :—		•	•	•			• • •	
	Redfern to Bridge-street	•••					1	den per mile. 1·43	
	Liverpool-street to Randwick			1.2	• .	•••	•••	1.77	
	Crown-street line	;;		; · · ·	•••	··•	•••	1.17	
•	Darlinghurst to Waverley and	∵: Woolla	hra		:::	:::	÷	· y	
	Redfern to Botany	11 00114	•		:::	•••	;;·	1·17	
	Redfern to Forest Lodge and G	 Llaha D	oin't	::.	•••		;;·	0.85	
			01110	•••	•••	••	:::	1.33	
	George-street West to Marrick	Aime	, ,	::;	• •	;··	∷:	1.58	
	Campbelltown to Camden	***	11.	•••	:::	:::	;··	1.08	
		LACHIN	ERY,	&c.					
	. Rar	rdwick	Work	cshops.					
1	8-horse power horizontal engine.	•		_	nter sha	aft with	nulla	770	
	10-horse power vertical boiler.							ial chain blocks.	
	Large lathe for turning wheels.				et, 10		do	_	
	Screw cutting lathe, 8" centres 15' bed				our-whe			do.	
1								Janeary 1	
1	3 4						with c	hạin and rope sļi	ngs.
	राई ६				itters' v				•
1	do $8\frac{1}{2}''$ do $14'$ do.				ets fitte				
1	do 10" do 16' do.				ets gas-				
	Brass finishers' lathe, 6". do 14' do.				ets stoc			•	
_	Vertical drilling machine, 18" space.			- ~	et large	_			
1					et small			_	
	Small do.	_						s complete.	
	Double table shaping machines, 14" str	oke.			ts boile		s.	do.	
	Rack planing machine.				t tinsm			dρ.	
	2½ cwt. steam hammer.			1 Sl	otting 1	nachine	ą.		
	Patent fan to blow six fires.			1 Sc	rewing	machir	ı <u>ē</u> .		
	Grindstone, 5ft. diameter.			1 F	oot lath	e for b	rass fir	ishing complete.	
75	Feet main shafting with face plate coupl	ings			achine			-	
	complete,	<i>-</i>		1 La	athe for	turnir	g whe	els.	
<u>.</u>								MACHINE	· •

Machinery,

MACHINERY, &C.—continued.

Pitt-street Yard.

- 1 6-horse-power engine with vertical boiler.
- 50 Feet main shafting with pulleys complete.
- 1 Screw-cutting lathe, 75" centres 11' bed.
- 1 Do. 6" do 6' dô.
- 1 Shaping machine, 6½" stroke, with gear and tools complete.
- 1 Drilling machine, 15" centre.

- 1 Set twist drills.
- 1 Set stocks, taps and dies.
- 1 Grindstone.
- 15 Vices.
- 2 Sets blacksmiths' tools complete.
- 1 Screw-cutting lathe, 7\frac{1}{2} centres 10ft. bed.
- 1 đo

 $7\frac{1}{2}''$ do 12ft. do:

Appended is a detailed report on the condition of rolling stock on December 31st, 1882:

Engines.

- No. 1 Engine.—Is undergoing thorough repairs.
- No. 2 Engine.—Is undergoing a thorough overhaul.
- No. 3 Engine.—Under repairs to boiler.
- No. 4 Engine.—Has undergone repairs and is now in good running order.
- No. 5 Engine.—Has had a thorough overhaul and is now in good running order.
- No. 6 Engine.—Running on Camden line.
- No. 7 Engine.—In good running order.
- No. 8 Engine.—Running on Camden line.
- No. 9 Engine. In good running order.
- No. 10 Engine.—Is in running order, but requires frequent repairs.
- No. 11 Engine.—In good running order.
- No. 12 Engine.—In running order, but will shortly require repairs.
- No. 13 Engine.—In good running order.
- No. 14 Engine.—Has undergone repairs and is now in good running order.
- No. 15 Engine.—In running order, but will shortly need an overhaul.
- No. 16 Engine.—Now running, but will soon require repairs.
- No. 17 Engine.—In good running order.
- No. 18 Engine.—Has recently had a complete overhaul and is now in good running order.
- No. 19 Engine.—In good running order.
- No. 20 Engine.—In good running order.
- No. 21 Engine.—Has recently had a complete overhaul and is now in good running order.
- No. 22 Engine.—Has recently had a complete overhaul and is now in good running order.

- No. 23 Engine. Under repairs.
- No. 24 Engine.—In good running order.
- No. 25 Engine.—In running order, but will shortly require repairs.
- No. 26 Engine.—In good running order.
- No. 27 Engine.—Requirés new tyrés.
- No. 28 Engine.—In running order.
- No. 29 Engine.—Will shortly require an overhaul.
- No. 30 Engine.—In good running order.
- No. 31 Engine.—In good running order.
- No. 32 Engine.—In good running order.
- No. 33 Engine.—In good running order.
- No. 34 Engine.—In good running order.
- No. 35 Engine.—Will shortly require a thorough overhaul.
- No. 36 Engine.—Has had a good overhaul and is now in good running order.
- No. 37 Engine.—Has had temporary overhaul and is now in fair running order.
- No. 38 Engine.—In fair running order.
- No. 39 Engine.—In fair running order.
- No. 40 Engine. In fair running order.
- No. 41 Engine.—In fair running order.
- No. 42 Engine.—In running order, but requires frequent repairs.
- No. 43 Engine.—In running order, but requires frequent repairs.
- No. 44 Engine.—In first-class running order.
- No. 45 Engine.—In first-class running order.
- No. 46 Engine.—Combined engine and car. In running order, but requires frequent repairs.

CARS.

CARS.

Class.	Numbers.	Description:	Number of wheels.	To carry.	Remarks.
A {	3	Double-decked	Two 4-wheel bogies Two 4-wheel bogies Two 4-wheel bogies	90 passengers 90 passengers 90 passengers	Requires repairs and alteration. Has been fitted with sliding-doors and is now in good order. In workshops being fitted with sliding doors. Requires alteration and thorough repair. In good condition.
A2 {	44, 45, 46. 21, 22, 24, 25, 26, 27, 28, 29, 30. 31	Double-decked	Two 4-wheel bogies	90 passengers	In fair condition. In workshops under repairs. In fair condition. In running order but will soon require an overbaul. In fair condition.
A3	48, 49, 50	Double-decked	6 wheels	60 passengers	In fair condition.
A4 {	51, 52, 53 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76,	Double-decked	4 wheels	60 passengers	In workshops for repairs to under frame. In fair condition.
A5 {	81, 82, 83, 84, 85	Double-decked	4 wheels	·60 passengers	In fair condition.
A6	95, 96, 97, 98	Double-decked	4 wheels	60 passengers	In fair condition.
В	9	Single-decked, closed	Two 4-wheel bogies	60 passengers	In fair condition.
в1 {	11, 12 16 23	Single-decked, closed Single-decked, closed Palace car	Two 4-wheel bogies	60 passengers 60 passengers	In fair condition. In workshops awaiting wheels.
o {	10, 17 18, 19 20	Single-decked, open Single-decked, open Single-decked, open	Two 4-wheel bogies	70 passengers 70 passengers 70 passengers	In fair condition. Require thorough overhaul and painting. In fair condition.
j [.			<u>'</u>

GENERAL REMARKS.

RAILWAYS.

An immense quantity of work of every description has been done on all the lines.

The tops of many of the bridges on the Southern and Western lines have been renewed; some more require to be renewed. One on the Western line has been taken down and a culvert substituted. A few others I purpose doing in the same way. The ravages of the white ants necessitate very careful watching. Many of the iron bridges have been carefully examined and repaired; loose rivets taken out and others put in, with other necessary repairs, cleaning, painting, &c. The Petersham viaduct is showing signs of weakness, and must shortly be taken down. I therefore propose to replace it with a brick and iron structure of three spans as soon as possible. It is being watched daily, and every care taken to keep it safe.

The permanent-way on all the lines is in first-class running order. A great number of sidings has been laid in, several new station buildings erected, and many of the platforms renewed, widened, and lengthened.

The excavations for the new work-shops at Eveleigh are rapidly approaching completion. The foundations for the large running shed, together with engine-pits to accommodate 126 locomotives, are completed. A portion of the iron roofing has been imported, and will soon be fixed. Tenders are being invited for several of the workshops, the erection of which will soon be in hand.

The running-sheds at Goulburn, Penrith, and Bathurst have been delayed for various reasons, and are therefore not as forward as I should like to see them, but I hope to make better progress with them shortly. Some progress has been made with the workshops at Newcastle, but there is a good deal more to be done there yet.

The interlocking of switches by Mackenzie and Holland's system has been carried out in several of the station-yards, and answers admirably. I trust before long that all the yards will be worked by this system.

Not much has yet been done towards improving the appearance of the Redfern station by a proper system of roofing, &c., but I hope to have something approved of shortly, as this must always be a station of considerable importance, whether the line is eventually extended to the Circular Quay or not.

Quadrupling the line from Eveleigh to the Redfern yard will, I think, be a great improvement, and is absolutely necessary before the increased traffic from the Illawarra and Northern lines is brought in.

The general Railway Stores, with ample office accommodation, &c., at Eveleigh, have been completed, and are now occupied.

TRAMWAYS.

THERE are now over 1,000 trains arriving at and leaving the terminus at Bridge-street daily—a great many more than I ever expected could be worked in this small yard; but before any more extensions of the present lines can be brought into the city it will be necessary either to get more room for shunting or continue the lines round the city.

The repairs and renewals have been very great, but the roads are now mostly in fair working order. There is great difficulty in keeping the joints good in consequence of the weakness of the fishing, which cannot be strengthened in consequence of the shallow depth of the rail, also the creeping of the rails running the joints past the sleepers. This will, I am afraid, always be a great source of annoyance and expense, unless a different rail with a continuous iron sleeper be adopted.

No. 1 carriage-shed, motor running-shed, store and offices, have been erected at Randwick, and tenders are about to be invited for the erection of No. 2 carriage-shed.

I have, &c.,

GEORGE COWDERY.

No. 2.

The Locomotive Engineer to The Commissioner for Railways.

Department of Public Works, Railway Branch,

Sir,

Locomotive Engineer's Office.

I have the honor of reporting as follows on the maintenance and general condition of the rolling stock, water supplies, &c., under my supervision during the year ending 31st December, 1882:—

SOUTHERN AND WESTERN LINES.

The whole of the locomotive engines and tenders have been kept in good working order during the year, except those either awaiting repair or under repair in the shops. There are also several old engines of a very light class (referred to in previous reports) standing idle, which are in moderate condition, but unfit for present traffic. But instead of breaking them up I intend fitting small jib cranes to them and thus convert them into locomotive steam cranes for coaling engines, shunting coal waggons, and washing out the boilers of running engines by means of a steam jet and hot water instead of using cold water for the purpose as at present, as I consider the action of cold water on hot boiler plates does them great injury and causes great strain from unnecessary expansion and contraction.

Thirty-one new engines were added to our stock during the year, viz., nineteen from English makers, and twelve from Colonial makers, making a present total of 231. The Colonial-built engines have, so far, fulfilled my expectations as regards material and workmanship.

Considering the increase of traffic and mileage our stock of engines is still below our requirements, especially as far as goods engines are concerned, and although we shall in a few months be in receipt of some sixty additional engines (thirty goods, twenty-four passenger, and six suburban tank engines for passenger traffic), I strongly recommend that immediate steps be taken to provide more, seeing that our lines will increase in length very much by the approaching completion of the Illawarra, the Cooma, the Newcastle Junction Lines, and the extension from Nyngan to Bourke.

This department is not only suffering greatly from want of engines, but excessively so from want of proper workshop and yard accommodation, and the necessary modern appliances for effecting repairs and renewals of the rolling stock. These repairs, &c., are increasing at a rapid rate, natural to the increase of stock and mileage; in addition to this our difficulties have been increased by giving up a portion of our yard at Redfern to the Traffic Department. I cannot use terms sufficiently strong to impress upon you the extreme importance of having the new shops at Eveleigh erected and finished as soon as it can possibly be done, as if this is not done I fear our difficulties will be insurmountable.

I trust that the erection of the new running-shed at Eveleigh (which seems to be progressing favourably) will soon be completed, as that instalment will be a great relief to the running department, as at present it is barely safe (especially at holiday times) to do what has to be done on the small space at Redfern; the work necessitates the utmost caution and forethought from all who work there.

The repairs carried out through the year have as usual consisted of the "daily running repairs" at Redfern, and at the principal locomotive depôts, and "thorough" repairs to engines and tenders, which in many cases necessitated their being kept in the shops a long time. The boiler repairs have been excessively heavy, as many of our earlier engines required a lot of repair and renewal, and others are getting into the same condition; and with our small shop accommodation it makes it extremely difficult to do work satisfactorily.

To meet the increased work additions have been made to the Locomotive Engineer's Office for the accommodation of the draughtsmen and clerks, and two new 4-feet wheel lathes have been put down in the workshops for turning carriage and waggon (wheel) tyres.

In the early part of the year the Camden Tramway was handed over to this department, and after several months' experience of working this line with motors and cars (as used in the streets of Sydney) it has been found desirable to put two small locomotives there to work the traffic, and I would support a suggestion already made that designs for new stock, including engines and cars, be got out at once for this and any similar lines which it may be the intention of the Government to construct.

The passengers carriages, vans, &c., and also the goods vehicles have been kept in an efficient state of repair, except a number of waggons, the wood work of which is decayed and requires renewing; these necessary works cannot be undertaken on account of want of shop-room. The erection of the new paint-shop at Eveleigh gives us very fair accommodation for painting, and the old paint-shop gives us a little extra room for repairing waggons, &c., but the space and appliances are still very much under our present necessary requirements, and what I have already said with regard to the erection of the locomotive shops at Eveleigh holds good also for the carriage and waggon department.

Notwithstanding

Notwithstanding the fact that considerable additions were made to our carriage and waggon stock during the year there is still a great want of stock of nearly all classes, and I would suggest that a liberal quantity be ordered as soon as possible to meet the ever increasing traffic and increase of mileage.

During the year one brake van, nineteen D waggons, and three ballast waggons were renewed.

The various water supplies have been a source of great anxiety and responsibility, especially on the mountain line, where during the latter part of the year, and for some time after, it was necessary to carry water from Penrith to Linden by means of a locomotive and two tenders and afterwards by substituting a large tank (on Bogie's) instead of the tenders, the supplies at Glenbrook, Lawson, and Wentworth Falls having practically given out. A permanent supply will shortly be established at Linden.

The supplies at Dubbo and Wellington from "wells" have, from the opening of the line, given constant trouble, and during the year at each place new works have been carried out whereby supplies have been taken direct from the River Macquarie, which I am happy to report have given great satisfaction. The work was done at a reasonable cost; and the change of water has had a very beneficial effect on the locomotive boilers.

The water supply at Goulburn has also been very much improved. A new line of 6-inch pipes has been laid for $2\frac{1}{3}$ miles, and we now have the advantage of an abundant supply; but before this the supply was very small and the risk great.

The water supplies all over the system require the greatest and most careful attention, if we are to be free from trouble as regards this matter in the future; and I have for some time been making proper provision for this, and trust that the works you have sanctioned will give entire satisfaction when carried out. It is evident from our present experience of having to run water-trains for the accommodation of the permanent-way men and their families, that consideration will have to be given to the extension of this system as we go further into the western districts: this, with our locomotive requirements, will cause a great demand on our resources.

The water supply at Granville, Liverpool, Barber's Creek, Goulburn, Fish River, Harden, Bethungra, Junee Junction, Narandara, Penrith, Kerr's Creek, Stoney Creek, Wellington, Dubbo, and Richmond, have also received considerable attention.

There has naturally been an increase in the working expenses of this department due to increased traffic, increase of wages, and shortening of drivers' hours.

The cost of repairing engines, other rolling stock and machinery, has in every case been charged against the vote for working expenses.

Appended is the list of locomotive engines, machinery in workshops and at pumping stations, &c.

GREAT NORTHERN LINE.

Locomotive Engines and Tenders.

These have all been maintained in good working order during the year 1882, and although four new goods engines have been added to the stock we are still inadequately supplied with power. There are now fifty-five engines on this line.

The completion of the new smiths' shop at Honeysuckle Point has afforded us great convenience in carrying on the repairing, &c. The new boiler-shop and new offices now being erected will assist us still more. It is necessary that a new and more modern style of running shed be erected at once at Newcastle, not only for the better accommodation of the engines now stationed there (the present running sheds being too small and otherwise unfit) but for the adequate stabling of additional engines when the line from Sydney to Newcastle is completed. I have already forwarded plans of what I propose for your consideration and approval. It is also necessary, in my opinion, to make similar provision for the running engines stationed at Singleton.

The usual repairs to locomotives and tenders have been carried on; but the older engines are in such a condition as to require heavier repair.

The passenger and goods stock has been maintained in good condition. Although a number of vehicles has been added during the year 1882 there is still a deficiency of passenger vehicles and brake-vans.

The water supplies, although not so short as on the Western line, have been a source of anxiety and require careful attention. To make ample provision for the future a line of 9-inch pipes has been laid from Bullock Island Junction to Honeysuckle yard, instead of the old 3-inch pipes.

The cost of repairs and renewals of rolling stock and machinery has been charged against the vote for working expenses.

No. 2—continued.

MACHINERY IN WORKSHOPS.

No.	Descrip					<u></u>	Remarks.
<u></u>	· ··		Machine	Shop.	Sydney	•	· · · · · · · · · · · · · · · · · · ·
1	20-h.p. horizontal steam-engine		•••				In good order.
$egin{array}{c} 2 \ 3 \end{array}$	Old locomotive boiler for above Do do	 	•••	•••		•••	In fair order.
168	Duplex wheel-turning lathe	• • • •			•		In good order.
$egin{array}{c c} 172 & 4 & 4 \end{array}$	Do do 8-ft. double-headed wheel-turn	 inø	lathe	•••	•••	*	do do
5	4-ft. 6-in. do do	6					do ·
128	4-ft. 6-in. do do 3-ft. 6-in. do do		•••	•••	•••	•••	do do
$\begin{array}{c} 6 \\ 7 \end{array}$	5-ft. 6-in. single-headed do			•••			In fair order.
8	4-ft. do do		•••	,			In bad order.
$\begin{array}{c} 9 \\ 129 \end{array}$	15-in. screw cutting lathe 15-in. do	•••	•••	•••	•••	• • • •	In good order.
. 10	12-in. do		•••		•••		do .
$\begin{array}{c c} 120 \\ 125 \end{array}$	12-in. do 12-in. do		•••	•••	•••	•••	do do
120	11-in. do				•••	•••	Not in use.
13	10-in. do	.∴	·			•••	In good order.
. 14 15	10-in. do 10-in. do	•••		•••	•••	• • • •	do do
121	10-in. do .	·	•••	• • • • • • • • • • • • • • • • • • • •	•••		do
124 174	10-in. do 10-in. do	• • •	•••	•••	•••	• • • •	do
16	10-in. do 9-in. do	• • • •		•••	•••		do do
17	8-in. do	•••	•••]	In fair order.
$egin{array}{c c} 122 & \\ 123 & \\ \end{array}$	8-in. do 8-in. do	•••	` •••		•••	•••	In good order.
131	6-in. do	• • • •	•••		•••		\mathbf{do}_{\cdot} .
19	9-in. common slide lathe	•••		•••		:	In fair order.
135 49	Chasing lathe Hand and slide lathe	· · ·	•••		•••	•••	In good order.
93	Brass finishers' lathe		•••	•••	•••		do
$\begin{bmatrix} 20 \\ 21 \end{bmatrix}$	12-ft. planing-machine 10-ft. do	•••	•••	•••	·	•••	In fair order.
$\begin{bmatrix} 21 \\ 22 \end{bmatrix}$	6-ft. do	•••			•••		In good order.
23	3-ft. do	•••	•••		•••		do .
$egin{array}{c c} 164 & \\ 24 & \\ \end{array}$	Circular shaping-machine Double-headed do	•••	•••	• • •	•••		do , do
25	Single-headed do		•••	•••	•••		In fair order.
126 134	Do do	•••	•••	•••	···· .		In good order.
26	Bolt and nut do	•••	•••		•••		do do
27	Do do	•••	***	••••			do
133 152	Do centring-machine Top grooving-machine	• • •	•••	. •••	•••	···	do do
165	Circular slotting-machine			•••	•••		do
$\begin{bmatrix} 28 \\ 29 \end{bmatrix}$	Slotting machine, 12-in. stroke Do 6-in. do		•••	• • •	•••		In fair order.
166	Single-geared slotting-machine			•••	•••		In good order.
30 144	Screwing-machine Do	•••	•••	•••			do
31	Do	· · ·	•••	•••			do do
32	Cylinder boring mill (attached	to	lathe)		•••		do
33 34	Radial drilling-machine Do do	•••	•••	•••			do do
35	Do do				••.		do
36 143	Vertical do Vertical drilling-machine	•••				•••	do do
. 37	Small drilling-machine	•	• • • •		•••	• • •	do do
38 127	Do do Vertical do	•••	•••	•••	•••	•••	do
163	Tire boring-machine	· · · ·	•••	••	•••	• • •	do do
167	Drill for wheel tires	•••	• •••	•••	•••		do
40 41	Circular saw bench Do do	•••		•••	•••	• .:.	Not in use.
42	Grindstone and trough		•••	•••			In fair order.
43 151	Do do 20-inch double emery wheel.	•••		•••:		· · ·	do Tu good order
48	Twist drill grinding-machine	•••					In good order.
44	Pillar crane for lathe		·	•			m do
	•						· · · · · · · · · · · · · · · · · · ·

No. 2-Machine Shop, Sydney-continued.

Carriage-shop .		
According to According to According to According to		
46 Overhead do do do do do do do do		
Do		
Do do do do do		
Boiler Shop.		
Boiler Shop.		
10-h.p. portable engine and boiler		
Large punching and shearing machine In good order Small do do do do do do do		
Large punching and shearing machine do Small do do do		
Small do do do do do do do		
Plate-bending-machine		
156		
Fly punching-machine Circular saw for cutting tubes do		
Circular saw for cutting tubes do do do do do do do do do do do do do		
Carriage Shop. Carr		
Vertical saw .	•	
Plate-heating furnace Tube-cleaning machine Ado		
Tube-cleaning machine Shafting, pulleys, &c., for the foregoing Dattern Shop.		
Shafting, pulleys, &c., for the foregoing Dattern Shop. Do Do Carriage Shop. Do Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop. Carriage Shop.		
Pattern Shop.		
14-in. pattern-makers' lathe		
Small wood-turning lathe		
Sand saw		
145		•
Moulding tool-grinder		
Blacksmiths' Shop.		
Blacksmiths' Shop.	sferred	from
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	biolica	11011
Tire-bending-machine with furnace		
Tire-stretching do do do In good order.		
66		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		•
69 3-ton crane for		
70 Vertical boiler and donkey-engine for do		
71 15-cwt. steam hammer do 72 20-cwt. crane for do do 73 5-cwt. steam hammer do 175 Do do		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		
74 Blast fan do 161 Do do 75 20-cwt. crane for tires do **Carriage Shop.**		
161 Do do do do		
75 20-cwt. crane for tires do **Carriage Shop.**		•
Carriage Shop.		•
OF 1441 111 111 111 111 111 111 111 111 1		
97 14-h.p. portable engine and boiler In fair order.		
99 Band-saw In good order.		
160 12-in. sweep cutting-saw do	•	
100 General joiner do 101 Vertical drilling-machine do		
109 Sarawing machina		
100 Chindstone and trough		•
154 Moulding tool-grinder do		
104 $5\frac{1}{2}$ in. scroll-saw do		
155 Wood-planing-machine do		
105 3½ in. morticing and boring machine do		
Shafting, pulleys, &c., for the foregoing do		
General at Sydney.		
76 Locomotive engine-weighing machine In fair order.		٠ -
158 Steam travelling crane In good order.		
77 Travelling crane do 78 Do do	•	
70 Oil testen		
79 On tester do		

No. 2-General at Sydney-continued.

	Descrip	tion.				Remarks.
80	Small turn-table :.:	1.1 141	· ·		Ì	In good order.
81	Do		100			do
82	T	111		•••		do
33	<u>D</u> o	:::	•••	•••		do
4	Do	···		•••	••••	do "
5	Traverser	:	•••	:	•••	do do
6	\mathbf{Do} \mathbf{Do}		···	1		do
7	Crab-winch for lifting engines]	do .
88	Do do	:		•••		do
39	Do do			• • •		do
90 † 91	Do do	· · · · · · · · · · · · · · · · · · ·		•••	••••	do do
7	5-ton jib crane Hand fire-engine .:.	:		•••		· do
)5	10-ton jib crane	· · · · · · · · · · · · · · · · · · ·		•••	:	do
32	Tube tester	,				Requires repairing.
30	Valve-facing machine (for outs			• • •		In good order.
ŀ8		dë cylindë	er)	•••	•••	do do
60 19	Shaft-straightening machine Saw-sharpening machine	:		•••		Not yet erected.
32				•••		In good order.
39	Do		•	:		do
1	Hydraulic testing machine	•••		•••	•••	do
7	Five pairs portable steel-yards	:	!	::.	۱۱	do ·
		Brake	Block St	hop, Äydr	ney.	•
42	6-h.p. portable engine and boil	é r		:	•••	In good order.
59	Cutting off saw Do			•••	•••	Not yet erëcted. In good order:
11 10	$egin{array}{ccccc} & Do & \dots & \dots \\ \ddot{B} and s \ddot{a} \ddot{w} & \dots & \dots & \dots \end{array}$:.		•••	•••	do
£6	Circular saw and bench			•••		do
		•	P ênri	i 2 .		·
0.0			Penru	in.	i	a.
06 07	4-h.p. vertical engine and boile 10-in. screw-cutting lathe		• •••	•••	•••	do do
08	5-in. do do			•••		do
9	10-in. shaping-machine	.:. :.		•••		In fair order.
10	Drilling-machine	·		•••		In good order.
11	Screwing do	i Zmachin		•••		do To foio oddor
L2	Portable punching and shearin Shafting, pulleys, &c., for the f	oregoing	•	•••		In fair order, In good order.
	, '		Bathur	·et		•
38	4-h.p. portable engine and boil	er			•	do .
16	Large vertical drilling-machine	i			•••	go
l7	Small do do	: _: :.				do
18	10-in. screw-cutting lathe			.:•	•••	do
37 39	6-in. do do Screwing-machine	!!		 ::.		do do
19	Small shaping-machine	!!				do
92	Hand fire-engine ::.			•••		ďő
	Hand fire-engine Shafting, pulleys, &c., for the	foregoing		•••	•••	do
			Goulbu	ırn.		
	2-h.p. vertical engine and boile		· · · · · · · · · · · · · · · · · · ·			In fair order.
	1 111 am monour outtime letté			•••	•••	dó In good örder.
14	10-in. screw-cutting làthé			•	•••	In fair order.
14 36	6-in. do dő					In good order.
14 36		٠٠. ٠٠.			, ••·	in good order.
13 14 36 15	6-in. do dő Small drilling machine	٠٠. ٠٠.		:·· en.	, •••	in Book order.
14 36	6-in. do dô Small drilling machine Shafting, pulleys, &c., for the	 fòregoing		en.	•	In good order.
14 36 15	6-in. do dô Small drilling machine Shafting, pulleys, &c., for the 4-h.p. vertical engine and boile 11-in. screw-cutting lathe	foregoing	Hard !! !!:	<i>:::</i>	•	In good order. In fair order.
14 36 15	6-in. do dô Small drilling machine Shafting, pulleys, &c., for the 4-h.p. vertical engine and boile	foregoing	Hard !! !!:	##	•	In good order.
14 36 15	6-in. do dô Small drilling machine Shafting, pulleys, &c., for the 4-h.p. vertical engine and boile 11-in. screw-cutting lathe	foregoing	Hard !! !!:		•	In good order. In fair order.

No. 2-continued.

LIST OF MACHINERY at Sydney and other Stations added to the Stock during the year 1882.

No.	Desc	ription.			Remarks.		
171 172 174 175 177	Hydraulic testing machine Duplex-wheel lathe 10-in. screw-cutting lathe 5 cwt. steam-hammer 5 pairs portable steel-yards			11. 2 11.	#** **: **: **:	:::	Turning shop, Sydney do do Blacksmith shop do

ENGINES AND PUMPS FOR SUPPLYING WATER.

		DRUTTES AND TOMES FOR SUFFRIGHT WALES	
No.	Place.	Description.	Remarks.
1	Sydney	6-h.p. engine and two pairs of 7 in. pumps with two tubular-boilers.	In good order.
6	Do	4-h.p. engines and two boilers and 7 in double acting pump.	Transferred from Picton Lakes. Requires repairing
23	Do ·	4-hp. Garrett and Marshall pumping-engine	Transferred from Lawson; not at present in use.
2	Do	3½ in. hand-pump	Transferred from Granville; not at present in use.
8	Do	4-h.p. engine and boiler and 4 in. double acting	
39	Do	pump. Tangye steam-pump, 6 x 3	Creek; not at present in use. Transferred from Mulwarree; not at present in use.
10	Do	Do do 6 x 4	Transferred from Mulwaree; attached to locomotive No. 69 for temporary water supply
36	Do	2-h.p. vertical boiler and engine and pair of $3\frac{1}{2}$ in. pumps.	
71 72 73 76 3	Eveleigh Do Do Duck River Liverpool	10-h.p. vertical engine and boiler Pair Tangye 6-in. geared pumps Tangye steam pump, 8×4 Do do 8×4 4-h.p. engine and boiler and pair $5\frac{1}{3}$ in. pumps	In good order. do do do do
4	Do	Windmill pump	Out of order; not worth repairing.
5 67	Menangle Picton Lakes	6-h.p. engine and boiler and pair 7-in. pumps 8-h.p. horizontal engine and boiler with 6-in. geared pump.	In fair order In good order.
42 50 7 75 9	Do Mittagong Wingecarribee Barber's Creek Goulburn Mulwarree Ponds	Blake's patent steam-pump, 10 x 6	do do do
78 12 13	Do Do Fish River	Blake's do 10 x 6 6-h.p. vertical boiler, for the same 4-h.p. Garrett & Marshall's pumping-engine and vertical boiler.	do do do do
14 15 16 17 41 74 40	Yass Do Rocky Ponds Illalong Creek Harden Do Cootamundra	Tangye steam-pump, 8 x 4	do do do In fair order. In good order. do do
18	Do	4-h.p. vertical engine and boiler, and pair 5-in.	do
18½ 77	Bethungra Do	Tangye steam-pump, 8×5 Do do 6×5	do In good order; formerly the property of Cornwell, Mix- ner, & Co., at Hanging Rock.
184 31	Junee Junction Do	2½-in. double-acting hand-pump Tangye steam-pump, 6 x 3	In fair order. In good order. Temporarily in use. Transferred from Store Creek.

No. 2—continued.
Engines and Pumps for supplying Water—continued.

No.	Place.	Description.	Remarks.
57 60 61 62 53 54 55	Old Junee South Wagga Do Doudal Cooma Culcairn Albury Boggy Creek Do	6-h.p. horizontal engine and vertical boiler Pair 4-in. deep well-pumps Tangye steam-pump, 7 x 5 No. 5 pulsometer-pump Do do Do do Tangye steam-pump, 8 x 4	do do do do do do do
56 19	Narrandera Do	Do do 8 x 6 Do do	do In good order. Formerly at
80	Bringagee	4-h.p. vertical engine and boiler, and pair 4-in.	North Wagga.
79	Hay	deep well-pumps. 4-h.p. vertical engine and boiler, and pair 4-in.	do
20	Penrith	deep well pumps. 6-h.p. portable engine and boiler, and two pairs $3\frac{1}{2}$ -in. pumps.	Not at present in use. Requires repairing.
$ \begin{array}{c} 20\frac{1}{2} \\ 69 \\ 70 \end{array} $	Do Do Do	Tangye steam-pump, 8 x 5	In good order. do do
66	Glenbrook	Tangye steam-pump, 6 x 3	In good order. Temporarily required to supplement gravitation supply.
21 22 68	Do Lawson Do	4-h.p. Garrett & Marshall's pumping-engine	In fair order.
43 24	Wentworth Falls Blackheath	Tangye steam-pump, 6 x 3 4-h.p. engine and boiler, and 4-in. double-acting	do In fair order.
25 26 33 83 27	Mount Victoria Lithgow Bowenfels Marrangaroo Rydal	Tank supplied by gravitation. Tangye steam-pump, 8 by 5	In good order. do do In fair order. Not at present
2 8	Tarana	pumps. 4-h.p. engine and boiler, and 4-inch double-	in use.
29 51 65	Do Do	acting pump. 3-h.p. vertical engine and boiler, and Tangye 5-in. deep well-pump (geared). 6-h.p. vertical engine and boiler Pair 6-in. geared pumps	In use. In good order. do
32 34 35	Reedy Creek Blayney Orange	$3\frac{1}{2}$ -in. hand-pump	do do do
64 44	Kerr's Creek Store Creek	No. 5 pulsometer pump Pair Tangye 4-in. deep well hand-pumps	do Lent to Permanent-way Branch.
46 47	Do Wellington	Tangye steam-pump, 8 x 5 7-h.p. Tangye horizontal engine and boiler, and pair 4-in. geared Tangye deep well-pumps.	In good order.
30	Do Dubbo	Aangye steam-pump, 8 x 5	In good order. Formerly at Bathurst.
45 59	ъ,	No. 5 pulsometer pump Tangye steam-pump, 8 x 4	Not at present in use. Formerly at Stoney Creek.
63 82	Do Narromine	No. 5 pulsometer pump	In good order. Formerly at Eveleigh. In good order. In good order. Temporarily
38 48 49 37	Trangie Mulgrave Do Richmond	Do do 6 x 3	in use. In good order. do do In fair order, but not at pre-
58	Do	Tangye steam-pump, 8 x 4	sent in use. Temporarily in use, for making new water supply.
81	Piper's Flat	Do do 6 x 3	Formerly at Eveleigh. In good order.

No. 2—continued.

Pumping Machinery added to Stock during the year 1882.

No.	Place.	Description.	Remarks.
73	Eveleigh	Tangye steam-pump, 8 x 4	Additional pump.
76	Duck River	Do do 8 x 4,	To replace pump No. 38, sent
75	Barber's Creek	Do do 8 x 4	to Trangie. To replace pump No. 8, which requires repairing.
78	Mulwarree Ponds	Blake's steam-pump, 10 x 6	Additional pump.
74	Harden	Tangye do 8 x 4	do
77	Bethungra	Do do 6 x 5	do. Purchased from
			Cornwell, Mixner, & Co.
80	Bringagee	4-h.p. vertical engine and boiler, and pair 4-in. deep well-pumps.	New extension of line.
79	Hay	Do do do	do :
83	Marrangaroo	10-h.p. vertical boiler, and Tangye pump, 9 x 5	For Mudgee extension.
82	Narromine	Tangye steam-pump, 8 x 5	New extension of line.
81	Piper's Flat	Do do 6 x 3	do ·

LIST OF NEW MACHINERY in Store not yet brought into use on 31st December, 1882.

No.	Descri	ption	l .				Remarks.
	1 transverse testing-machine		•••	•••	•••	•••	Ex "Cotopaxi."
	1 drilling-machine		•••	•••	•••		•
	1 screwing-machine		•••		•••		_
	2 punching and shearing machi	nes		•••	•••	!	
	1 8-in. sweep cutting saw			•••	•••		
176	1 duplex wheel lathe		•••		• • •		Ex "Hengist."
	1 punching and shearing machi	ine	••.		•••	[" "Dartford."
	1 15-in. screw-cutting lathe			• • •		•••	" "Northampton."
	3 10-in. do do		•••				.
	1 8-in. do do		••.				"" John Duthie."
	4 radial drilling-machines			•••	•••		3 ex "Northampton," 1 ex "Bann."
	3 planing-machines		•••]	Ex "Bann."
	2 do do		•••		• • •		" "Peterborough."
	2 5-cwt. steam-hammers		·		•••		" "Northampton."
• • •				•••	•••		" "Patriarch."
	6 13-in. single-headed shaping-	mac	hines	•••	•••		" "John Duthie."
	2 screwing-machines						22 22
:	2 drilling and boring machines		•••		•••		" "Northampton."
•	3 6-in. slotting-machines	•••		•••			" "Patriarch."
i	2 drilling and boring machines					• • •	1 ex "Greta," 1 ex "Bann."
	2 30-h.p. stationary engines	• • •			•••		Ex "Thasis."
ļ	2 special steam-pumps, 8 x 4	• • • •	•••	•••			" "Brilliant."
-	3 do do 8 x 4		•••		•••		" "Lammermoor."

No. 2-continued.

GREAT SOUTHERN, WESTERN, AND RICHMOND RAILWAYS.

LIST AND CONDITION OF LOCOMOTIVE ENGINES AND TENDERS ON 31ST DECEMBER, 1882.

Stock	Nahada Nama	Maker's	Class.	Description.		Cylinders.	: 	Number of wheels	Coupled or single	Dia	meter of whee	ds.	Commenced	Condition.
No.	Maker's Name.	No.	Class.	Description.	Position.	Diameter.	Length of stroke.	on engine.	wheels.	Leading.	Driving.	Trailing.	to run.	Condition.
r	Beyer, Peacock, & Co	1892	Goods	Tender engine	Inside	Inches.	Inches.	6	All coupled	Ft. in.	Ft. in.	Ft. in.	April, 1880	In good order.
2	• Do	1893	do	do	do	18	24	6	do	4 0	4 0	4 0	do	do
3	Do	1894	do	do	do	18	24	6.	do	4 0 }	4 0	4 0	do	•
4	. Do `	1895	_do	do	do	18	24	6	do	4 0	4 0	4 0	do	do
5	Hawthorne & Son	944	Passenger.	do	do	14	22	6 '	4 wheels coupled	4 6	4 6	3 6	Nov., 1856.	
6	Fairburn & Sons		do	do	Outside	15	22	6	Single	3 6	5 6	3 6	Mar., 1856.	
7	Do		do	do	do	••••		6	do	3 6	5 6	3 6	April, 1856.	
8	Railway Foundry	634	, do	Tank engine	do	15	22	6	do	3 6.	.5 6	3 6	Jan., 1859.	,
9	Do	635	ا	Tender engine	_do	15	22	6	do	3 6	·5 9	3 6	Dec., 1858.	In fair order.
	Railway Works, Sydney	I	do	do	Inside	17	24	- i	4 coupled	3 6	5 6	56	June, 1870	in fair order.
11	35	-:	 Donasa	Mank anaina				6	Simala		5 6		May, 1861.	
	Manning, Wardle, & Co	II	Passenger.	Tank engine	Outside do	15 16	22	6	Single	3 6	J - 1	3 -	Jan., 1863	In fair order.
13	Beyer, Peacock, & Co	43	do	Tender enginedo	Inside	16	22 20	6	Single	3 - 1	5 °	3 1	Nov., 1865	Under repair.
14	· · · · ·	541	3.	1	-	16	20	6 :	do	3 5 1	6 0	36	Jan., 1866	In good order.
15	'	543	do	•		16	20	6	•	3 6	6 0	· 3 6 3 6	Dec., 1865	In fair order.
	Do R. Stephenson & Sons	542	Goods	3	3. 1	18	24	6		4 0	4 0	4 0	May, 1865	In good order.
17	<u> </u>	1541	do	i	3	18	24	6.	do	.40	4 0	40.	Sept., 1866	In fair order.
- 1	~	1542	3.		1	18	24	6	3	4 0	4 0	4 0	04-	do
20		1543	do	do	اید	18	24	6	do	4 0	4 0	4 0	Jan., 1867	In good order.
21	70.	¹ 547 1548	do	3	3.	18	24	6		4 0	4 0	4 0	do	Under repair.
21	Do	1549	do	do	αο do	18	24	. 6	do	4 0	4 0	4 0	do	do
1	Beyer, Peacock, & Co	443	Passenger.		Outside	18	24	ő	3.	3 0	5 9	5 9	April, 1867	In fair order.
23	Do	444	do	do	do	18	24	6	do	3 0	5 9	5 9	Feb., 1867	In good order.
25	Do	445	do	do	do	.18	24	6	do	3 0	5 9	5 9	April, 1867	Under repair.
26	Do	449	do	do	do	18	24	6	do	3 0	5 9	5 9	Oct., 1865	In fair order.
27	Do	450	do	do	do	.18	24	6	do	3 0	5 9	5 9	Nov., 1866	In good order.
28	Do	45I	do	do	do	18	24	6	do	3 0	5 9	5 9	Mar., 1867	ďo
29	Manning, Wardle, & Co	88	do	Tank engine	Inside	II	17	6	All coupled	3 0	3 6	3 6	,, 1864	In fair order.
30	Ďo	100	do	do	do	11	17	6	do	3 0	3 0	3 0,	Aug., 1864	do
31	Do	80	do	do	do	11	17	6	do	3 0	3 0	3 0	do	Under repair.
32	Beyer, Peacock, & Co	928	do	2-wheel bogie and tender	Outside	18	24	6	4 coupled	3 0	5 6	5 6	Nov., 1870	In fair order.
33	Do	929	do	do	do	18	24	6	do	3 0	5. 6	56.	do	do
34	Do	930	do	do	do	18	24	6	do	3 0	5 6	5 6	Dec., 1870	In good order.
	Do	931	do	do	do	18	24	6	do	30	5 6	5 6	do	do
35 36	Mort & Co	. 1	Mixed	Tender engine	Inside	16	24	6	do	5 6	5 6	. 3 6	Sept., 1870	In fair order.
37	D o	2	do	do	do _.	16	24	6	do	5 6	56	3 6	Nov., 1870	do
38	Do	3	do	do	do	16	24	6	do	5 6	5 6	3 6	Dec., 1870	do
39	Do	4	do	do	do	16	24	6	do	5 6	5 6	3 б	Feb., 1871	do
40	Vale & Lacy	5	Goods	do	do	18	24	6	All coupled	4 0	4 0	4 0	Dec., 1870	In good order.
41	<u>D</u> o	6	do	do	do	18	24	6	do	4 0	4 0	4 0	Jan., 1871	Under repairs.
42	<u>D</u> o	7	do	do	do	18	24	6	do	4 0	4 0	4 0	Mar., 1871	In good order.
43	Do	8	do	go	do	, 18	24	6	do	4 0	4 0	4 0	do	In fair order.
	R. Stephenson & Sons	1981	do	do	do	18	24	6	do	4 0	4 0	4 0	Dec., 1870	do
45		1982	do	do	do	18	24	6	do	4 0	4 0	4 0	Feb., 1871	In good order.
	Do	1983	do	l dol	do	18	24.	6	do	40	4 ^	4 0	Mar., 1871	In fair order.
46 47	Do	1984	do	do	do	18	24	ا د	do	4 0	4.0	4 0	do	do

No. 2—continued.

List and Condition of Locomotive Engines and Tenders on 31st December, 1882—continued.

Stock		Maker's	OT-	Daniel III		Cylinders.		Number	Coupled or single	Dia	uneter of whee	els	Commenced	Condition.
No.	Maker's Name.	No.	Class.	Description.	Position.	Diameter.	Length of stroke.	of wheels on engine.	wheels.	Leading.	Driving.	Trailing.	to run.	Condition.
		·				Inches.	Inches.			Ft. in.	Ft. in.	Ft. in.	}	
48	R. Stephenson & Sons	2181	Goods	Tender engine	Inside	19	26	6	All coupled	.40	4 0	4 0	Dec., 1874.	
49	Do	2182	do	do	do	19	26	6	do	40	4 0	4 0	do	In good order.
50	Do	2183	do	do	do	19	26	6	do	40	4 0	4 0	do	In fair order.
51	<u>D</u> o	2184	do	do	do	19	26	6	do	4 0	4 0	4 0	do	do
52	Do	2348	do	do	do	18	24	6	do	4 0	4 0	4 0	July, 1879	do
53 54	<u>D</u> o	2185	do	do	do	19	26	6	do	4 0	4 0	4 0	Feb., 1875	Under repairs.
54	<u>D</u> o	2187	do		do	19	26	6	do	4 º	4 0	4 0	May, 1875	
55 56	Do	2188	do	do	do	19	26	6	do	4 0	4 0	4 0	do	do
56	<u>D</u> o	2189	do	do	do	19	26	6	do	4 0	4 0	4 0	Aug., 1875	do
57 58	<u>D</u> o	2190	do	do	do	19	26	6	do	4 0	40	4 O	July, 1875	do ,
58	<u>D</u> o	2191	go	do	do	19	26	6	do	4 0	4 0	4 0	Aug., 1875	In fair order.
59 60	Do	2192	do	do	do	19	26	6	do	4 0	4 ` 0	4 0	do	Under repairs.
	,Do	2194	Mixed	[do	do	19	28	6	do	5 0	5 0	5 0	Oct., 1874	do .
61	Do	2193	do	.do	do	19	28	6 ,	do	5 0	5 0	5 0	Nov., 1874	In fair order.
62	<u>D</u> o	2195	do	do	do	19	28	6	do	5 0	5 0	5 0	Dec., 1874	do
63	<u>D</u> o	2196	do	do	do	· 19	28	6	do	5 0	5 0	5 0	do	In good order.
64	<u>D</u> o	2198	do	do	do	19	28	6	do	5 0	5 0	5 0	_ do	In fair order.
65 66	Do	2197	_do	do '	do	19	28	6	do	5 0	5 0	5 0	Jan., 1875	Under repairs.
	Manning, Wardle, & Co	182	Passenger.	Tank engine	do	12	17	. 6	do	3 0	3 0	3 0	Feb., 1874	In fair order.
67	Mort & Co	15	do	do	do	13	20	6 .	do	4 0	4 0	4 0	Mar., 1875	, do
68	<u>D</u> o	16	do	do	do	13	20	6	do	4 0	4 0	. 4 0	do	do
69	. <u>D</u> o	17	do	do	do	13	20	. 6	do	4 0	4 0	4 0	July, 1875	do
70	Do	· 18	do	do	do	13	20	6	do	4 0	4 0	4 0	do	In good order.
7 I	Vale & Lacy	Nil.	do	do	do	. 13	20	6	do	4 0	4 0	4 0	do	In fair order.
72	<u>D</u> o	do	do	do	do	13	20	6	do	4 0	4 0	4 0	do	Under repairs.
73	<u>D</u> o	do	do	-₫o	do	13	20	6	do	4 0	4 0	4 0	do	In fair order.
74	Do	do	do	do	do	13	20	6	do	4 0	4 0	4 0	Aug., 1875	do
75	Railway Works	do	Mixed	Tender engine	do		24	6	4 coupled	5 6	5 6	3 9	,, 1876	Under repairs.
76	Do	do	do	do	do	16	24	6	do	5 6	5 6	3 9	April, 1877	In fair order.
77	<u>D</u> o	do	do	do	do	. 17	24	6	do	5 6	5 6	3 9	Sep., 1877	do .
8	Do	do	_do	do	do		24	6	do	5 · 6	5 6	3 9	Dec., 1877	do -
79 30	Beyer, Peacock, & Co	1624	Passenger.	4-wheel bogie and tender	Outside.	18	24	8	do	3 0	5 6	5 6	May, 1877	In good order.
	Do	1625	do	do	do	18	24	8	do	3 0	.5 6	5 6	do	In good order. In fair order.
ı	<u>D</u> o	1626	do	do	do	18	24	8	do	3 0	5 6	5 6	do	
32	Do	1627	do	go	do	18	24	8	do	3 0	5 6	5 6	April, 1877	In good order. do
3 4 5 6	, Do	1628	do	do	do	18	24	8	do	3 0	5 6	5 6	June, 1877	de
4	`Do	1629	do	do ,	do	18	24	8	do	3 0	5 6	5 6	do	In fair order.
5	Do	1630	do	do	do	18	24	8 8	do	3 0	5 6	5 6		In fair order. In good order.
2	Do	1631	do	• do	do	18	24	0	do	. 3 0	5 6	5 6	- 1	In fair order.
7 8	Do	1632	do	do	do	18	24	0	do	3 0	J	5 6 5 6	a	do
٥١	Do	1633	do	do	do	18	24	8	do	3 0	1	J - 1		do
9	73-	1634	do	. do	do	18	24	- 1	do	3 0	5 6	J .	3	In good order.
0	Do	1635	do	do	do	18	24	8	do	3 0.	J 1. 1	9		In fair order.
I	Do	1636	do	do	do	18	24	8	do	3 0	5 6	5 6	Sept., 1877	do
2	D	1637	do	do	_do	18	24	8	do	3 0	5 6	5 6	Aug., 1877	In good order.
3	Do ;.	1643	Goods	Tender engine	Inside	18	24	6	All coupled	4 0	4 0	4 0	Aug., 1077	do
4	Do	1644	do	do	do	18	24	6	do	4 0	4 0	4. 0	do	do
5	Do	1645	do	do	do	18	24	6	go	. 4 0	4 0	4 0	do	Under repairs.
a6	Do :	1646	do	do	do	18	24 .	6	do	4 0	4 0	4 0	αο	onder repairs.

List and Condition of Locomotive Engines and Tenders on 31st December, 1882—continued.

Stock	Makers' Name.	 Makers'	Class.	Description.		Cylinders.		Number of wheels	Coupled or single	Dia	meter of whe	els.	Commenced to	Condition.
No.	Makers Name.	No.	Ciass.	Description.	Position.	Diameter.	Length of Stroke.	on engine.	wheels.	Leading.	Driving.	Trailing.	run.	Condition:
						Inches.	Inches.			ft. in.	ft. in.	ft. in.		
97 98	Beyer, Peacock, & Co	1647	Goods	Tender engine	Inside	18	24	6	All coupled	. 4 0	4 0	4 0	July, 1877	In good order.
	<u>D</u> o	1648	do	do '	do	18	24	6	do	4 0	4 0	4 0	do	In fair order.
99	_ <u>D</u> o	1675	do	do	do	18	24	6	do	4 0	4 0	4 0	do	In good order.
100	Do '	1676	do	do	ob	18	24	6	do	4 0	4 0	4 0	do	Under repairs.
101		1683	do	do	do	18	24	6	do	4 0	4 0	4 0	Nov., 1877	In good order.
102	Do :	1684	do	do	do	18	24	6	do	4 0	4 0	4 0	do	do
103	Stephenson & Sons	2349	do	do	do	18	24	6	do	4 0	4 0	4 0	July, 1879	do
104	Beyer, Peacock, & Co	1686	_do .,.	do	do	18	24	6	do	4 0	4 0	4 0	Nov., 1877	do
105	Baldwin Locomotive Works.		Passenger	4-wheel bogie and tender	Outside	18	24	8	4 coupled	· · · 2 6	5'3	5 3	Oct., 1877.	, ,
106	Beyer, Peacock, & Co	1753	Goods	Tender engine	Inside	18	24	6	All coupled	4 0	4 0	4 0	Aug., 1878	In good order.
107	<u>D</u> o	1754	do	do	do	18	24	6	do	4 0	4 0	4 0	Sept., 1878.	
108	Do	1755	do	do	do	18	24	6		4 o·	40	4 0	do	In good order.
109	, <u>D</u> o	1756	do	do	do	18	24	6	do	4 0	4 0	4 0	do	do ,
110	<u>D</u> o	1757	do	d o	do	18	24	6	do	4 0	4 0	4 0	Aug., 1878	In fair order.
111	<u>D</u> o	1758	do	do	do	18	24	6	do	4 0	4 0	4 0	do	Under repairs.
112	<u>D</u> o	1759	do	do	do	18	24	6	do	4 0	4 0	4 0	Dec., 1878	In good order.
113	<u>p</u>	1760	do	do	do	18	24	6	do	4 0	4 0	4 0	do	do
114	Do	1761	do	do	do	18	24	6	do	4 0	4 0	4 0	do	do .
115	Do	1762	do ·	do	do	_18	24	6	do	4 0	40.	4 0	do	do
116	Do	1763	do	do:	do	18	24	6	do	4 0	4 0	4 0	do	do
117	Do	1764	do	do	do	18	24	6	do	4 0	4 0	4 0	do	
3118	Do	1765	Passenger	4-wheel bogie and tender	Outside	18	24	8	4 coupled	зо.	5 6	5 6	Sept., 1878.	
119	Do	1766	do	do	do ,	18	24	8	do	3 0	5 6	5 6	do	In good order.
120	Do	1767	do	· do	do	18	24	8	do	3 0	5 6	5 6	do	do
121	Do	1768	do	do	do	18	24	8	do	3 0	5 6	5 6	do	do
122	Do	1769	do	do	do	18	24	8 .	do	30	56	. 5 6	do	do
123	Do . .	1770	do	do	do	18	24	8	do	30	5 6	5 6	_ do	do
124	Do	1772	do	do	do	18	24	8	do	30	5 6	5 6	Jan., 1879	do
125	Do	1774	do	do	do	18	24	8	do	`.3 O	5 6	5 6	do	do .
126	Do	1776	do	do	do	18	24	8	do	3 0	5 6	. 56	do	do
127	Vulcan Foundry	833	do	Tank engine	Inside	12	17	6	All coupled	3 0	3 0	3 0	April, 1879	do
128	Do	834	do	do	do	12	17	6	do	30	3 0	3 О	do	go
129	Do	835	do	do	do	12	17	6	do	3 0	3 0	3 0	do	, do .
130	Baldwin Locomotive Co	4395	do	Tender engine and 4-	Outside	18	24	8	4 coupled	2 6	5 3	5 3	do	Under repairs.
1 .	_		-	wheel bogie.	_		}							
131	, <u>D</u> o	4405	Goods	2-wheel bogie and tender	do	20	24	10	8-coupled	26	4 0	4 0	do	In fair order.
132	<u>D</u> o	4414	do	do	do	20	24	10	do	2 6	4 0	4 0.	do	In good order.
133	. <u>D</u> o	4525	do	do	do	20	24	10	do	2 6	4 0	4 0	Sept., 1879.	T- f-i
134	<u>D</u> o	4526	do	do •	do	- 20	24	10	do	2 6	4 0	4 0	do	In fair order.
135	<u>D</u> o	4527		do	do	20	24	10	do	26	4 0	4 0	Aug., 1879	do
130	<u>D</u> o	4528	do	do	do	20	24	ΙÒ	do	2 6	4 0	4 0	Sept., 1879	Under repairs.
137	<u>D</u> o	4529	do	do	do	20	24	10	do	26	4 0	4 0	do	do
138	<u>D</u> o	4530	do	do	do	20	24	10	do	2 6	4 0	4 0	do	do
,139	<u>D</u> o ,	4531	do	do	do	20	24	10	do	2 6	4 0	4 0	Aug., 1879	In fair order.
140	<u>D</u> o	4533	do	do	do	20	24	10	do	26	4 0	4 0	Sept., 1879	Under repairs.
141	Do	4535	do	2-wheel bogie and tender	_do	20 `	· 24	10	do , ,	2 6	4 0	4 0	do	do
- 142	Beyer, Peacock, & Co	1890	_do	Tender engine	Inside	18	24	6	All coupled	4 0	4 9	4 0	Dec., 1879	In fair order.
143	Dubbs & Co	1275	Passenger	4-wheel bogie and tender	Outside	18	24	8	4 coupled	3 0	5.6	5 6	April, 1880	In good order.
144	Do	1269	do	do	do	18	24	8	do	3 0	. 2 .6	. 56	Mar., 1880	In fair order.
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No. 2—continued.

List and Condition of Locomotive Engines and Tenders on 31st December, 1882—continued.

Stock		Maker's				Cylinders.		Number	Coupled or single	Dia	ameter of wee	els.	Commenced	Q 3141 -
No.	Maker's name.	No.	Class.*	Description.	Position.	Diameter.	Length of stroke.	of wheels on engine.	wheels.	Leading.	Driving.	Trailing.	to run.	Condition.
		i]		Taskas	Tacker	1		ft. in.	ft. in.	ft. in.		· .
	D 11: 4 0		D	4-wheel bogie and tender	Outside	Inches.	Inches.	8	4 coupled	1 ,			Mar., 1880	In good order.
145	Dubbs & Co	1270	Passenger	1		18	24	8		3 0	9		a'-	In fair order.
146	Do	1271	do	{ do	do	18	24			3 0	9 1			
147	<u>D</u> o	1272	do	do	do	18	24	8	do	3 0	5 6	5 6	do	do .
148	Do	1273	do	do	do	18	24	- 8	do	3 0	5 6	5 6	do	Under repairs.
149	Do	1274	do	do	do	18	24	8	do	3 0	56	5 6	do	In good order.
150	Do	1276	do	do	do	18	24	8	do	30	56	5 6	April, 1880	do
151	Do	1277	do	do	do	18	24	8	do	3 0	56	5 6	do	do
152	Do	1278	do	do	do	18	24	8	do	3 0	56.	5 6	do	Under repairs.
153	Do	1279	do ·	do	do	18	24	8	do	3 0	5 6	5 6	do	1
154	Do	1285	do	do	do	18	24	8	do	3 0	5 6	5 6	May, 1880	In good order.
	D	1286	do	3	3.	18	24	8	do	3 0	5 6	5 6	do	Under repairs.
155	n .	:1287	ـ د ا	1 .	4.	18		8	3.		5	1 2 2	do	In fair order.
156		1288	a .	ا نید ا	4.	18	24	8	a .	. • 1			do	do
157	Do	1	do				24	8 1	a		U		Sept., 1880	do .
158	Beyer, Peacock, & Co	1909	`do	4-wheel bogie tank engine.	Inside	16	24		αο	3 0	.5 °	5 0	Беры, 1000	uo .
159	До	1910	do	do	do '	16	24	8	do	з о.	5 0	5 0	Aug., 1880	do
160	Do	1911	do	do	do	16	24	8	do	3 0	5 0	5 0	do	do .
161	Do	1912	do	do	do	16	24	8	do	3 0	5 0	5 0	Sept., 1880	do
162	Do	1913	do	do	do	16	24	8	do	3 0	5 0	š o	do	do
163	Do	1914	do	do	do	16	24	8	do	3 0	5 0	5 0	July, 1880	do
164	n	1930	Goods	Tender engine	Outside	16	24	6	All coupled	4 0	4 0	4 0	Sept., 1880.	
165	D. 11. 8. C.		Passenger	4-wheel bogie and tender	٦.	18	24	8		3 0	5 6	5 6	April, 1881	In fair order.
166	l 10 1	1430		l'a_"	a - 1	18		8	ا تد ا				do	in fair order.
	D	1431	do	do	do	18	24	8	3.	,			do	In fair order.
167	Do	1432	do	do			24	8	,	3 0	9 -	9 1	Mar., 1881	do
168	Do	1433	do	do	do	18	24		do	3 0	J -	J -		
169		1434	do	do	do	18	24	8	do	3 0	5 6	5. 6	April, 1881	In good order.
170	Do	1435	do	do	do	18	24	8	do	3 0	5 6	5 6	do	In fair order.
171	Beyer, Peacock, & Co	2060	do .:.	do	do	18	24	8	do	30	5 6	5 6	Nov., 1881	In good order.
172	Do	2061	do	do	do	18	24	8	do	3 0	56	5 6	ob.	do
173	Do	2062	do	do	do	18	24	8	do	30	5 6	5 6	do	do
174	Do	2063	do	do	do	18	24	8	d o	3 0	56	′ 5 6	do	do
175	Atlas Company, Sydney	I	do	do	do	18	24	8	do	3 0	56	5 6	Jan., 1882	In fair order.
17.5	Do	2	do	do	do	18	24	8	do	3 0	5 6	5 6	Mar., 1882	do
177	Do	3	do	do	do	81	24	8	do	3 0	5 6	5,6	Feb., 1882	. go
178	Do	4	do	do	do	18	24	8	do	3 0	5 6	5 6	Mar., 1882	do
179	n			1	do	18	24	8	go	3 0	5 6	5 6	Sept., 1882	In good order.
180	D _a	5 6	do	3	do	18	24	8	مام	3 0	5 6	5 6	Oct., 1882	do
181	n -	-		3.	3.	18		8	a .	١		· ·	Dec., 1882	do .
	l 50	7 8	do			18	24	8				3	do	do .
182	Do		do	do	do	18	24	6		3 0	J -	-	Oct., 1881	In fair order.
183	Beyer, Peacock, & Co	2064	Goods	Tender engine	Inside		24	6	All coupled	4 0	4 0	4 0		
184	Do	2065	do	do	do	18	24	_	do	4 0 1	4 0	4 0	do	In good order.
185	Do	2066	do	do	do	18	24	. 6	do	4 0	4 0	4 0	, do	In fair order.
186	Do	2067	do	. do	do	18	24	6	do	4 0	4 0	46	do	do
187		2068	do	do	do	18	24	6	do	4 0	4 0	4 0	do	do
188	Do	2069	i do	do	do	18	24	6	do '	4 0	4 0	4 0	do	do
189	Do	2070	do	do	do	18	24	6	do	. 40	4 0	. 4 0	Nov., 1881	do ·
190	Do	2071	do	ا م	do	18	24	6	do	4 0	4 0	4 0	do	In good order.
				1 3. 1	_	18		6	do		4 0		April, 1882	do
	1 no 1			1 3.				6	3.		•	'	May, 1882	do
191	Henry Vale, Sydney Do	16 17	do	do do	do	18	24 24		do	4 0	4 0	4 0	April, 1882 May, 1882	

No. 2—continued.

List and Condition of Locomotive Engines and Tenders on 31st December, 1882—continued.

Stock		 laker's	~			Cylinders.		Number of wheels	Coupled or single	Dia	ameter of whee	els.	Commenced	Condition.
No.	Maker's name.	No.	Class. ·	Description.	Position.	Diameter.	Length of stroke.		wheels.	Leading.	Driving.	Trailing.	to run.	Condition.
193 194 205 206 207 208 210 211 212 213 214 215 216 217 218 219 220 255	Do Do Do Do Do Do Do Do	18 19 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2091 2092 2151 2152	Goods do	2-wheel bogie and tend do	do	18 18 18 18 18 18 18 18 18 18 18 18 18 1	Inches. 24 24 26 26 26 26 26 26 26 26	666888888888888888888888888888888888888	All coupled	ft. in 0 0 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	ft. in. 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0 4 0	ft. in. 4 0 0 4 0 0 4 0 0 4 0 0 4 0 0 0 0 0 0 0	July, 1882 do Jan., 1882 do do Feb., 1882 Mar., 1882 Feb., 1882 do Mar, 1882 do do Mar, 1882 do do do do do do do do do do do do Dec., 1882 do	In good order. do do do do do do fo do In fair order. In good order. In fair order. In fair order. In fair order. In fair order. In fair order. do do In good order. In fair order. do do In good order. do do do do do do do do do do

GREAT NORTHERN RAILWAY.

List and Condition of Locomotive Engines and Tenders on 31st December, 1882.

Stock No.	Mahauta	Maker's	M	Description		Cylinders	•	Number	Coupled or single wheels.	Dia	ameter of whee	els.	Commenced	Conditions.
No.	Maker's name.	No.	Class.	Description.	Position.	Diameter.	Length of Stroke.	f wheels on engine.	wheels.	Leading.	Driving.	Trailing.	to run.	Controller.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Fairbairn & Sons Do Do Do Manning, Wardle, & Co Do Do Pete, Brassey, & Betis Manning, Wardle, & Co Do Stephenson & Co Do Do Beyer, Peacock, & Co Do Do	32 42 1544 1545 1546	do do do Goods do Passenger Goods	Tender engine	do do Outside do do	Inches. 16 16 14 15 16 16 18 18 18 18 18	Inches. 24 24 22 20 24 24 20 17 22 24 24 24 24 24 24	666666666666666666666666666666666666666	Coupled	ft. in. 5 5 6 6 6 6 6 6 3 3 3 6 0 6 0 0 6 3 3 3 3 4 4 4 3 3 3 3 3 4 4 3 3 3 3 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	ft. in. 555545660000000999	5 0 4 0 4 0 4 0	do do do Mar., 1856 Mar., 1861 do Jan., 1864 June, 1864 Jett, 1864 July, 1865	do do In fair order. In good order. In fair order. Requires general repai In fair order. In good order.

No. 2—continued.

List and condition of Locomotive Engines and Tenders on 31st December, 1882—continued.

Stock	Maker's Name.	Makers	* Class.	Description.		Cylinders.		Number of wheels	Coupled or single	Dia	meter of whe	els	Commenced	Condition.
No.	Maker's Name.	No.	Class.	Description.	Position.	Diameter.	Length of stroke.	on engine.	wheels.	Leading.	Driving.	Trailing.	to run.	Condition.
						Inches.	Inches.		·	ft. in.	ft. in.	ft. in.		·
17	Manning, Wardle, & Co	9 8	Passenger	Tender engine	Outside	15	20	6	Single	3 6	59	3 6	Mar., 1866	In good order.
18	Mort's Co	8	Goods	Tank engine	Inside	18	24	6	Coupled	4 0	4 ó	4 0	May., 1871	do'
19	Do	9	do	Tender engine	do	81	24	6	αੌο	4 0.	. 4 .0	4.0	do	do
20	Kittson & Co	1620	do	do	do	16	24	6	do	4 0	4 0	4 0	June, 1872	do
21	Vale & Lacy		do	do	do	18	24	6	do	4 0	4 0	4.0	Nov., 1873	In fair order.
22	Do	• • •	do	. do	do	18	27	6	do	4 0	4 0	40	do	In good order.
23	Mort's & Co	12	do	do '	do	81	24	(ε	do	3 9	3 9	3 9	July, 1874	
24	Do	14	do	do	do	18	24	6	do	3 9	3 9	3 9	Aug., 1874	•
25	Do	11	do	do	do	18	24	6 .	do	5 5	3 9	3 9	June, 1875	do
26	Do	13	do ∴.		do	18	24	6	do	3 9	3 9.	3 9	l do	
27	Beyer, Peacock, & Co	1620	Passenger.	. do	1	18	24	6	do	1 1 1	5 9	. 5 9	July, 1877	Requires general repai
28	Do	1621	do	do	√do	18	24	6	do	3 0	5 6	5 6	Aug., 1877	In good order.
29	Do	1622	do	do	do	18	24	6	do ,	3 0	5 6	5 6	do	do
30	Do	1623	do	do	do	18	24	6:	: do	1	5 6	5 6	do	do
31	Do	1677	Goods	do'	Inside	18	24	. 6	do,	1 7	4 0	4 0	Oct., 1877	In fair order.
32	Do	1678	do	do	do	18	24	6	do	4 0	4 0	4 0	do '	do
33	Do	1679	do	do	do	18	24	6	do	4 0	4 0	4 0	do	In good order.
34	Do	168ó	do	do	do	18	. 24	6.	· do	4.0	4 0	4 0	do	In fair order.
35	Do	1891	do	1 1	do	18	24	6	do	4 0	4 0	4 0	Sept., 1877	In good order.
36	Do	1682	do	do	.do	18	24	6	do	1 4 0 1	4 0	4 0	do	In fair order.
	До	1771	Passenger.	do	Outside	18	24	8:	do	3 0	5 6	5 6	Feb., 1879	do
37 38	Do	1773	do "	do •	do	18	24	8	do	3 0	5 6	5 6	do	In good order.
39	Do	1775	do	do	do	18	24	8	do	3 0	5 6	5 6	do	In fair order.
40	Do	1887	Goods	do	Inside	18	. 24	6 1	do	1 4 0	4 0	4 0	Feb., 1880	do
41	Do ,	1888	do	do	do	18	24	6	do	4 0	4 0	4 0	do	In good order.
42	Do	1889	do	do	do	18	24	6	do	4 0	4 0	4 0	do	In fair order.
43	Do	1806	do	do	do	18	24	6	do	4 0	4 0	4 0	May, 1880	do ·
44	· Do	1807	do	do	do	. 18	24	6	do	4 0	4 0	4 0	June, 1880	do
45	Do	1808	do	do	do	18	24	6	do	4 0	4 0	4 0	Aug., 1880	In good order.
46	Do	1899	do	do	do	18	24	6	do	4 0	4 0	4 0	do	do
47	Dubs & Co	1280	Passenger.	do	Outside	18	. 24	. 8.	do	3 0:	5.6	5 6	Dec., 1880	do
48	Do	1281	do	do	J.,	18	24	8	da	3 0	5:6		do	In fair order.
49	Do	1282	do′	do	1	18 .	24	8	do	3 0	5 6	5 · 6 5 · 6	Jan., 1881	do
50	Do	1283	do	do	٠ ١ ١	18	24	8	do	3 0	5 · 6	5 6	do	In good order.
51	Do	1284	do	do	do	18	24	8	do	3 0	5 6		Feb., 1881	do
- 1								, .		(2 9)	· ·	.0 .	· ·	
5 ²	Beyer, Peacock, & Co	2087	Goods	dn	do	18	26	8:	do	14.05	4 0	4 0	May 1882	do
53	Do	2088	do,	do	do	18	: 26	. 8.	do	$\left\{ \begin{array}{cc} 2 & 9 \\ 4 & 0 \end{array} \right\}$	4 . 0	4 0	do	do
54	Do	2089	do	do	do	18	26 [°]	8	do	{2 9 } {4 0 }	4 0	4 0	do	do
55	Do	2090	do	do	do '	18	. 26	. 8	do	{2 9} {4 0}	4 0	4 0	do do	do 、

I have, &c.,
THOS. MIDELTON,
Acting Locomotive Engineer.

No. 3.

Dates of Opening, and the length in miles of the different sections of Railway Lines, from the commencement to 31 December, 1882.

Date of opening.	To where opened.	Southern Line.	Western Line.	Northern Line.	All Lines.
26 Sept., 1855 26 Sept., 1856	Parramatta	14 9	••••••	*******	14 9
	Total, 1856	23			23
5 April, 1857	East Maitland			17	17
	Total, 1857	23	**********	17	40
19 Mar., 1858 17 May, 1858 27 July, 1858	Newcastle Campbelltown West Maitland	12	********	2	I I2 2
	Total, 1858, 1859	35		20	`55
2 July, 1860 4 July, 1860	Lochinvar Blacktown		8	7	7.
	Total, 1860	35	8	27	70
12 Dec., 1861	Rooty Hill	********	3	••••••	3
n	Total, 1861	35	11	27	73
24 Mar., 1862	Branxton	•••••	5 .	8	8 5
7 July, 1862 1 Sept., 1862	Penrith	6	5		5 6
. ,	Total, 1862	41	21	35	97
7 May, 1863	Singleton Picton				14 13
	Total, 1863	54	21	49	124
2 May, 1864 1 Dec., 1864	Morpeth		16	3	3 16
	Total, 1864, 1865, 1866	54	37	52	143
1 Mar., 1867	Mittagong Weatherboard	24	 28		· 24 28
2 Dec., 1867	Sutton Forest	9			9
	Total, 1867	87	65	52	204
1 May, 1868 6 Aug., 1868	Mount Victoria	28	15		15 28
:	Total, 1868	115	80	52	247
19 May, 1869 27 May, 1869	Muswellbrook Goulburn	20		31	31 20
18 Oct., 1869	Bowenfels		20		20
	. Total, 1869	135	100	83	.318
1 Mar., 1870	Wallerawang		8 [,] 6	••••••	· 8
20 Oct., 1870	Aberdeen	······		7	7
	Total, 1870	135	114	90	339
17 April, 1871	Scone			9 10	9
ı	Total, 1871	135	114	109	358

No. 3—continued.

Date of opening.	To where opened.	Southern Line.	Western Line.	Northern Line.	All Line
	Total, 1871	135	114	109	358
I Jan., 1872	Sidings, Collingwood, &c	1		. 1	2
5 April, 1872 22 April, 1872	Murrurundi Locke's Platform		·····	14	14
1 July, 1872	Macquarie Plains		19		19
			5		5
	. Total, 1872	136	138	124	398
4 Mâr., 1873	Raglan		5		5
	Total, 1873, 1874	,136	143	124	403
4 Feb., 1875	Kelso		,		
9 Nov., 1875	Gunning	31	3		31.
	Total, 1875	167	146	124	437
4 April, 1876		*********			
3 July, 1876	Bowning	29	`		2 29
1 Nov., 1876	Binalong	14		•••••	14
2 2.01, 10/0		••••••	27		27
	Total, 1876	210	175	124	509
12 Mar., 1877		20	*******	ļ	20
19 April, 1877 13 Aug., 1877	Orange		20	`	20
I Nov., 1877	Cootamundra	25	******	24	24
	, .				25
- 4 - 1 - 0 0	Total, 1877	² 55	195	148	598
2 April, 1878 15 April, 1878	Bullock Island Branch Bethungra	••••••	••••	11/2	11/2
6 July, 1878	Junec	15 18	*******	••••••	15 18
3 Sept., 1878	North Wagga Wagga	18			18
14 Oct., 1878	Tamworth	••••••	••••••	38	38
•	Total, 1878	306	195	187½	688½
25 Mar., 1879	Breeza			15	15
1 Sept., 1879 11 Sept., 1879	South Wagga Wagga	5	******		5 26
.т веры, 10/9	Gunnedah			26	26
•	Total, 1879	311	195	228½	7341
1 June, 1880	Wellington		56	***	56
1 Sept., 1880	Gerogery	59			59
	Total, 1880	370	251	228 1	· 849}
1 Feb., 1881	Dubbo		20		
3 Feb., 1881	Albury	18			30 18
8 Feb., 1881 1 Sept., 1881	1 =	60			60
- Jopes, 1001					38
	Total, 1881	486	281	228}	995½
9 Jan., 1882	Maanhi	ļ	ļ	ļ	,
I Mar., 1882	Carathool	24		12	12
5 May, 1882	Capertee	34	23		34 23
4 July, 1882 1 July, 1882	Hay	34	-3		34
2 Aug., 1882	Boggabri Uralla	•••		24	24
ı Oct., 1882		***********		51 32	51 32
o Oct., 1882			63		63
•	Total, 1882	554	367	347½	1,2681
		224 .	35/	34/2	-,2002

APPENDIX TO REPORT ON KAILWAYS-1882.

No. 4.—Table A.

Abstract of the total Quantity and Cost of Land taken for Railway Purposes to the 31st December, 1882, under the Government Railways Act of 1858.

	1		Quantity	taken.						Amount	paid.		Probable	•	Rat	е.
Railway Lines.	Length.	Pri	vate.	Cro	wn.	To	tal.	Amount claimed.	For Land and Buildings.	Severance.	As costs of, Arbitration.	Claimants' Costs on Conveyances.	Amounts to be paid.	Total Cost.	Per Mile of Line.	Per Acre.
GREAT WESTERN LINE. Granville to Bathurst Bathurst to Orange Orange to Dubbo Dubbo to Nyngen Nyngen to Bourke Wallerawang to Mudgee Richmond Branch	Miles chns. 131 30 47 75 85 25 99 49 125 49 84 54 16 11	1,337 608 337 38 	r. p. 3 35 0 18 ¹ / ₃ 1 2 2 31 	1,600 141 899 2,325 3,175 1,162	2 21 3 9	2,938 749 1,237 2,364 3,175 1,889	2 39 ¹ / ₃ 0 11	£ s. d. 83,137 15 4 37,439 11 0 34,336 6 6 2,987 10 0 25,029 7 5 8,057 16 8	£ s. d. 38,418 11 2 12,445 9 9 12,522 6 9 1,324 6 11	£ s. d. 5,788 8 5 2,100 9 9 1,324 19 3 7 6	£ s. d. 37 16 6 910 7 11 165 2 0	419 8 5	£ s. d. 502 11 5 1,445 3 0 2,164 0 0 330 1 0			£ s. d. 34 II 5 28 9 8 49 I5 3½ 46 7 9
Total, Great Western	590 544	3,176	3 I412	9,322	3 164	12,499	2 303	190,988 6 11	71,657 1 1	11,275 9 2	1,113 6 5	3,114 15 7	14,334 1 3	101,494 13 6	171 16 61/2	31 18 11½
GREAT NORTHERN LINE. Newcastle to Murrurundi Murrurundi to Tamworth Tamworth to Uralla Uralla to Glen Innes Glen Innes to Tenterfield Morpeth Branch Bullock Island Branch	63 44 78 36 57 454 3 352	503 431 580 293 34	2 5 1 16 1 3½ 3 37 3 36½ 3 22½ 2 18½	380 253 1,118 737	2 15\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	884 684 1,699 1,031 36	0 20 ³ / ₄ 0 14 3 36 ¹ / ₄ 0 22 2 23 ¹ / ₂ 2 11 1 11 ¹ / ₃	168,938 I II 14,134 6 7 45,969 4 4 36,638 I5 2 	57,731 11 3 5,002 6 10 18,117 12 6 4,615 17 7 18,088 0 9 9,465 16 3	9,296 11 11 1,740 11 8 2,560 3 4 1,255 12 6	15 15 0	154 19 6 466 16 1	1,494 0 1 239 10 7 3,003 12 11 8,111 19 7 5,215 13 4 62 17 11	71,015 1 10 7,153 3 7 25,669 7 3 14,454 9 1 5,215 13 4 20,631 19 0 9,783 11 2	114 10 104 403 18 53 184 5 0 90 12 1 5,991 2 7	48 I 34 14 4 23 59 10 43 24 17 7 17 14 10 591 7 2 498 14 23
Total, Great Northern.		3,341	2 1912	2,873	0 394	6,214	3 18 <u>5</u>	312,727 14 10	113,021 5 2	16,359 15 8	3,285 19 10	3,128 10 2	18,127 14 5	153,923 5 3	398 8 64	46 I 3
GREAT SOUTHERN LINE. Sydney to Granville	54 21 64 55 55 35 77 49	1,312 549 469 210 591 47	0 30½ 0 4 1 12½ 0 16 3 21 3 10 1 25¾ 3 7		0 3. 3 3 ² 2 35 3 14 3 37 0 12	1,991 776 980 777 1,228 47	0 33½ 3 36 0 7½ 3 30 3 18 3 22 1 25¾ 0 10	40,920 3 2 79,997 3 0 42,389 3 9 15,951 9 3 12,266 9 6 60,847 4 0 33,526 10 0	23,047 14 6 33,865 10 0 16,314 17 2 4,953 17 5 7,501 1 0 21,044 2 4	1,281 9 1 7,295 2 10 2,482 10 3 561 19 1 798 0 10 6,428 6 4	317 13 6	5 264 8 5 1,416 14 11 596 17 5 184 8 0 235 11 11 310 15 6	3,804 8 7 3,043 3 6 1,103 0 0 1,138 8 10 194 12 10 1,120 0 6 12,800 0 0 13,607 17 11	46,337 11 6 20,814 18 2 7,014 3 10 8,729 6 2 28,903 4 6 12,800 0 6	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	35 6 44 37 17 10 14 19 02 41 7 104 48 16 94
Total, Great Southern.	405 384	.3,644	2 6 3	2,782	3 16	6,427	I 22 ³ / ₄	285,898 2 8	106,727 2 5	18,847 8 5	1,851 7 9	3,008 16 2	36,811 12 2	167,246 6 1	412 9 4	45 17 9½
DARLING HARBOUR BRANCH. Sydney to Darling Harbour	1 112	16	3 5			16	3 5	53,186 0 0	45,088 15 0		348 15	300 14 0		45,738 4	39,989 13 74	2,725 11 03
NORTH-WESTERN LINE. Werris Creek to Gunnedah Gunnedah to Narrabri	. 41 22 . 55 43		1 31 0 30	391 1,406	2 24 2 10	797 1,642	0 15 3 0	10,242 11 7 5,280 1 10	5,780 19 11 1,654 19 9		6 697 11 0	45 13 6	1,158 11 3 1,105 6 11		194 16 9 1 59 0 8 1	13 17 71
Total, North-Western.	. 96 55	641	2 2 1	1,798	0 34	2,439	3 15	15,522 13 5	7,435 19 8	747 13 6	816 19 4	56 1 6	2,263 18 2	11,320 12	116 18 8	17 12 10½
South-Western Line. Junce to Narrandera Narrandera to Hay			3 3 ² 2 3 ²	1,314 635	2 24 2 30	1,425		5,819 12 11	1,628 6 3 4,420 2 8	205 10 0 4,409 10 0	o	39 0 8	1,275 15 0	3,148 11 1	95 2 2½	19 12 103
Total, South-Western	. 168 10	627	2 24	1,950	1 14	2,577	3 38	22,536 12 11	6,048 8 11	4,615 0		39 o 8	2,596 10 0	13,298 19	79 1 113	21 3 94
SOUTH COAST RAILWAY. Sydney to Wollongong and Kiama.	. 24 18	218	2 22½	108	o 14½	. 326	2 363	174,081 18 8	\				99,973 I 9	99,973 '1	4,126 6 54	457 4 113
Total on all Lines to 318 DECEMBER, 1882	т 1672 64	11,667	7 2 32 5	18,835	2 14 1	30,503	1 63	1,054,941 9 5	349,978 12 3	51,845 6 9	7,416 8	9,647 18 1	174,106 17 9	592,995 3	354 9 101	50 16 5 3

No. 4—continued.

Table B.

Abstract of the total Quantity and Cost of Land taken for Railway purposes to the 31st December, 1882, under the Public Railways Land Resumption Act of 1874.

N				Amoun	ts paid.		Probable		Ra	te.
Railway Lines.	Length.	Quantity taken.	For Land	For Improvements.	Costs of Appraisement	Claimants' Costs on Conveyances.	Amounts to be paid.	Total Cost.	Per Mile.	Per Acre.
GREAT WESTERN LINE.	Miles chns	a. r. p.	£ s. d.	£ s. d.	£ s. d	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Orange to Dubbo	85 25½ 99 49¼ 125 49 84 54	7 1 29 60 2 26 6 0 0 117 0 2		······· ···· ·· · · · · ·			14 17 2 144 0 11 12 0 0 838 12 9	14 17 2 144 0 11 12 0 0 838 12 9	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Total, Great Western	395 17.4	191 0 17					1,009 10 10	1,009 10 10	2 II I	$\frac{}{5}$ 5 $7^{\frac{3}{4}}$
South-western Line.										
Junce to Narrandera Narrandera to Hay	61 32 3 106 57 3	247 0 16½ 1,240 3 31	57 15 11	557 .0 0		30 17 0	.426 2 9 4,196 11 8	1,071 15 8 4,196 11 8	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4 6 9 3 7 7½
Total, South-western	168 103	1,488 o 7,½	57 15 11	557 0 0		30 17 0	4,622 14 5	5,268 7 4	31 6 81/4	3 10 93
GREAT NORTHERN LINE.										
Tamworth to Uralla Uralla to Glen Innes Glen Innes to Tenterfield	63 44 • 78 36 57 45‡	184 3 3 130 1 23 34 1 7					436 0 0 296 8 9 68 12 0	436 0 0 296 8 9 68 12 0	6 17 2½ 3 15 7 1 3 10	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Total, Great Northern	199 45 1	349 ^I 33					801 0 9	801 0 9	4 0 34	2 5 104
North-western Line.										
Gunnedah to Narrabri	55 43	105 0 30					240 16 6	240 16 6	4 6 83	2 5 9½
South Coast Railway.	•									
Sydney to Wollongong and Kiama	24 18 1	29 3 14		•••••			59 13 6	59 13 6	2 9 31/4	2 0 0
Total on all Lines	842 543	2,163 2 21½	57 15 11	557 0 0		30 17 0	6,733 16 0	7,379 8 11	8 15 13	3 8 21/2

No. 5.

RETURN OF PERMANENT-WAY MATERIAL, RAILS FOR RENEWALS, AND MISCELLANEOUS ARTICLES IMPORTED DURING THE YEAR ENDING 31st DECEMBER, 1882.

. Da'e	Name of Ship		Rai	s		Fishplates.	Во	lts and Nuts.		Spikes.		Screws.	Name of Contractor.	Rate	Invoice Cost	Freight.	English	Colonial	Total Cost	Cost	Prite
of Invoice	Name or Snip	No.	To	nnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	Name of Contractor.	per ton.	Invoice cost	Freight.	Charges.	Charges.	10th Cost	per ton.	of Arrival.
				Inder	t for	Permane	ıt-way	Material,	with	the necess	sary	Fastenings	, exclusive of Spik	es, for t	the Exten	sion—Du	ibbo to B	ourke.			
1881. 22 Sept .	Moel Rhiwan	625	T 156	c. q 1bs l6 3 26		T. c. q. lbs	·	T. c. q lbs		T. c. q. lbs.		T. c. q. lbs	Steel, Tozer, & Hampton (Limited).	£ s. d.		£ s. d. 78 8 6	£ s. d. 8 13 4	£ s. d. 31 5 5	£ s. d. 1096 14 2	£ s. d. 6 19 10	1882. 22 Jan.
29 ,,	Centurion	606	150	9 3 22			٠						Charles Cammell & Co. (Limited).	6 8 6	966 18 10	-75 5 0	8 6 5	23 19 9	1074 10 0	7 2 9	15 ,,
29 ,, . 6 Oct 24 Sept .	Forfarshire Lamington British Yeoman	603 1630 1564	400	8 0 2 2 2 26 10 3 23					·· :		::		Guest & Co		966 6 6 2400 16 5 2460 19 10	75 4 0 360 2 6 197 5 6	8 6 5 21 16 11 21 10 11		1073 15 10 2860 16 4 2702 17 6	7 2 9 7 3 0 6 17 0	13 ,,
5 July 5 ,, 24 Oct.	Cochrina Rosedale	3190	٠.	6 3 3			85212 	48 12 0 0			226460	101 8 0 0	(Limited). Patent Nut & Bolt Co Charles Cammell & Co.	17 0 0 13 10 0 6 3 6		69 19 7 33 10 9 713 12 4		39 2 6 15 5 10 158 15 1	1851 13 2 712 4 4 5858 7 3		12 ,,
25 ,, · 25 ,,	Kinross Midlothian	8137 576		0 2 17 6 1 13			:		:		::		(Limited). Guest & Co Steel, Tozer, & Hampton (Limited).	6 0 0 6 4 9	12000 3 11 900 3 8	1879 0 7 72 3 2		276 4 10 14 6 6	14264 1 6 994 13 2	7 2 8 6 17 10	2 Feb. 16 Jan.
31 ,, 16 Nov 25 Oct.	Formosa Glenavon . Northumberland	285 5636 415	1431	17 3 1 11 3 15 8 2 27					 		::		Charles Cammell & Co.	5 19 0		35 18 10 1345 13 1 62 15 6	78 9 5	14 4 9 346 1 11 16 5 11	502 15 5 10288 4 1 729 19 10	6 19 11 7 3 9 7 5 4	26 April.
	Av.emore Eaton Hall . Larnaca . Cordillera Ettrickdale	406 1198 406 4864	300 100 1200	3 2 26			85212 	48 12 0 0	 		226460 	101 8 0 0	Guest &c Patent Nut & Bolt Co Charles Cammell & Co.	6 8 6 6 8 6 6 0 0 17 0 0 13 10 0	642 16 3 7201 2 5 1723 16 0 656 2 0	50 2 5 225 0 3 50 0 6 1127 13 7 70 0 0 33 10 4 150 5 0	5 12 0 16 8 6 5 11 10 65 3 7 18 15 2 7 5 8 16 9 9	47 12 2 15 18 9 287 12 6 27 10 11 11 12 0	716 0 5 2141 12 11 714 7 4 8681 12 1 1840 2 1 708 10 0 2145 15 11	7 2 9 7 4 8 18 2 11 14 11 7	5 ", 18 ", 18 ",
17 ,, 17 ,, . 29 ,, 28 ,, .	Liguria ., . Aneiley	390 429 422	105 1	6 3 6 2 0 23 8 0 12	8172	40 2 2 12		: ·· ·	·		••		Ebbw Vale Steel, Iron, &	6 8 6 6 8 6 6 8 6 7 15 0	618 19 8 678 10 11 641 17 10 311 0 2	60 4 4 66 0 2 62 8 9 52 16 5	5 6 5 5 16 3 5 10 4 2 8 6	16 8 8 15 11 3	699 10 7 766 16 0 725 8 2 373 8 8	7 5 2	27 ,,
6 Dec	Liguria	799	203	5 0 4			.						Steel, Tozer, & Hampton (Limited).	6 4 9	1267 15 8	127 0 8	11 3 7	31 6 6	1437 6 5	7 1 2	27 Jan.
3 ,, . 8 ,, 9 ,,	Anerley Buttermere Bargany	800 5648 1204	1397	0 1 19 19 2 15 13 2 16				·			 :		Guest & Co	6 4 9 6 4 9	1272 11 7 8387 17 10 1919 3 4	127 10 3 1348 1 11 153 16 10		32 9 11 336 2 11 48 19 10	1443 16 3 10148 1 11 2138 16 10	7 5 2	18 Mar. 20 April.
	Charlotte Croom	411		1 2 11				· ····· ··			••		Charles Cammell & Co (Limited).		643 0 2	50 0 10	5 11 10	1	714 15 4	7 2 11	"
29 ,,	Mirzapore Scottish Bard S S Rosetta	407 416		4 0 18 5 3 5	S172	40 2 2 12			 				Ebbw Vale Steel, Iron, &	686	643 16 9 644 7 2 311 0 2	62 12 7 50 2 11 52 16 6	5 11 10 5 12 1 2 7 6		728 3 11 716 5 1 372 14 2	7 2 10	
29 Nov	,, .	172	40	7 3 9			.						Charles Cammell & Co. (Limited)	686	259 10 4	25 5 0	2 7 3	6 0 2	293 2 9	7 5 2	10 ,,
15 Dec	,,	187	47]	5 3 10									Steel, Tozer, & Hampton (Limited)	}	298 1 11	29 17 6	2 15 3	6 19 9	337 14 5	7 1 5	"
26 Nov	Alpheta	4963	1201 1	.3 0 0			•						Charles Cammell & Co (Limited).	1	7420 3 9	1188 7 7	65 8 9	293 6 7	8967 6 8	i	24 April.
6 ,,	Assam Aethelbert Cuba	::			8172	40 2 2 12	41028	23 8 0 0			 109210 62310		Ebbw Vale Steel, Iron, & Coal Co. Patent Nut & Bolt-Co.			52 16 6 30 7 6 14 10 8 17 8 9 8 5 5	2 7 5 9 2 1 3 10 10 5 4 11 2 1 3	13 6 1 5 11 8 7 11 10	372 13 5 884 1 8 339 11 2 504 11 6 195 16 4	14 10 3 18 1 8 14 10 1	20 April.
25 Nov. 25 ,,	Deva Celestial Empire	:					20514	11 14 0 0	::		54940 151085		"	16 17 6 13 7 6 17 0 0 13 10 0	415 2 6 156 9 9 1150 1 0	15 5 8 7 5 3 42 0 8 20 2 2	4 11 3 1 16 6 12 10 4	6 13 10 2 16 0 18 7 8	441 13 3 168 7 6 1222 19 8 470 2 9	17 19 1 14 7 10 18 1 8	15 ,, 15 ,, 1 May.

37 19 1 125 14 6 4225 2 8

APPENDIX TO REPORT ON RAILWAYS-1882.

Date			Rails.	1	Fishplates	Bol	its and Nuts.		Spikes.		Screws.	Yana at Cart at	Rate	Tumple - Oc. 1	The i-b	English	Colonial	Total Cost.	Cost	Date
Invoice	Name of Ship	No.	Tonnage.	No	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	Name of Contractor.	per ton.	Invoice Cost	Freight.	Charges.	Charges.	Total Cost.	per ton.	of Arrive
			Indent for	Pern	nanent-way	Mat	terial, with	the	necessary 1	Faste	nings, excl	usive of Spikes, fo	r the E	xtension,	Dubbo to	o Bourke	-contin	ued.		
1882. 9 Jan	Chimbonazo.	1169	T c. q. lbs 297 6 3 19	'	T. c. q. lbs		T c q lbs.		T. c. q lbs		T. c. q. lbs	Steel, Tozer, & Hampton (Limited)	£ s. d. 6 4 9	£ s d. 1854 13 10	£ s. d. 167 5 1	£ s. d 16 5 7	£ s. d.	£ s. d. 2079 3 3		1882. 7 Marci
9 ,, 4 ,, .	Shannon Celestial Empire	1053	268 6 2 2	33516	164 11 3 0	·:						Ebbw Vale Steel, Iron.	6 4 9 7 15 0	1673 13 8 1275 11 1	150 18 8 97 9 10	14 14 2 9 3 11	38 16 0 29 9 0	1878 2 6 1411 13 10		12 ,, 1 May.
1 Feb .	Hereford	1220	305 0 1 21									and Coal Company. Steel, Tozer, & Hampton	6 4 9	1902 11 6	133 8 11	16 14 11	45 7 3	2098 2 7	6 17 7	23 Apri
28 Jan 1 Feb 30 Jan. 23 ,, .	John Elder Sorata Clyde Woodburn Ardmillan Victoria Regina	1647 1190 1832	396 7 3 10 290 13 2 24 438 16 2 23		95 9 1 4 95 9 1 4	21556	12 5 3 15					(Limited). "," Ebbw Vale Company . Patent Nut & Bolt Co.	6 4 9 6 4 9 6 4 9 7 15 0 7 15 0 13 10 0	2737 4 7 739 16 11 739 16 11 165 19 5	222 19 5 164 11 3 246 16 10 56 11 0 56 10 11 6 12 10	21 12 10 15 18 5 23 18 11 5 8 1 5 8 2 1 17 9	66 5 11 17 1 3 17 1 4 2 18 5	2777 8 8 2035 17 10 3074 6 3 818 17 3 818 17 4 177 8 5	8 11 7 8 11 7 14 8 6	19 March 30 ,, 24 ,, 7 June. 2 ,,
4 ,, . 1 ,, 3 April 8 ,, 3 June	Thermopy læ Hereward Thessalus America	7065	1732 7 2 24	19440 14148 36000	95 9 1 4 69 9 2 24 176 15 2 14	··· ·· ·		::		54535	24 8 1 13	Ebbw Vale Company "" Steel, Tozer, & Hampton (Limited).	17 0 0 7 15 0 7 15 0 7 15 0 7 15 0 5 19 0	415 2 3 739 16 11 538 8 11 1370 1 9 10307 13 11	16 3 3 56 10 10 37 9 10 95 8 2 1689 1 6	4 12 0 5 8 2 3 16 1 7 10 3 73 0 0	6 13 0 17 1 4 12 9 11 31 3 5 401 12 6	442 10 6 818 17 3 592 4 9 1504 3 7 12471 7 11	8 11 7 .8 10 1 8 10 2	17 ,, 2 ,, 10 Aug. 29 July. 13 Oct.
26 July.	Pizarro	8658	2039 6 1 25									,,	5 19 0	12133 19 6	1988 7 0	85 5 11	495 14 11	14703 7 4	7 4 2	14 Nov.
		71450	17575 10 3 2	0 166500	817 12 3 2	334000	190 9 3 15			885000	396 5 1 13	-		122730 10 4	15557 1 7	1059 14 9	3777 0 4	143124 7 0		
Ind 1881. 30 Aug. 12 Oct 1 Nov.	Orchomene . Ann Duthic . Ellerbank .	1	217 10 2 17 128 18 1 24 210 5 0 11		, with the	neces	sary Faste	nings 	o, exclusive	of S_1	pikes, for t	he Extensions; Was West Cumberland Iron & Steel Co. Bolckow, Vaughan, & Co. West Cumberland Iron & Steel Co.	5 17 6	1278 0 0 829 18 10 1235 5 0	244 14 6 64 9 3 236 10 8	12 0. 2 7 3 2 11 14 5	32 17 5 25 18 10 32 15 1	1567 12 1 927 10 1 1516 5 2	$ \begin{vmatrix} 7 & 4 & 1\frac{1}{2} \\ 7 & 6 & 1\frac{1}{2} \\ 7 & 4 & 3 \end{vmatrix} $	1882. 2 Jan. 26 ,, 16 Mar.
6 Oct. 1 Nov. 2 Dec 1882.	Isle of Erin Bellaport S. S. Rosetta	1128 1128 137	252 0 3 0 252 0 3 0 34 19 2 20				· ··· · ·					Ebbw Vale Steel, Iron, & Coal Co	5 17 6 5 17 6 6 10 0	1480 14 5 1480 14 4 227 7 11	283 10 10 283 10 10 21 17 4	13 18 9 13 18 9 2 1 9	39 5 8 39 5 1 14 0 0	1817 9 8 1817 9 0 265 7 0	7 4 3 7 4 3 7 11 8	25 ,, 26 ,, 10 Feb.
2 Jan 1881.	Illawarra	2339	525 13 0 7							.		West Cumberland Iron & Steel Co.	5 17 6	3088 4 0	591 7 3	28 16 4	81 17 4	3790 4 11	7 4 3	1 May.
8 Sep.	Duchess of Argyle		723 19 0 0		<u> </u>				<u> </u>	<u></u>	<u> </u>	,,	5 17 6	4253 2 8	814 8 7	39 7 3	39 5 10	5146 4 4	- l	7 Jan.
		9985	2345 7 1 23											13873 7 2	2540 9 3	129 0 7	305 5 3	16848 2 3		
-	-				Indent f	or Pe	rmanent-w	ay M	Iaterials fo	r Rei	newals, Gr	eat Northern Rail	way, Se	ptember 1	6th, 1881	ι.				
1882. 1 Mar 4 Feb 4 ,,	Cotopaxi Vittoria Regina. Cuzco	1221 421 408	307 12 2 18 101 19 0 17 99 13 3 7	l		.: ::				,. 		Guest & Co	6 10 0 6 10 0 6 10 0	662 14 6	173 0 11 44 12 1 56 1 6	16 16 9 5 13 11 5 11 6	45 8 3 6 5 9 14 18 2	2234 18 2 719 6 3 724 10 11	7 5 3 7 1 1 7 5 4	1882. 27 April 17 June. 16 April
:		2050	509 5 2 14	-				·						3310 6 6	273 14 6	28 2 2	66 12 2	3678 15 4	<u> </u>	
					Indent f	or Po	ermanent-v	vay I	Aaterials fo	or Re	newals, G	reat Northern Rail	way, N	ovember 1	L5th, 1881	1.				
1882. 20 April 3 May	Liguria Garonne	1184 616	300 10 1 9 146 15 0 2			.:		:				Guest & Co	6 7 6 6 7 6	1	ì	16 9 0 8 2 5	45 0 3 21 7 10	2146 5 11 1047 11 11	7 2 10 7 2 10	1882. 7 June. 28 ,,
13 ,, 28 April. 28 ,,	C. Thompson . Hallow'een	 				10000	6 0 0 0	28013	16 7 0 0	14000	Chairs. 162 8 2 0	Head, Wrightson, & Co. Phœnix Bolt & Nut Co	3 10 6 15 0 0 12 10 0	572 11 0 90 0 0 204 7 6	79 3 8 3 6 9 9 1 10	5 17 6 2 5 9 5 4 5	54 1 10 1 10 2 3 14 5	711 14 0 97 2 8 222 8 2	15 3 9	9 Sept.
••	l "	I		-			<u> </u>		l	!		,,				}	 		4	1

...... 10000 | 6 0 0 0 28013 | 16 7 0 0 14000 | 162 8 2 0

. No. 5-continued-Return of Permanent-way Material imported during 1882.

No. 5—continued—Return of Permanent-way Material imported during the year 1882.

Date	Name of Ship.	_	Rails		Fishplates.	Bol	ts and Nuts.		Spikes.		Screws.	Name of Contractor.	Rate	Invoice Cost.	Freight.	English	Colonial	Total Cost	Cost	Date
of Invoice	- Simp	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	Name of Contractor.	per ton.	Invoice cost.	Freigns.	Charges.	Charges.	10tal Cost	per ton.	of Arrival.
			Indent	for P	ermanent-w	ay M	aterials for	r 65 1	miles of Ro	oad 21	ıd Sidings,	for Extension—G	unne!a	h to Narra	bri, 15th	Decembe	er, 1880.	•	'	
1881. 18 Oct 18 ,, .	Moel Rhiwan		T c. q. lbs	3.	T. c. q. 1bs.	85 <u>2</u> 12	T. c q. lbs.			226460	T. c. q. lbs. 101 8 0 0	Patent Nut & Bolt Co	£ s 17 0 0 13 10 0	£ s. d. 1723 16 0 656 2 0	£ s. d. 83 19 7 40 4 9	£ s. d. 18 15 1 7 5 9	27 8 8	£ s. d. 1853 19 4 714 1 6	£ s. d. 18 5 8 14 13 9	1882. 23 Jan. 23 ,,
14 Jan.	W. D. Leeds	l	1027 16 3 17									Ebbw Vale Steel, Iron, & Coal Co.	600	6167 1 5	1016 2 7	55 19 6	144 2 2	7383 5 8	7 3 8	17 May.
21 ,, 21 ,, 12 ,, . 12 ,, . 12 ,, . 12 ,, . 26 ,, .	Devockwater '' '' '' Cashmere	5569 7078	1733 13 1 8	12060	59 4 1 24	16893 17095	9 12 2 21 9 15 0 0	: , : , : . : .		46640 46900	20 17 2 19 21 0 0 0	Patent Nut & Bolt Co "" Ebbw Vale Steel, Iron,	6 0 0 7 5 0 17 0 0 17 0 0 13 10 0 13 10 0 6 0 0	357 0 0	1345 7 3 62 7 3 23 1 3 23 3 9 10 13 0 10 15 4 1730 9 1	74 7 8 3 8 5 3 18 2 3 18 7 1 9 5 1 9 0 94 2 8	8 10 5 3 2 0 3 2 7	9922 4 9 505 7 9 390 9 6 392 12 9 145 5 8 146 19 5 12476 2 3	7 5 1 8 10 8 18 13 11 18 13 11 15 1 6 15 1 6 7 3 11	2 ,,
14 Feb 14 '', 26 '', 13 '', 23 May 3 June 15 May 23 '', 14 June 19 '', 20 '', 14 Jan.	Cleomene Cashmere Taitsung Cambrian Prince Northern Monarea Eme Cimba Phasis Northampton British General W. D. Leeds	409 180 202 360 784 762	2443 13 2 11 50 3 0 16 100 18 3 25 40 7 2 7 91 18 2 8 200 4 0 0 194 11 2 16 7301 12 3 15	8496	50 7 2 20 49 10 0 0 91 16 3 1 	119200	67 19 2 21			320000	143 5 2 19	& Coal Co.	6 0 0 7 5 0 7 5 0 7 5 0 6 10 0 6 10 0 6 10 0 6 10 0 6 10 0 6 10 0 7 5 0	656 3 4 262 9 2 328 3 4 597 10 9 1301 6 0	2313 0 2 25 4 1 26 1 3 68 18 2 29 9 4 59 6 2 23 14 5 29 13 2 54 0 2 117 12 4 114 6 4 43 18 8	132 14 7 2 18 8 2 17 9 3 19 6 2 4 9 4 7 1 2 0 7 2 5 0 3 19 7 8 9 10 8 5 1 2 9 3	8 14 8 8 11 3 6 15 8 4 2 0	17467 16 10 402 3 1 396 7 9 791 8 2 361 16 6 727 18 9 290 13 10 364 3 6 662 19 10 1439 14 4 1403 5 7 355 19 2 58594 15 11	7 3 0 7 19 7 8 0 2 8 12 4 2 7 4 2 7 4 0 7 4 2 7 3 10 7 4 2 8 4 8	30 ", 30 ", 18 ", 7 Aug. 9 Oct. 15 Sept. 18 ", 4 ", 19 Oct. 24 ", 11 ",
			Inde	nt for	Permanen	t.wav	Materials	for I	Ranawala (Tront	Southern	Western, and Rick	hmond	Railwaye	16th Sen	tember 1	881	· · · · · · · · · · · · · · · · · · ·		·
6 ,, 13 ,, 9 ,, 20 ,, 27 ,,	Carthage Orient Candida Samuel Plimsoll Lusitania The Tweed Thessalus Orontes	854 456 469 943 777 364 918 418	183 12 0 5 100 16 0 5 100 0 0 9 200 6 2 6 167 0 2 24 80 8 0 13 202 7 1 18 89 11 1 8			 						Ebbw Vale Co	6 10 0 6 10 0 6 10 0 6 10 0 6 10 0 6 10 0 6 10 0 6 10 0	1 1	103 5 7 56 14 3 43 15 0 87 12 10 93 19 2 35 3 7 88 10 9 39 3 8	10 2 4 5 12 9 5 11 10 11 0 5 9 4 3 4 10 6 11 2 8 5 0 5	27 15 11 14 15 10 16 3 8 32 8 7 24 18 8 13 0 6 32 9 9 14 9 7	715 11 0 1433 4 5 1213 16 8 575 7 4 1447 11 4	7 5 5 4 7 3 1 1 7 3 4 7 3 2 7 3 2	1882. 8 May. 8 ',' 4 July. 2 ',' 25 May. 29 July. 29 ',' 20 Aug.
			т. э.		D		M 1	<u> </u>		<u> </u>	C 13	TT7 . 170:1	, .	<u> </u>	1011 0		001			<u> </u>
17 ,,	Oberon John O'Gaunt Windermere Cotopaxi Carthage Orient Samuel Plimsoll Cynisca Windsor Castle. The Tweed Theophane	417 815 739 242 296 577 66 400 409 471 383	100 10 0 9 199 10 1 4 184 3 0 25 58 1 0 19 78 11 0 16 142 12 0 19 17 5 2 0 100 0 2 25 97 8 3 25 121 13 1 15 92 15 3 3	tor	Fermanen	- Way	Materials	:	Kenewals, C	reat	Southern,	Western, and Rich	6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 6 10 0 0 0	653 5 6 1296 16 10 1197 1 0 377 7 7 510 12 5 926 19 1 1 112 5 9 650 3 6 633 8 4 790 17 0 603 2 6	10th Sept 43 19 5 87 5 8 80 11 6 32 13 2 44 3 9 80 4 4 7 11 2 43 12 9 53 4 7 40 12 1 556 13 7	5 12 4 10 19 8 10 2 11 3 6 4 4 9 7 7 18 0 1 3 1 5 5 11 10 6 15 3 5 4 0	16 5 3 32 5 6	719 2 6 1427 7 8 1317 10 1 421 13 6 570 15 0 1036 0 3 123 15 10 715 17 11 667 5 2 870 10 4 663 18 9	7 3 1 7 3 2 7 3 1 7 5 4 7 5 4 7 5 4 7 3 1 7 3 1 7 3 1	1882. 24 June. 17 ''' 2 '''' 27 April. 8 May. 8 July 6 July 17 July. 29 ''' 3 '''
			· · · · ·		Inder	nt for	Permanen	t-way	Materials	for F	Renewals, 1	Richmond Railway	, 19th	February.	1881.					
1981. 24 Sept	Darling Downs.				ł i	6000	1 8 3 16					The Patent Nut and Bolt Co.	•	23 2 3	1 3 10	0 11 1	0 9 2	25 6 4	17 12 3	'1882. 16 Jan.

No. 5-continued

Date		Steel 'Ra	Fram and Guard ils coupled	F	`ishplates.	Bol	ts and Nuts	Ga	uge Studs.		Screws.	Name of Contractor	Rate	Lnvoice Cost.	Freight.	English	Colonial	Total Cost	Cost	Date
of Invoice	Name of Ship.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage	No.	Tonnage.	No.	' Tonnage.	Name of Contractor	per ton.	HITTOICE COSIL	Treight.	Charges.	Charges.	10001 0030	per ton.	of Arrival.
			ŧ		Ind	ent fo	r Permano	ent W	Vay Materi	als f	or the Gov	ernment Tramway	s, 19th 1	February,	1881.					
1881. 30 Nov.	Lusitania .	421	T. c. q lbs 88 9 2 8] [T. c q. lbs.	-	T. c. q lbs	.	T. c. q. lbs		T. (c. q lbs	Steel Company of Scot-	£ s. d 8 16 0	Æ s. d.	£ s. d. 55 5 11	£ s. d 5 5 5	£ s. d. 21 4 5	£ s d. 860 8 0	£ s d. 9 14 6	1882 17 Jan.
30 ,, 30 ,, .	,,			490	0 15 3 0	30132	7 18 0 10	 	 	70000	13 13 0 12	Phœnix Bolt & Nut Co. Steel Company of Scot-	20 0 0 24 0 0 8 18 0	158 1 9 327 14 7 7 0 3	10 15 1 18 10 S 0 9 10	1 16 4 3 13 7 0 0 11	2 18 2 5 11 5 0 3 11	173 11 4 355 10 3 7 14 11	21 19 5 26 0 10 9 16 9	17 ,, 17 ,, 17 ,,
30 ,, 30 ,,	Mirzapore	60	12 18 0 18		· · · · ·	:		2250	3 15 0 0 	:		Phœnix Bolt & Nut Co. Steel Company of Scot- land.	13 0 0 8 16 0	48 15 0 113 11 10	5 1 11 8 1 4	0 11 10 0 18 9	$\begin{array}{cccc}1&2&3\\2&15&6\end{array}$	55 11 0 125 7 5	14 16 3 9 14 2	17 ,, 27 ,,
29 ,,	Rosetta Oregon	360 120 855	77 1 1 10 25 14 0 16 176 7 0 12	500 900	0 16 0 0 i 3 2 23	:: :: ::		· .				10. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	8 16 0 8 18 0 8 16 0 7 5 0 7 0 0	678 3 10 7 2 4 226 4 5 1278 11 6 8 5 10	48 3 3 0 10 1 16 1 4 154 10 0 1 0 9	4 10 5 0 0 11 1 12 8 9 14 5 0 1 5	17 8 9 0 3 8 5 10 7 34 1 9 0 4 4	748 6 3 7 17 0 249 9 0 1476 17 8 9 12 4	9 14 2 9 16 3 9 14 2 8 7 6 8 2 1	27 ,, 27 ,, 10 Feb. 8 May. 8 ,,
1882. 20 Feb. 20 ", 3 Mar 3 ", 6 May 12 ", 7 April. 7 ", 20 May 20 April 15 Feb. '	Cuzco Orient Cotopaxi Cotopaxi Garonne Austral Birksgate Potosi Liguria Rohilla	572 783 99 865 1018 1240 912	117 13 1 19 155 18 0 9 20 13 3 20 173 8 1 4 196 4 0 17 258 0 1 1 174 11 2 16 53 8 0 5	580 550 1700 1860 	0 18 1 25 0 18 0 7 						11 7 2 11	"" "" "" "" "" "" "" "" "" "" "" "" ""	8 0 8 7 10 8 8 0 8 7 10 8 8 0 8 8 10 8 8 10 8 7 10 8 7 10 0 7 10 8 7 10 8 7 10 8 8 0 8	945 5 9 6 19 2 1252 8 7 6 16 0 166 5 2 1479 16 2 1674 6 0 20 14 9 1935 1 9 21 9 2 1489 15 4 10 15 0 428 19 10 273 2 4	66 3 10 0 10 4 87 14 1 0 10 0 11 12 10 97 10 11 110 7 3 3 1 11 258 0 3 3 1 4 98 4 1 1 16 6 30 0 9 15 6 5	6 10 10 0 1 1 8 13 9 0 0 11 1 5 10 9 10 10 10 15 0 3 3 14 3 0 0 3 3 9 12 1 0 1 8 3 1 4 2 19 6	18 19 3 0 3 1 24 12 0 2 8 3 6 0 27 9 5 63 16 6 0 18 10 0 4 7 8 13 10 3 4 3	1036 19 8 7 13 8 1373 8 5 7 9 7 182 9 10 1614 7 5 1827 0 1 24 8 4 2276 1 6 25 5 7 1626 0 4 12 17 9 470 15 9 470 15 9	8 16 3 8 6 1 8 16 3 8 16 3 9 6 2 9 6 2 8 17 6 8 16 6 8 16 6 9 6 2 9 6 2 9 6 2 9 6 2 9 6 2 9 6 2 9 10 8 16 8 16 9 16 8 16 9 16 8 16 9 16 9 16 9 16 9 16 9 16 9 16 9 16 9	16 April. 16 ', 11 May. 11 ', 27 April 28 June. 30 ', 17 ', 17 ', 21 July 21 ', 7 June. 27 April.
15 ,, . 15 ,,	,,			.:		200	0 1 0 17	5333	8 18 3 8		25.0.000	,,	13 0 0 20 0 0	116 4 8	12 3 5 0 1 1	1 7 4 0 0 3	1 15 9 0 0 4 309 14 0	131 11 2 1 4 8 14982 12 3	14 14 5 21 8 3	27 .,,
		7562	1530 8 0 15	7460	Fastenings	1 (bove sent l	7583 Dy Co	ntractors t		·	npany of Scotland,	to be u	sed in cou	ipling Rai		009 14 0	14002 12 3	}	<u> </u>
1881. 27 Oct. 27 ,, 14 Nov 14 ,, 28 ,, 12 Dec 12 ,,		::				5000 30000 15497 52227 102724	3 14 2 2 	5000 30000 15497 52227 102724	3 10 1 13 21 2 1 12 10 14 3 13 36 3 1 2 71 10 3 12			Phonix Bolt & Nut Co. "" "" "" "" ""	20 0 0 13 0 0 20 0 0 13 0 0 20 0 0 13 0 0 20 0 0 13 0 0	24 0 0 45 14 9 143 19 3 274 10 8 74 10 4 139 13 3 249 14 3 470 2 6 1422 5 0		0 4 9 0 9 2 1 8 10 2 14 10 0 14 11 1 7 11 2 9 10 4 14 0		24 4 9 46 3 11 145 8 1 277 5 6 75 5 3 141 1 2 252 1	20 4 0 13 2 7 20 4 0 13 2 7 20 4 0 13 2 7 20 4 0 13 2 7 20 4 0 13 2 7	

No. 5—continued—Return of Miscellaneous Articles imported for the Great Southern and Western Lines during 1882.

	Date of nvoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total Cost.	Cost per Ton.	Cost each.	Date of Arrival.
	1881.				T. c. q. lbs.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	1882.
1	Aug	Seriol Wyn	G. D. Peters & Co	2000 vds. seaming lace	************		0 0 21	18 15 0	040	Ò I2 O	0 4 10	19 15 10		0 0 21	16 Jan.
1		,,	,,	1000 yds. pasting lace			0 0 21	10 8 4	0 2 3			10 10 8		0 0 2	1
1,	,,		,,	200 gross daisy tufts			ото	17 10 0	0 3 9	0 11 2	0 3 7	18 8 6		0 I 10	,
3	,,	British Yeoman	Patent Shaft and Axle-				16 14 163	1674 10 0	75' 0 0	42 IQ I	26 17 9	1819 6 10		18 3 10½	
	. أ		tree Co.	and axles.		j			'		. [,	i	•	
	Sept	a "	,,	50 ,, ,,	• • • • • • • • • • • • • • • • • • • •		16 14 103	837 5 0	37 IO O	21 9 5	13 8 10	909 13 3		18 3 10½	3 ,,
	,	Seriol Wyn	TT 61, 11 6 6	150 ,, ,, ,, ,,	•••		16 14 103	2511 15 0	112 10 0	64 8 6	53 17 10	2742 II 4		18 5 8	16 ,,
	July	British Yeoman Inch Murrin	H. Statham & Co Beyer, Peacock, & Co.	500 vul. rubber buffers	••••		0 19 6	487 10 0	1	12 10 3	4 18 10	. 507 10 11	•••••	103 4	3 "
		Star of Greece	Patent Shaft and Axle-	6 Bogie goods engines	*******		2500 0 0	15000 0 0		270 0 0	••••	15270 0 0	•••••	2545 0 0	3 "
1	,,		tree Co.	150 pairs waggon wheels and axles.	••••••	•••••	16 14 104	2511 15 0	84 7 6	64 7 6	40 0 4	2700 10 4		18 0 1	16 ,,
1	,, ,	Darling Downs	Thomas Turton & Sons		•••••		0 10 0	325 0 0	14 8 4	8 10 9	701	354 19 2	٠	0 10 11	16 ,,
10	• • •	,,	,,	750 c. s. volute springs	••••••		0 2 11/2	79 13 9	3 12 4	2 1 2	1 13 O	87 ó 3		0 2 3	16 ,,
1	,,	,,	_ "	150 horse-box springs	•••		0 12 3	91 17 6	3 2 2	2 8 I	1 11 11	98 19 8		0 13 2	16 ,,
2.	,,,	,,	Ransomes & Rapier	3 engine turntables	• • • • • • • • • • • • • • • • • • • •	•••	335 0 0	1005 0 0	89 18 6	26 2 4	2I O 2	1142 1 0		380 13 8	16 ,,
	Aug	,,	C. Cammell & Co	100 volute springs			139	118 15 0	r 8 8	3 5 10	1139	125 3 3		150	16 ,,
1	Sept	Closeburn	Beyer, Peacock, & Co.		••••••		380 0 0	1140 0 0	67 15 1	29 5 10	20 4 4	1257 5 3		419 1 9	16 _,,
		Moel Rhiwan	Ransomes & Rapier	4 Bogie goods engines	•••••	····•••	2500 0 0	10000 0 0	;	180 0 0		10180 O O		2545 O O	25 Feb.
1 2	Sept	Midlothian		3 engine turntables 50 pairs waggon wheels		····••	335 0 0	1005 0 0	81 15 0	26 2 4	26 6 5	1139 3 9		379 14 7	22 Jan.
2	Septi	Brittiothian	tree Co.	and axles.	•••••		16 14 103	837 5 0	28 2 6	21 11 5	18 18 10	905 17 9	••••	18 2 4	16 ,,
	Oct	Ann Duthie		50	*******		16 14 103	837 5 0	28 2 6	. 21 12 5	19 1 3	906 I 2		18 2 5	26 ,,
3	Sept	Moel Rhiwan	Thomas Turton & Sons	100 horse-box springs	•••••		0 12 3	6i 5 o		1 11 10	· ·	66 5 1	,	0 13 3	22 ,,
3	,,	,,	,, · · · · · · · · · · · · · · · · · ·	900 waggon-bearing springs	********		0 10 0	450 ŏ o	20 14 6	11 15 9	9 1 1	491 11 4		0 10 11	22 ,, .
3		_ ,, · · · · ·		750 c. s. volute springs			$0 2 1\frac{1}{2}$	79 13 9	2 9 4	2 1 4	í 7 I	85 11 6	.:	0 2 3	22 ,,
- - 3	Nov	Garonne	Bradbury, Wilkinson,	6 ticket-dating presses and			8 0 10	48 5 o	0 10 0	2 10 9	0 0 2	51 5 11		8 11 0	13 ,,
	0.4	0.1.	& Co.	dies.							_	.1		_	
I	Oct	Cochrina	tree Co.	75 pairs waggon wheels	.***	••••	16 14 103	1255 17 6	42 3 9	32 5 6	28 10 11	1358 17 8	••••	18 2 4	12 Feb.
2.		Lammermoor		and axles.	4		.6 .4	-6-4İ			-6		l	-0 - 1	
17			North British Rubber	100 ,, ,, 1000 I. r. springs 8 x 6 x 3	**********		16 14 103	1674 10 0	56 5 0	42 19 6	26 17 9 12 6 3	1800 12 3		18 0 11	
1.	" …	,,	Co.	1000 1. 1. springs o x o x 3	•••••••		1. I ÖŻ	1085 8 4	4 13 3	27 9 2	12 0 3	1129 17 0		127	25 "
2	,,	Northumberland.		200 draw-bar and buffer-	*******		2 15 0	- 550 0 0	12 5 1	14 3 5	9 13 10	586 2 4		2 18 71	25 Jan.
Į				springs.		''''	5 0	33- 0	3 1	-4 3 3	9 -3 10	300 - 4	••••	2 20 /2	
1	,,	Lammermoor	Tangye Bros	ı hydraulic tensile machine	************		277 10 0	277 IO O	6 11 4	7 5 3	3 15 3	295 1 10		295 1 10	25 Feb.
. (,,	,,		6 special steam pumps	*****		131 15 8	790 14 0		20 3 2	3 15 3	836 6 7		139 7 9	25. ,,
	,,		Beyer, Peacock, & Co.	I wheel lathe			380 0 0	380 o o		.9 17 7	6 10 2	415 11 5		415 11 5	25 ,,
20	,,]	Fantaisie	P. & W. M'Lellan	ı platform truck			1 18 0	т 18 о	0 11 0	0 7 5	огз	2 17 8		× 2 17 8	17 Mar.
10	"	,,	J. R. Edmondson	24 ribbon-dating presses	••••		2 0 0	48 o o	0 10 0	1 10 6	о то б	50 11 0		$2 \ 2 \ 1\frac{1}{2}$	17 ,,
21	"	,,	Hobbs, Hart, & Co	600 brass padlocks	············		060	180 10 0	0 10 0	4 16 9	1 18 11	187 15 8		о 6 з	17 "
19	Nov	,,	C. Cammell & Co Taylor Brothers & Co.	Diamond steel	2 12 O I	95 0 0	•••••	247 0 10	1 15 3	6 10 0	3 I 6		99 7 6		17 ,,
1 '	1.04	33	Laylor Drothers & Co.	Yorkshire scrap iron	11616	19 5 2	•••••	34 19 1	1 2 8	1 1 5	0 16 0	37 19 2	2018 3	••••••	17 "
	ļ	,	,	Carried forward	•••••			45674 16 1	817 7 0	984 14 1	373 4 9	47850 I II	`		

No. 5-continued-Return of Miscellaneous Articles imported for the Great Southern and Western Lines during 1882.

	Date of	Ship.	From whom purchased.	Description.	Tonnage.	Cost	Cost each.	Invoice Cost.	Freight.	English	Colonial	Total Cost.	Cost	G-1	Date
_	Invoice.	<u> </u>				per Ton.			110/5/10.	Charges.	Charges.	Total Cost.	per Ton.	Cost each.	of Arrival.
	,		,	,	T. c. q. lbs.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d	£ s. d.	£ s. d.	£ s. d	. 1882.
2	1881.	·		Brought forward	•••••			45674 16 1	817 7 0	984 14 1	373 4 9	47850 1 11	•••••		
Z	1 Nov 27 Oct	Fantaisie Gulf of Carpentaria	Taylor Brothers & Co. Hadfields Steel Co	Taylor's T. iron	0 18 3 18	19 14 10	 14 6 8	18 13 6 215 0 0			0 6 8	20 3 10 237 6 5	21 7 1	 15 16 5	17 Mar. 22 Jan.
	29 ,,	Ellerbank	Patent Shaft and Axle- tree Co.	75 pairs waggon wheels and axles.			16 13 8	1251 5 2	42 3 9	32 3 1	21 6 4	1346 18 4	,	17 19 2	16 Mar.
	31 ,, 5 Nov	Larnaca	Ransomes & Rapier North British Rubber Co.	3 engine turntables			335 0 0	1005 0 0	' ' ' ' '		19 1 11	1126 13 11	•••••	375 11 3	3r "
	12 ,,	Isle of Erin	Patent Shaft and Axle- tree Co.	50 I. r. springs	••••••		0 14 3 16 13 8	35 12 6 834 3 6		,		37 14 0	•••••	0 15 1	31 Mar.
	7 ,,	Eaton Hall	Beyer, Peacock, & Co.	I pair driving wheels I pair trailing wheels			234 0 0	234 O. O		5 19 6	2 15 10			246 12 5	16 ,,
	7 ,,	» ······	, ,,	I Bogie frame			200 0 0	100 0 0 200 0 0 67 0 0	3 5 6	J>	2 7 10	- 3	•••••	105 8 2	16 ,,
	7 ,,	,,	,,	ling rods. 2 sets Bg. springs		-			I 2 4	1 14 3	0 15 3	70 11 10		70 11 10	16 "
,	7 ,,	,,	Hyde, Archer, & Co	ı pair cylinders	••••••		41 0 0	82 0 0	I 7 4 I 12 3	2 I II 2 II O	018 9 1 4 11	86 8 0 105 8 2	•••••	43 4 0 105 8 2	16 ,, 16 ,,
	2 Dec 6 Nov	Ettrickdale	Ransomes & Rapier Beyer, Peacock, & Co.	3 engine turntables 2 Bogie goods engines			335 0 0	3 5 10 1005 0 0	1 2 0 76 9 8	0 8 1 26 2 4	0 0 9	4 16 8 1126 18 11		0 0 11½ 375 12 11	27 Jan. 18 Mar.
	9 ,,		India-rubber Works Co Patent Shaft and Axle-	250 I. r. buffers			2500 0 0 0 2 4 16 14 10 ³	5000 0 0 29 3 4 1674 10 0	0 10 0 56 5 0	90 0 0 1 1 1 42 10 6	o 6 1 27 3 0	5090, 0 0 31 0 6 1800 17 6		$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
	7 Dec	Glaucus	tree Co. Hadfields Steel Co	axles. 15 sets tramcar wheels and			14 6 8	215 0 0	. 7 11 6	5 15 0	4 8 6	232 15 0		18 0 2 • 15 10 4	7 " 26 "
		Scottish Bard	· · · · · · · · · · · · · · · · · · ·	axles. 48 doz. carriage door locks			0 14 6	34 16 o	0 5 0	107	076	36 9 I		0 15 2	22 ,,
	7 ,, 3 Dec	Hereford	C. Cammell & Co	48 ,, private ,, Yorkshire bar iron	2 1 1 0	26 o o	0 7 6	18 0 0 53 12 6	0 5 0 1 5 9	0 12 3 1 13 3	0 3 9 0 12 4	19 1 0 57 3 10 2		0 7 114	22 ,, 23 April
	5 Jan	,,	Vickers, Sons, & Co	50 c. s. tyres	12 0 3 22	32 0 0		385 10 4	9 0 8	9 19 3	4 16 3	409 6 63	3 19 4		23 ,,
3	2 Dec	,,	T. Turton & Sons	250 waggon-bearing springs	16 2 1 20	7 6 1	0 10 0	279 0 0 125 0 0	10 I 7 5 18 2	7 7 0	3 15 11 2 6 2	300 4 6 1 136 13 4	8 12 5	0 10 11 1	23 "
-		i	. 1	2 sets engine and tender springs.	•••••		42 10 0	85 0 0	3 16 5	2 9 0	1 11 10	92 17 3	••••	46 8 7½	² 3 ,, 8 May
1	3 » ··· 7 » ···	Deva	,,	82 sets spiral springs Spring steel	6 13 3 20 2	6 0 0	1 3 9	97 7 6 174 2 2	8 5 10 4 3 8	2 15 2 4 13 6	3 0 7	111 9 1		1 7 2	14 Mar.
I		Chimborazo	North British Rubber Co. T. Turton & Sons	100 I. r. tyres	8 4 3 12 2		0 4 3 ¹ / ₂	21 9 6	0 10 6	i 0 7	3 0 I 0 5 I 2 7 II	23 5 8	7 15 2	o 4 7 ³	15 April
2: I.	2 ,, ,		Geo. Salter & Co	25 gross window springs Copper bolt	3 O I 47	••••	0 4 102	6 I IO 237 5 8	1 2 0 4 16 0	5 5 5 0 9 6 6 5 10	2 7 11 0 1 1 3 8 10	208 15 11 2 7 14 5 251 16 48	3 11 10	0 6 2	7 Mar. 7 ",
		•		Carried forward				59454 13 1	·			62468 4 6			² 3 "

No. 5--continued-Return of Miscellaneous Articles, imported for the Great Southern and Western Lines during 1882.

Date of Invoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight	English Charges.	Colonial Charges.	Total cost.	Cost per Ton	Cost each.	Date of Arrival.
1881. 5 Dec. 1882.	Colestial Empire	T. Turton & Sons	Brought forward 650 waggon bearingsprings	T. c. q. 1b.	£ s. d. 	£ s. d.	£ s. d. 59454 13 1 325 0 0	1191 8 1	1305 6 5	516 16 11	62468 4 6	£ s. d.	£ s. d.	1882. 1 May
2 Jan	Hereford	Sir Joseph Whitworth & Co	448 machine taps 58 sets dies			0 3 6 1 1 3 6 7 8	78 13 3 61 13 8 19 3 1	0 5 3	2 2 S 1 13 7 0 10 0	0 13 0 0 10 0 0 2 11	81 14 2 64 1 4 19 17 2		$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	23 April 23 ,, 23 ,,
1881. 30 Dec	ູ ,,	James Scott & Son	10 Erhardt's weighing apparatus.			27 16 3	278 2 4	1 14 6	7 5 6	2 5 9	289 S I		28 18 9½	-
31 ,, 21 ,, 1882.	,, ·······	Patent Woollen Cloth Co. J. M'Ilwraith & Co	652 yds. saddle-cloth 300 yds. wax-cloth			0 5 11	192 18 9 35 0 0	' ' '			204 2 11 37 2 5		0 6 3 0 2 5	² 3 ,, ² 3 ,,
14 Jan. 14 ,, 17 Feb 25 Jan 23 ,,	Clyde S.s Sorrento Ardmillan Gulf of Finland	North British Rubber Co. Henry Carr	6762 lbs. steam packing 3000 lubricators 629 9-in. socket-pipes 400 sets hose and couplings 211 9-in. socket-pipes	 149 4 0 0 50 0 3 21	' .]´	0 0 11½ 0 1 2¼ 5 0 0	324 0 3 180 0 0 662 1 6 2000 0 0	8 3 3	4 16 6 18 13 9	21 19 3	194 10 11	6 10 1 6 11 1	o i og o i 3½ 5 3 9	23 ,, 24 Mar. 3 April. 2 June. 25 May.
1881. 20 Dec 1882.	Clyde	Kitson & Co	I engine and car combined			1100 0 0	1100 0 0	1 -4, -,	_	16 6 5	1392 16 7		1392 16 7	24 Mar.
31 Jan 9 Feb	Afghan & Macduff Gulf of St. Vincent.	Vickers, Sons & Co C. Cammell & Co	500°c.s. waggon tyres 12 sets elliptical bearing springs.	92 19 1 27	26 0 0	6 8 4	2417 6 9 77 0 6	2 6 2		3 ⁸ 5 7 0 19 3	2600 2 5 82 7 2	27 19 3	6 17 3	8May, 15 June 25 May.
9 " 9 " 9 " 25 Feb. 2 Mar 8 Feb. 19 Jan 8 Feb	Afghan	Westinghouse Brake Co. Britannia Rubber Co J. & S. Roberts C Cammell & Co. Midland Railway Carriage Co.	36 sets spiral ,, 12 sets elliptical ,, 24 sets spiral ,, 50 sets brake-fittings 400 1 r. springs 422 9-in, socket-pipes 6 crank axles			1 3 9 6 8 4 1 3 9 22 0 0 0 16 6 117 6 0½ 1 4 0½	, , ,	2 5 6 0 16 16 0 28 0 0 1 1 0 3 77 17 3 3 3 18 3		0 10 8 1 2 3 0 9 0 11 1 5 3 7 7 4 4 10 7 10 5 2 14 7	733 3 4 138 12 4	5 7 7	1 5 5 6 17 7 1 5 6 23 6 9 0 17 2	25 ,, 8 ,, 25 ,, 24 June. 2 ,, 15 ,, 8 May.
15 ", 13 ", 13 ", 13 ", 3 ", 4 ", 3 Mar	Macduff	T. Turton & Sons Tangyes (Limited) "" Taylor Bros. & Co Tangyes (Limited) R. W. Cameron & Co Burnham, Parry, Williams & Co.	1	1 14 1 13 	19 19 5	8 15 6 9 15 0 16 11 6 21 18 9 49 11 8 22 12 0 0 1 08 1280 0 0	1030 8 5120 0	0 0 5 7 0 0 18 9 0 1 5 2	1 9 6 4 19 6 6 17 7 6 1 3 8 6 1 9	0 10 10 0 12 1 2 1 '3	54 15 2 60 17 2 206 17 6 274 0 2 157 1 6 37 3 4 47 13 2 1262 5 2 5142 15 8	2	9 2 7 10 2 10 17 4 10 22 16 8 52 7 2 23 16 7 0 1 38 1285 13 11	8 ,, 15 June. 15 ,, 15 ,, 15 ,, 15 ,, 17 ,, 18 ,, 19 July.
17 ,,	East Lothian	J. & S. Roberts	Carried forward		4 9 7		77977 6	- <u>-</u>	<u> </u>	<u> </u>	ļ	.		

No. 5—continued—Return of Miscellaneous Articles imported for the Great Southern and Western Lines during 1882.

Date of Invoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total Cost.	Cost per Ton.	Oost each.	Date of Arrival:
1882.				T. c. q. lb.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d	£ s. d.	£ s. d.	1882.
			Brought forward		1				1630 0 7	756 5 2			s. u.	1002.
13 Mar	East Lothian	Hird, Dawson, & Hardy	Rivet-iron	2 10 0 0	18 5 7		45 14 0			0 16 3		19 16 4		2 July.
22 Feb	,,	Patent Nut & Bolt Co.	Lowmoor rivets	2 10 0 0	31 4 0	`	78 0 0		2 5 .6			33 4 10	*	2 ,,".
7 Mar	. "	Co.	6721 lbs. steam-packing		·······	0 0 113	322 1 0			3 12 7	339 9 4	l Ì	о г о ў	
2 ,,	Ravenna		150 c.s. tyres	49 18 2 13	32 0 0		1597 15 9	91 15 1	44 18 6	38 4 5	1772 13 0	35 10' 0		27 May.
17 ,,	Cynisca	R. C. Gibbins & Co	24 traversing screw-jacks			7 9 2	179 0 3	2 2 6	4 16 0		188 1 1	35 10 0	7 16 8 }	
23 ,,		Geo. Spencer & Co	600 cylinder-springs			0 10 9	322 10 0		8 7 9	3 6 10			0 11 2	1 2
ıĞ "	Thessalus	Vickers, Sons & Co	100 c.s. crossings	**********	! 	17 19 7	1798 0 0	- 3 3	19 6 3	25 19 9	, 200	,	18 19 0 ³ 4	
20 ,,	The Tweed	J. & S. Roberts	422 9-in. socket-pipes	101 2 3 0	4 TI 3		457 15 8	77 15 . 3		19 8 1		5 12 3		1
4 April	Patriarch	Sharp, Stewart & Co	3 6-in. slotting-machines		` .	75 15 0	227 5 O	5 18 0		2 17 4	241 16 11		80 12 4	30 ,,
20 ,,	Sutlej	C. Cammell & Co	72 brake-van springs			0 15 3	54 18 o		1 12 6	1 2 10			0 17 21	
6 ,,	Greta	Sharp, Stewart & Co.	radial drilling machine	•••••	•••	215 0 0	215 0 0		_	2 17 6	230 1 10		230 I IO	r Aug.
21 ,,	John Duthie	Vickers, Sons & Co	60 c.s. tyres	16 13 0 17	32 0 0		533 0 10			8 9 4		34 I IO2	-5	4 Sept.
20 ,,	Orontes	~ ^ ~ · · · · · · · · · · · · · · · · ·	92 c.s. crossings	· · · · · · · · · · · · · · · · · · ·		17 7 73	1599 4 9	46 16 10		24 6 6	1686 10 11		18 6 7½	20 Aug.
21 Mar	Windsor Castle	J. & S. Roberts	208 9-in. socket-pipes	49 8 3 14	411 3		225 11 8	38 6 5	687	g II I	279 17 9	1 '-1		17 July.
3 ,,	Lusitania	H. Statham & Co	800 i.r. springs	************		0 10 11 1	438 15 o	7 10 8	11 5 10	3 13 2	46i 4 8	""	о 11 б 1	
23 ,,	,,	Tangye Brothers	50 sets valve springs			o 8 10 3	22 5 0	0 9 0		0 3 3	23 11 3		0 9 5	25 ,,
23 ,,	D	n =="a"	50 sets valve seats		••••	0 11 1	27 15 0	0 12 0	0 17 6	0 4 0	29 8 6		0 11 94	
	Berwick Law	R. W. Cameron & Co.	20000 gals. axle-oil		· · · · · · ·	O I 0	.1014 8 8	210 0 0	10 18 6	11163	1247 3 5		$0 1 3\frac{1}{8}$	15 Sept.
	Delcomyn	Kitson & Co	2 tramway motors	• • • • • • • • • • • • • • • • • • • •		1220 0 0	2440 0 0	347 10 8	62.39	25 1 4	2874 15 9	i	1437 7 10	31 Aug.
10 Мау	Portia	Vickers, Sons & Co	75 c.s. crossings	· · · · · · · · · · · · · · · · · · ·	•••••	28 O I J	2100 7 10	57 2 9	21 3 1	29 0 11	2207 14 7	1	29 8 84	24 Sept.
25 ,,	Gulf of Carpentaria	Cochrane, Grove & Co.	1018 socket-pipes	99 17 2 7	4 17 6		486 18 2	174 15 9	13 11 5	18 15 5	694 0 9	6190	• • • • • • • • •	6 Aug.
²⁵ ,,	Portia	C. Cammell & Co	100 carriage springs	•••	:	2 16 0	280 0 0		760	3 8 3	301 8 9		3 0 3½ 6 15 6	6 ,,
1		,, ·	20 clliptical bearing springs	******	••••	6 8 4	128 6 8	2 4 4	3 6 6	1 12 10	135 10 4		3 0 3½ 6 15 6	' 24 Sept.
1 ,,	,,	J. & S. Roberts	40 nests' spiral ,,			139	47 10 0	0 16 2	1 4 5	0 12 1	, 50 2 8		151	24 ,,
		Tangyes (Limited)	414 9-in. socket-pipes	98 13 0 0	4 11 3		450 I IO		11 8 0	19 0 5	558 4 o	5 13 2	******	24 ,,
1	Antiope	Cochrane, Grove & Co.	1 set pressure pumps			••••••		.5 18 2	060	0 2 5	3 7 0	1	. 3 7 0	6 Aug.
10 April	City of Sydney	Burnham, Parry, Wil-	446 socket-pipes	47 18 I O	4176		233 11 6	37 14 8	5 19 9	9 8 5	286 14 4	5 19 8		4 Oct.
то шрини	City of Dyanoy	liams & Co.	4 4-wheeled motors		••••	1190 0 0	4760 0 0	1254 2 4	70 6 3	9 18 8	6094 7 3	:	1523 11 10	4 June.
14 June	Firth of Clyde	Beyer, Peacock, & Co.	3 locomotive engines			2800 0 0	0,00	1			0	ļ		. .
3 ,,	Antiope	Anderston Foundry	100 sets switches	•••	•••••	13 18 6	8400 0 0		151 4 0		8551 4 0		2850 8 0	13 Oct.
"	F	Co.	100 5005 5 11 100105 11.,		•••••	13 10 0	1392 10 0	90 18 1	34 19 3	28 0 7	1546 7 11		¹⁵ 9 3 ¹ / ₄	4 »,
2 ,,	Glendower	Vickers, Sons & Co	75 c.s. crossings	*		28 o 1	2700 7 70	57 6 8	6	6 -				- 0
26 May	Smyrna	Tangyes (Limited)	10 sets pumping machinery		•••••		1156 2 2	٠, ,	22 ,6 5	29 6 3	2209 7 2		29 9 13	9 Sept.
9 "		Sir Joseph Whitworth	6 shaping machines		******	115 12 2½ 224 0 0		23 3 9 26 9 5	29 I O	13 17 11	1222 4 10	1 I	$122 4 5\frac{3}{4}$	19 "
- "		& Co.				~~4 0 0	1344 0 0	26 9 5	33 15 0	16 o 8	1420 5 1		236 14 2	4 "
18 ,,	Portia	C. Cammell & Co	20 elliptical bearing springs			6 8 4	128 6 8	2 4 4	3 6 6	1 12 0	Tar 10 0		6	0.4
18 ,,	,,	,,	40 nests' spiral			1 3 9	47 10 0	0 16 2	3 6 6 1 4 5	0.12 1	135 10 3 50 2 8		6 15 6	24 ,,
13 ,,	,,	Hyde, Archer & Co	800 yds. French carpet			0 3 0	121 11 4	I 3 9	3 3 9	1 4 8	•		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	24 ,,
20 · ,,	,,	Cochrane, Grove & Co.	1096 4-in. socket-pipes	81 0 3 0	4 17 6		395 I 2	63 16 4	3 3 9	15 17 4	_, ,			24. ,,
23 June		Sharp, Stewart & Co.	3 drilling machines		· · · · · · · · · · · · · · · · · · ·	215 0 0	645 0 0	21 2 8	16 5 6	6 18 8	484 15 4 680 6 10		229 15 7	24 ,, 24 Oct.
1	ĺ												9 -5 /	-4 000.
Ì	ļ		Carried forward				113793 11 9	5205 8 1	2307 6 8	1146 11 3	122452 17 9			
		• •	ii				3,70 3	J - J	J-,	T 3				

No. 5—continued—Return of Miscellaneous Articles imported for the Great Southern and Western Lines during 1882.

Date of Invoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total Cost. per	Cost each.	Date of Arrival.
1882. 17 June	Sophocles	Anderston Foundry	Brought forward 50 sets steel switches	T. c. q. lbs.	£ s. d.	£ s. d.	£ s. d 113793 11 9 696 5 6	5205 8 1	£ s. d.		122452 17 9	s. d. £ s. d	1882.
10 "	Northampton	Co. Westinghouse Brake Co.	50 recoil springs	•••••	•••••	0 10 0	25 0 0	0 7 0	1 2 10	084	26 18 2	0 10 9	24 ,,
10 ,, 22 ,, 24 ,,	29 29 29	Beyer, Peacock, Co	50 ,,			0 15 0 33 6 8 309 10 0	37 10 0 200 0 0 309 10 0	0 0 3 6 0 0 18 7 0 6 7 6	5 0 11 5 7 5 3 0 7 15 3	0 5 2 2 5 8 3 14 5	208 7 3	0 15 4 34 14 6 327 6 8	24 ,,
24 ,, 13 July 23 June:	· ,,	Glen & Ross	3 10", 3 5 cwt. steam hammers 2 drilling and boring machines.			185 0 0 122 9 4 76 0 0	367 10	0 11 7 10 0 26 5 11 0 4 18 1	969	6 14 0 5 8 8 1 16 1	408 11 4	195 13 11 136 3 9 81 6 7	24 ,,
29 ,, 6 April 17 ,, 23 Mar	Phasis Patriarch Durham John Duthie	Robey & Co			·	569 6 0 90 0 0 134'0 0 1 4 0 ¹ 2	804 0 0	0 120 18 1 0 6 5 4 0 8 8 6	42 16 11 6 18 0 5 20 6 5 7 9 10 10	3 3 8	286 7 0 840 5 8	631 4 1 95 9 0 140 0 11 1 6 4	30 July. 23 Aug.
23 Feb 23 ,, 23 ,, 17 May	Durham	Carriage Co. Simpson & Co. ,,, J. & S. Roberts	24 9" sluice valves		4 II 3	6 19 5 4 5 7 1 2 7	167 6 6 51 7 6 7 18 6	0 20 11 0 0 6 4 11 6 0 19 0 4 38 13 9	i 6 8	0 1 5	59 8 I 9 3 4	8 I 5 4 I9 0 I 6 2	² 3 ,, ² 3 ,, ⁴ Sept.
4 July 22 ,, 6 ,,	Dartford Bann	Sharp, Stewart, & Co. J. & S. Roberts Vickers, Sons. & Co	1 punching and shearing machine. 211 9" socket pipes 83 c. s. crossings 2 drilling and boring	50 2 3 7	4 11 3	269 0 0 	269 0 0 228 15 4 1164 7 6 314 0 0	23 15 5 4 39 9 7 6 31 7 2 0 10 3 2	5 6 17 6 7 5 17 4 2 11 15 10	16 3 7	276 8 1 5 : 1223 14 1 ·	303 12 8 0 3 14 14 10 167 17 1	13 " 13 "
28 ,,	Sikh and Bann	. & Co. Geo. Spencer & Co	machines. 600 cylinder springs	·············		0 10 9	322 10 (4 10 7	8 10 3	3 0 10	338 11 8	0 11 3	13 ,, and 20 Oct.
12 ,,	Wodan	a'a 11 0 a	Spring steel 100 sets elliptical bearing springs.	••.	24 15 0	6 0 4	601 13	5 9 11 6	5 2 16 I	7 3 6	657 5 7	6 11 5	10 "
12 ,, 12 ,, 17 ,, 12 ,, 15 ,, 21 ,,	Dharwar Loch Etive Dartford Bann Sikh	Anderston Foundry Co Ransomes & Rapier	200 nests spiral do Spring steel 3 loco. passenger engines 50 sets switches 50 , 100 sets elliptical bearing	2 4 I 7	24 15 0	2800 0 0 13 18 6 14 0 0 6 0 4	267 10 6 54 16 9 8400 0 6 696 5 6 700 0 6	0 14 14 19 1 13 10 0	1 10 5	0 17 2 14 2 2 13 12 1	58 18 2 26 1 8551 4 .0 762 18 5 763 6 10	I 9 2 I 9	3 Nov. 3 " 3 "
21 ., 10 May	John Duthie	Smith, Beacock, & Tannett.	springs. 200 nests' spiral do 3 screw-cutting lathes	••••••		1 6 9 194 6 8	267 10 0 583 0 0	9 0 8	6 16 16	3 4 ¹ 7 2 7		I 9 2 204 12 7	
			Carried forward		•••••		134304 13	3 5834 5	2728 14 1	1320 2 5	144187 14 10		-

No. 5—continued—Return of Miscellaneous Articles imported for to Great Southern and Western Lines during 1882.

Date of Invoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total Cost.	Cost per Ton.	Cost each.	Date of Arrival.
1882. 15 May 15 ,, 15 ,, 9 ,,	John Duthie ,,, Catania John Duthie	J. & S. Roberts	Brought forward 76 brake-van bearing springs 76 ,, 76 , ,, 24 9" socket bends 2 screwing machines	T. c. q. lb.		£ s. d	£ s. d. 134304 13 ,3 57 0 0 49 8 0 67 9 0 20 16 9 232 0 0	2 10 3 2 3 7 3 0 7 4 17 11	1 9 6 1 5 8 1 14 9	1 0 7 0 18 2 1 4 9 0 14 10	£ s. d. 144187 14 10 62 0 4 53 15 5 73 9 1 27 5 11 242 5 10	11 9 3	£ s. d. 0 16 4 0 14 2 0 19 4	1882. 4 Sept. 4 " 4 " 17 July. 4 Sept.
16 Sept 21 July 31 , 7 Aug 8 July 10 Aug 10 , 8 ,	Jerusalem	& Co. R. W. Cameron & Co. Beyer, Peacock & Co. Cochrane, Grove & Co. Hird, Dawson, & Hardy. J. B. Edmondson Brown, Bailey & Dixon George Spencer & Co. Vickers, Sons & Co Burnham, Parry, Wil-	20,000 gals. axle oil	172 II O O	4 17 6 37 16 6	0 1 08 290 0 0 	1014 8 8 870 0 0 841 3 8 258 12 9 43 6 5 460 11 4 28 15 0 1002 12 2 2320 0 0	23 9 6 135 17 8 4 7 3 0 10 6 39 17 2 1 1 0 27 0 6	21 18 0 21 3 7 6 12 3 1 4 8 11 17 7 1 0 4	11 16 3 12 0 10 33 15 2 3 4 0 0 7 8 7 6 1 0 5 3 13 18 11 8 5 7	1032 0 1 272 16 3 45 9 3 519 12 2 31 1 7	5 19 7 ¹ / ₄ 39 18 0		30 Dec. 14 Nov. 14 ,, 12 Dec. 12 ,, 24 Oct. 24 ,, 29 Nov.
17 July 10 Oct		liams & Co. North British Rubber Co Patent Shaft & Axletree Co. Hadfields Steel Foun-	40 pairs tram-car wheels			$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	3 11 9 1249 10 0 268 10 0	33- 17-	0 I 9 33 I 5 7 0 3	19 12 4 3 8 10	3 13 6 1633 3 7 307 15 2		$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	26 Dec.
25 Aug 21 ,, 23 ,, 23 ,, 19 ,, 6 ,,	Europa	dry Co. F. C. Calvert & Co Ransomes & Rapier Vickers, Sons & Co George Spencer & Co. Smith, Beacock, & Tannett S. Osborne & Co	and axles. Carbolic powder 85 sets switches 50 c. s. crossings 100 cylinder springs 2 planing machines 50 sets elliptical bearing			14 0 0 13 2 9 15 4 0 0 5 9 160 0 0 3 2 6	3 6 0 1190 0 0 656 18 9 760 1 3 28 15 0 320 0 0 156 5 0	17 19 5 20 1 6 0 0 10 6 5 10 7	0 6 0 12 1 0 6 12 10 7 13 6 0 17 4 8 3 0 4 1 1	23 3 3 9 4 9	1297 14 5 690 15 9 798 7 13 30 8 11 337 12 1		15 5 4 13 16 3\frac{3}{4} 15 19 4\frac{1}{4} 0 6 1 168 16 0\frac{1}{2} 3 10 8	
9 " 7 " 23 Aug	Abergeldie Guropa	tree Co. Taylor, Bros. & Co Hadfields Steel Foun-		3 7 0 24		8 3 6	784 16 0 66 7 2 134 5 0	1 - 2 - 2	19 15 4 1 16 2 3 13 1	12 15 11 1 2 8 1 17 6	71 8 10	21 4 11	8 16 8 	25 Dec. 25 ,, 10 Nov.
22 Sept 26 ,,	Brilliant Potosi	tree Co.	and axles. 2 special pumps 50 pairs waggon wheels 12 pressure-gauges	•••••••		116 3 6 • 16 13 24 • 5 17 6	232 7 0 833 0 0	392 17 6	22 3.0		1259 14 10		123 5 4 25 3 10 6 4 0	30 Dec. 28 Nov. 26 Dec.
10 ,,	"	Patent Shaft & Axletree Co. S. Osborn & Co	25 pairs carriage wheels 200 nests' spiral bearing springs.	•••		0 17 6	493 15 0 175 0 0	147 0 9	4 10- 7	2 13 4		j	26 9 6 0 19 10‡	26 "
			Carried forward			••••	148997 14 11	7925 6 4	3011 14 10	1533 0 5	161467 16 6	•••••		

No. 5—continued—Return	of	MISCELLANEOUS	ARTICLE	s imported	for the	Great S	Southern a	\mathbf{nd}	Western	Ĺines	during	1882.

Date of Invoice.	Ship.	From whom purchased.	Description.	. Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total Cost.	Cost per Ton.	Cost each.	Date of Arrival.
1882. 10 Oct 3 " 16 Sept 19 "	" Brilliant	Patent Shaft & Axletree Co. Anderston Foundry Co. Wm. Barrows & Son	Brought forward 55 sets elliptical bearing springs. 75 pairs waggon wheels 50 sets switches Bar-iron	24 8 1 16	10 10 2	3 2 6 16 13 24 13 18 6	148997 14 11 171 17 6 1249 10 0 696 5 0 268 1 0 696 5 0	7925 6 4 16 2 9 330 19 9 45 9 0 15 11 4 45 9 0	3011 14 10 4 9 4 33 1 4 7 2 3 6 17 0 7 4 3	2 12 7 19 12 4 14 1 6 6 4 6 14 0 9	161467 16 6 195 2 2 1633 3 5 762 17 9		£ s. d. 3 10 114 21 15 6 15 5 134	1882. 26 Dec. 26 ,, 30 ,,

No. 5—continued—Return of Miscellaneous Imports, Great Northern Railway, 1882.

Date of Invoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.'	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total Cost.	Cost per Ton.	Cost each.	Date of Arrival.
1881. 30 July 19 , 19 , 12 Aug 23 July 6 , 7 Oct 7 Nov 27 Oct 27 , 27 , 27 , 31 , 15 Nov 1882. 5 Jan	P. & O. Co's. steamer. Scriol Wyn Moel Rhiwan Firth of Forth Glaucus "" Clyde	William Barrows & Son C. Cammell & Co C. Churchill & Co Vickers, Sons & Co Beyer, Peacock, & Co Hird, Dawson, & Hardy "" Beyer, Peacock, & Co. Tangye Brothers	3 Bogie goods engines Iron plates Slab iron L iron	10 0 15 3 3 1 14 	48 I3 4 II 7 7 II I IO	£ s. d.	# s. d. 73 0 0 130 16 4 35 7 0 92 0 6 15 9 7 455 8 0 419 13 2 380 0 0 7500 0 0 347 6 14 11 6 79 19 10 185 0 0 51 10 0	10 17 9 20 10 8 75 0 0 12 9 4 0 10 6 0 17 4	2 3 0 3 11 0 19 3 2 12 6 0 7 8 11 13 3 10 15 4 9 17 7 135 0 0 8 19 6 0 7 4 1 0 12 6 2 1 4 4 19 0	£ s. d. 1 2 6 1 4 6 0 6 8 0 17 2	77 9 10 144 59 5 96 0 2 15 17 3 483 4 2 445 4 10 416 5 7 7789 18 3 374 1 6 15 13 7 25 18 9	35 15 9 22 16 3 21 7 10 19 13 10		16 ,,
			Carried forward				10600 18 0	184 6 г	216 1 0	114 9 9	11115 14 10			

No. 8	5— $continued$ —	-Return	of	MISCELLANEOUS	IMPORTS,	Great	Northern	Railway,	1882.
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Date of Invoice.	Ship.	From whom purchased.	Description. •	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total Cost.	Cost per Ton.	Cost each.	Date of Arrival.
`				T. c. q. lb.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	1882.
1851.			Brought forward				10600 18 0	184 б 1	216 1 0	114 9 9	11115 14 10	•••••	•••	
14 Dec 7 Nov 28 Dec 28 ,, 1882.	Clyde	Kitson & Co	r copper plate			37 0 0 2500 0 0 40 0 0 65 0 0	37 0 0 2500 0 0 40 0 0 65 0 0	0 10 0 25 0 0 0 10 6 0 10 6	1 5 0 62 10 0 1 6 6 1 19 0	0 7 0 0 7 7 0 12 4	39 2 0 2587 10 0 42 4 7 68 1 10		39 2 0 2587 10 0 42 4 7 68 1 10	8 May. 18 March. 22 May. 22 ,,
10 Jan 31 ,, 13 Feb 18 July 29 June 10 July	Taitsing Bothwell Castle Bann	C. Cammell & Co Pontifex & Wood Tangyes (Limited) John Smith & Co Elliott's Metal Co Vickers, Sons, & Co	24 Roscoe's lubricators 200 brass tubes		95 0 0 86 19 9	14 2 9 1 15 6 1 2 8 12 15 2	271 0 1 342 1 2 84 16 6 42 13 3 220 14 10 382 15 2	3 2 3 3 18 8 1 3 2 0 10 6 1 17 11 13 2 3	7 2 0 8 17 6 2 8 11 1 4 4 5 13 4 9 12 7	2 II 5 3 5 0 0 I6 I 0 8 2 2 2 2 4 I6 4	358 2 4 89 4 8 44 16 3 230 8 3 410 6 4	99 11 6	14 17 5 1 17 4 1 3 0 13 13 6	22 ,, 7 Aug. 7 ,, 14 Dec. 14 ,, 13 Nov.
10 ,,	,,	,,	120 ,,			4 18 10	593 15 1	20 7 7	332 18 10	7 9,5		······································	5 6 I	13 "
25 Sept 25 ,, 19 ,, 19 ,,	William Duthie Peterborough	Stockton Forge Co	ent for wrought and cast 70 cylinder segments 1,248 bolts 109 cylinder segments 1,303 bolts	94 14 1 9 1 13 2 7 145 8 0 19 1 15 1 22	5 15 0 18 0 0 5 15 0 18 0 0	idge over ri	544 ¹² 5 30 4 2 836 2 0 31 18 0	117 4 1	. 22nd Ma 13 15 0 0 15 5 21 0 6 0 16 3	rch, 1882. 19 7 6 0 10 10 29 16 10 0 11 7	1066 18 4	20 I 2		24 Dec. 24 " 23 " 23 "
19 "	,	,,	720 ,,	1 0 1 5 244 11 3 6	18 6 2		18 11 7	302 13 6	0 9 6 36 16 8	50 13 4	1851 11 8	20 7 7		23 "
	'	· Inde	nt for wrought and cast	Ironwork fo	or the Bri	dge over ri	ver Macquar	rie at Dubl	oo, 25th J	uly, 1881.				
13 ,, 13 ,, 10 July 10 ,, 23 Aug	Smyrna Sophocles Dharwar William Duthie Pericles))))))	C. i. cylinders Bolts and nuts and washers C. i. cylinders Bolts and washers C. i. cylinders Bolts and washers C. i. cylinders Bolts and washers C. i. cylinders Bolts and washers	3 16 1 22 116 17 1 21 159 13 0 21 1 14 0 6 52 13 3 0 0 16 0 2	15 6 0 6 8 6 6 8 6 15 6 0 6 8 6 15 6 0 6 8 6	•••••	719 14 11 58 9 8 750 18 0 1025 16 3 26 1 0 338 10 4 12 5 1 938 9 10 74 1 8	153 19 1 4 0 1 147 17 3 197 15 3 2 2 1 115 14 4 1 15 2 180 15 3 6 7 9	18 3 7 1 9 6 18 18 5 25 15 9 0 13 2 8 12 0 0 6 4 23 11 11 1 17 4	23 14 3 1 1 6 24 13 8 33 14 7 0 10 1 11 0 9 0 6 9 30 17 6 1 9 7	942 7 4 1283 1 10 29 6 4 473 17 5 14 13 4 1173 14 6	8 3 5 17 0 0 8 1 3 8 0 9 17 4 10 8 19 10 18 6 8 8 0 8 17 6 6		19 Sept. 19 " 21 Oct. 3 Nov. 3 " 24 Dec. 24 " 23 " 23 "
			4	598 9 2 7			3944 6 9	810 6 3	99 8 0	127 8 8	4981 9 8			

No. 6.

Return of Rolling Stock on hand on Railways of New South Wales, 31st December, 1882.

Locomotives.					pecomotives. Passenger Stock.													Goods Stock.																			
Name of Railway.	Tank Engines.	Passenger Engines.	Goods Engines.	Total Engines.	Dining Carriage.	Sleeping Carriages.	1st-class Carriages.	Composite Carriages.	Composite Brake Vans.	2nd-class Carriages.	Mail Vans.	Prison Vans.	Hearses.	Workmen's Vans.	Horse Boxes.	Carriage Trucks.	Brake Vans.	Total Passenger.	Brake Vans.	Accident Vans.	A-Low-sided Waggons.	B-High-sided Waggons	C-Covered Vans.	D—Medium-sided Waggons.	E-Timber Waggons.	Water Trucks.	F—Six-wheeled Low-sided Waggons.	G—Six-wheeled Medium- sided Waggons.	Powder Vans.	Composite Cattle and Goods Van.	Sheep Vans.	Cattle Waggons.	Meat Vans.	Refrigerating Car.	Ballast Waggons.	Total Goods.	Grand Total of Goods and Passenger Stock.
1882.																			1										-						İ		
Southern and Western	23	95	95	213	ı	7	62	66	31	100	6	3	4	8	64	36	15	403	82	6	72	156	179	3,012	192	6	3	3	10	1	199	220	10	1	42	4,194	4,810
Northern	4	19	32	55	٠٠٠;	1	19	20	•••	53	4	2	2		30	20	10	161	39		70	58	72	673	84	6	•••		7		114	82	3		43	1,251	1,467
Total to 31st December, 1882.	27	114	127	268	1	8	81	86	31	153	10	5	6	8	94	56	25	564	121	6	142	214	251	3,685	276	12	3	3	17	ı	313	302	13	ī	85	5,445	6,277
1881.				. ,					•																		!										
Southern and Western	23	84	75	182	Ι,	6	56	63	26	95	6	3	4	1	64	36	15	376	70		72	154	1 59	2,695	192		3	3	10	,	164	181	10	. I	42	3,757	4,315
Northern	4	19	28	51		1	19	13		53	4	2	2	•••	30	20	10	154	39		70	58	48	592	84		•••		7		84	64	3		43	1,092	1,297
Total to 31st December,	27 '	103	103	233 	1	7	75	76	26	148	10	5	6	1	94	56	25	530	109		142	212	207	3,287	276		3	3	17	1	248	245	13	1	85	4,849	5,612
						•		•																													
Increase	•••	11	24	35		1	6	10	5	5	•••			7			•••	34	12	6		2	44	398		12		•••			65	57				596	665
Decrease	•••			•••												•••	•••				. ••••	•••		•••••			•••							•••		•••••	•••

No. 7.

PUBLIC DEBT FOR RAILWAYS.

STATEMENT showing the amounts appropriated for Railway Services to 31st December, 1882; the Amount expended to same date; and the Balances retained or written off in the books of the Treasury.

i											
Appropriations.	Particulars.	Funended	Balances								
approprimeions.	I at brotters.	Expended.	Retained.	Written off.							
· · · · · · · · · · · · · · · · · · ·		 	1	1'							
£ 8. d	of Wagnery, No.										
a. s. (. 16 VICTORIA, No. 39.	£ s. d.	£ s. d.	# s. d.							
	Townsial C. I. B. I. C.										
217,500 0	Loan to the Sydney Railway Company	217,500 0 0		•••••							
-											
•	. 18 VICTORIA, No. 40.										
400,000 0		400,000-0 0		ļ .							
224,733 18	Purchase of the properties of the Sydney Railway and of the Hunter River Railway Companies										
		224,733 18 8		***************************************							
624,733 18		624,733 18 8									
	19 VICTORIA, Nos. 38 & 40.										
6		ŀ									
62,500 0	Railway, Sydney to Liverpool; and Railway, New-castle to Maitland	62,499 10 0	0.10	1							
50,000 0	 Surveys, experiments, and preparations for the exten- 	02,499 ,10 0	0 10 0	•••••							
	sion of Railways	49,997 19 7	2 0 5								
112,500 0		112,497 9 7	2 10 5								
	20 VICTORIA, NO. 1.		 								
·											
200,000 0	Railway works	200,000 0 0									
	20 VICTORIA, No. 34.										
300,000 0	Railway works	299,927 9 4	72 10 8								
	-										
	22 VICTORIA, NO. 22.										
			ļ								
8,000 0		711,999 18 0		. 0 2 0							
720,000 0	-										
720,000 0 1	- {	719,999 18 0		0 2 0							
	23 VICTORIA, No. 10.										
1,300 0		1,296 0 0		. 400							
9,021 0 0 23,949 0 0		8,645 2 8		375 17 4							
54,100 0		23,941 1 8 54,100 0 0		7 18 4							
· 88,370 o d	-										
	-	87,982 4 4		387 15 8							
	24 VICTORIA, No. 24.		, ,								
1,300 0 0		1,300 0 0		**************							
7,020 0 0		6,718 9 5		301 10 7							
8,320 0 6	•	8,018 9 5		301 10 7							
	25 VICTORIA, No. 19.										
. 6		_									
675 0 0 9,184 0 0	1	671 1 8 8,168 13 2		3 18 4							
20,000 0 0	Northern Line to Terminus to Morpeth	20,000 0 0		1,015 6 10							
5,000 0 0	Carriage-shed and Machine-shop, and fixing Engine Turn-table, &c., Northern Line	40'	421 0 0	!							
40,000 0	Bridge over Hunter River, at Singleton	4,578 19 3 40,000 0 0	421 0 9	***************************************							
70,000 0 0	Bridge over the Nepean, at Penrith	70,000 0 0	'	**************							
16,200 0 0	Land for Great Southern Railway to Goulburn	687,999 8 o 16,200 o o	0 12 0	*************							
20,000 0 0 7,000 0 0	Engines for Southern Extensions	20,000 0 0		***************************************							
30,000 0 0		7,000 0 0 30,000 0 0									
250,000 0 0	Great Western Line from Penrith towards Bathurst	250,000 0 0	***************************************								
250,000 0 0 60,000 0 0	Horse Railway Line from Blacktown to Windsor and	250,000 0 0	•••••								
•	Richmond	60,000 0 0		••••							
10,000 0 0	Additions and Alterations to Workshops and Stations	9,998 7 6	1 12 6								
1,476,059 0 0		. 1,474,616 9 7	423, 5 3	1,019 5 2							
3,747,482 18 8	Carried forward£	3,745,275 18 11	498 6 4	1,708 13 5							
		0,710, 73,	77- " "	-,,3 3							
	64-0		··								

· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·			
	Destinates	Eumanded	Balan	ces
Appropriations.	Particulars.	Expended.	Retained.	Written off.
	<u> </u>		10000000	
£ s. d.	, .	£ s. d.	£ s. d.	£ sd.
3,747,482 18 8	Brought forward	3,745,275 18 11	498 6 4	1,708 13 5
	•			
	26 VICTORIA, No. 14.			
700 0 0 11,182 0 0	Valuation of Land	696 0 0 10,523 3 5		4 0 0 658 16 7
11,182 0 0	Bridge over the Railway, near Newcastle	1,000 0 0		
16,000 0 0	Additional Line from Newcastle to Wallsend Junction	14,684 8 6	1,315 11 6	
. 350 0 0	Additional Telegraph Wire for Railway purposes from Parramatta to Penrith	336 5 6		13 14 6
675 0 0	Additional Telegraph Wire for Railway purposes	330 5 0		-3 -4 0
	from Campbelltown to Picton	514 16 8	160 3 4	
		27,754 14 1	1,475 14 10	676 11 1
29,907 0 0	27 VICTORIA, No. 14.			-,,-
	77		i i	
215,414 3 I 3,932 2 8	Extension to Goulburn Workshops, Southern Line	215,414 3 1 3,932 2 8		
3,932 2 8 2,480 14 3	Workshops, Northern Line	2,431 7 6	49 6 9	
13,000 0 0	Rolling Stock, Northern Line	13,000 0 0		•••••
23,000 0 0	Locomotive Engines, Western Line	23,000 0 0 20,000 0 0		
20,000 0 0 35,000 0 0	Carriages, Break-vans, Western Line Locomotive Engines, Northern Line			.,
1,000 0 0	Traverses for Coal Sidings, Newcastle	{ 37,659 10 9	2,340 9 3	
4,000 0 0	Ballast-waggons for Northern, Southern, and Western	· \	2,340 9 3	
50,000 0 0	Lines Extension into Goulburn	50,000 0 0		
150,000 0 0	Extension into Bathurst	150,000 0 0		
15,000 0 0	Richmond and Windsor Lines	15,000 0 0		••••••
7,500 0 0 5,000 0 0	Purchase of Land for Morpeth Railway	7,495 ¹ 3 4 4,821 5 6	4 6 8 1 178 14 6	
5,000 0 0	Wharf, Carriage Dock, and Siding, Newcastle Station	4,9-1 5 1	-,	
•	and West Maitland	_900 0 0		
.970 0 0	New Passenger Station, Platform, and Station at	970 0 0		
3,500 0 0	Coal Sidings at Newcastle	566 13 9	2,933 6 3	
400 0 0	Passenger Station and Platform at Rooty Hill,			
	Western Line	400 0 0 831 10 5	68 9 7	
900 0 0	Stables at Newcastle	110 0 0		
552,107 0 0	·	546,532 7 0	5,574 13 0	***************************************
	29 VICTORIA, No. 9.			
• .				
. 650 0 0	Station at Riverstone Station at Mulgrave	650 0 0 650 0 0		
9,000 0 0	Additional Ballast and Goods Trucks	9,000 0 0		
10,000 0 0	Windsor and Richmond Line			
. 850 0 0	Land at Newtown for Siding		29 2 4	
10,000 0 0	Additional Goods accommodation, Sydney Station			0 2 0
12,000 0 0	Railway-sheds	12,000 0 0		
5,000 0 0	Additional accommodation Stations			••••••
6,000 0 0	Claims for Land on the Penrith, Picton, and Singleton Extensions		2,143 17 10	
650 o o	Station at Douglas Park	640 14 3	9 5 9	
20,000 0 0	Extension of Great Northern Line to Terminus at	h .	A 177 T	-
	Morpeth	יייייייייייייייייייייייייייייייייייייי		
94,800 0 0		92,612 15 0	2,187 3 0	0 2 0
	29 VICTORIA, No. 23.			
		1	1	
200,000 0 0	Extension of the Great Western Line			
•			1,364 19 1	
400,000 0 0	Extension of the Great Northern Line	398,635 0 11		
•	Relaying the Line from Sydney to Parramatta Junction Enlarging Railway Bridges at East Maitland	20,000 0 0	1,491 2 10	
400,000 0 0 20,000 0 0 4,000 0 0 5,000 0 0	Relaying the Line from Sydney to Parramatta Junction Enlarging Railway Bridges at East Maitland Additional Accommodation to Stations	20,000 0 0 2,508 17 2 5,000 0 0	1,491 2 10	
400,000 0 0 20,000 0 0 4,000 0 0 5,000 0 0	Relaying the Line from Sydney to Parramatta Junction Enlarging Railway Bridges at East Maitland Additional Accommodation to Stations Additional Goods Waggons	20,000 0 0 2,508 17 2 5,000 0 0 10,000 0 0	1,491 2 10	···········
400,000 0 0 20,000 0 0 4,000 0 0 5,000 0 0	Relaying the Line from Sydney to Parramatta Junction Enlarging Railway Bridges at East Maitland Additional Accommodation to Stations	20,000 0 0 2,508 17 2 5,000 0 0 10,000 0 0	1,491 2 10	
400,000 0 0 20,000 0 0 4,000 0 0 5,000 0 0	Relaying the Line from Sydney to Parramatta Junction Enlarging Railway Bridges at East Maitland Additional Accommodation to Stations Additional Goods Waggons One-third the cost of the Bridge over the Nepean, defrayed from Railway Loan. One-third the cost of Bridge at Singleton, defrayed	20,000 0 0 2,508 17 2 5,000 0 0 10,000 0 0	1,491 2 10	
400,000 0 0 20,000 0 0 4,000 0 0 5,000 0 0 10,000 0 0 33,000 0	Relaying the Line from Sydney to Parramatta Junction Enlarging Railway Bridges at East Maitland Additional Accommodation to Stations Additional Goods Waggens One-third the cost of the Bridge over the Nepean, defrayed from Railway Loan.	20,000 0 0 2,508 17 2 5,000 0 0 10,000 0 0	1,491 2 10	
400,000 0 0 20,000 0 0 4,000 0 0 5,000 0 0 10,000 0 0 33,000 0	Relaying the Line from Sydney to Parramatta Junction Enlarging Railway Bridges at East Maitland Additional Accommodation to Stations Additional Goods Waggons One-third the cost of the Bridge over the Nepean, defrayed from Railway Loan. One-third the cost of Bridge at Singleton, defrayed	20,000 0 0 2,508 17 2 5,000 0 0 10,000 0 0	1,491 2 10	
400,000 0 0 20,000 0 0 4,000 0 0 5,000 0 0 10,000 0 0 33,000 0 0	Relaying the Line from Sydney to Parramatta Junction Enlarging Railway Bridges at East Maitland Additional Accommodation to Stations Additional Goods Waggons One-third the cost of the Bridge over the Nepean, defrayed from Railway Loan. One-third the cost of Bridge at Singleton, defrayed from Railway Loan.	20,000 0 0 2,508 17 2 5,000 0 0 10,000 0 0 33,000 0 0	1,491 2 10	
400,000 0 0 20,000 0 0 4,000 0 0 5,000 0 0 10,000 0 0 33,000 0 0	Relaying the Line from Sydney to Parramatta Junction Enlarging Railway Bridges at East Maitland Additional Accommodation to Stations Additional Goods Waggons One-third the cost of the Bridge over the Nepean, defrayed from Railway Loan. One-third the cost of Bridge at Singleton, defrayed	20,000 0 0 2,508 17 2 5,000 0 0 10,000 0 0 33,000 0 0	1,491 2 10	
400,000 0 0 20,000 0 0 4,000 0 0 5,000 0 0 10,000 0 0 33,000 0 0	Relaying the Line from Sydney to Parramatta Junction Enlarging Railway Bridges at East Maitland	20,000 0 0 2,508 17 2 5,000 0 0 10,000 0 0 33,000 0 0 15,500 0 0 684,643 18 1	1,491 2 10	
400,000 0 0 20,000 0 0 4,000 0 0 5,000 0 0 10,000 0 0 33,000 0 0 15,500 0 10	Relaying the Line from Sydney to Parramatta Junction Enlarging Railway Bridges at East Maitland	20,000 0 0 2,508 17 2 5,000 0 0 10,000 0 0 33,000 0 0 15,500 0 0 684,643 18 1	2,856 I II	
400,000 0 0 20,000 0 0 4,000 0 0 5,000 0 0 33,000 0 0 687,500 0 0 3,000 0 0 5,000 0 0	Relaying the Line from Sydney to Parramatta Junction Enlarging Railway Bridges at East Maitland Additional Accommodation to Stations Additional Goods Waggens One-third the cost of the Bridge over the Nepean, defrayed from Railway Loan One-third the cost of Bridge at Singleton, defrayed from Railway Loan 30 VICTORIA, No. 23. Engine-shed, Windsor and Richmond Line Trial Surveys for the Extension of the Great Southerr and Western Railways	20,000 0 0 2,508 17 2 5,000 0 0 10,000 0 0 33,000 0 0 15,500 0 0 684,643 18 1	2,856 I II	
400,000 0 0 20,000 0 0 4,000 0 0 5,000 0 0 10,000 0 0 33,000 0 0 687,500 0 0 3,000 0 0 5,000 0 0	Relaying the Line from Sydney to Parramatta Junction Enlarging Railway Bridges at East Maitland	20,000 0 0 2,508 17 2 5,000 0 0 10,000 0 0 0 15,500 0 0 684,643 18 1 1 1,054 9 6 5,000 0 0 25,000 0 0	2,856 I II	
400,000 0 0 20,000 0 0 4,000 0 0 5,000 0 0 33,000 0 0 687,500 0 0	Relaying the Line from Sydney to Parramatta Junction Enlarging Railway Bridges at East Maitland Additional Accommodation to Stations Additional Goods Waggens One-third the cost of the Bridge over the Nepean, defrayed from Railway Loan One-third the cost of Bridge at Singleton, defrayed from Railway Loan 30 VICTORIA, No. 23. Engine-shed, Windsor and Richmond Line Trial Surveys for the Extension of the Great Southerr and Western Railways	20,000 0 0 2,508 17 2 5,000 0 0 10,000 0 0 33,000 0 0 15,500 0 0 684,643 18 1	2,856 I II	

Appropriations.	Particulars. '	Expended.	Bala	nces
		1	Retained.	Written off.
- £ s. d.		£ s. d.	£ s. d.	
5,144,796 18 8	Brought forward		_	£ s. d.
3,144,790 10 0	Diought forward	5,127,874 2 7	14,537 9 7	2,385 6 6
	Warrana Na			
1,000,000 0 0	31 VICTORIA, No. 11. Railway Works—Extension to Bathurstand Goulburn	999,409 12 10	590 7 2	
	•	33311-3 - 1-		
	31 VICTORIA, NO. 27.			
3,412 0 0	Half the Cost of the Telegraph Line from Picton to	·		
	Goulburn, along the line of Railway—chargeable to Railways	3,411 2 0	0 18 0	************
3,719 0 0	Half the cost of Telegraph Line from Penrith to Bathurst, along the line of Railway—chargeable			
·	to Railways	3,511 0 10	207 19 2	***********
7,131 0 0		6,922 2 10	208 17 2	
	32 VICTORIA, No. 13.			
60,000 0 0	Towards cost of additional Rolling Stock for Railway purposes			
10,000 0 0	Compensation for Land taken at Honeysuckle Point		147 12 10	***************************************
70,000 0 0	·	69,852 7 2	147 12 10	***************************************
	34 Victoria, No. 2.			
13,000 0 0	New Machine-shop, running shed, erecting shop and stores at Newcastle, including roads connected			
2,000 0 0	therewith Additional Machinery	12,917 4 5 1,674 4 2	82 15 7 325 15 10	
30,500 0 0	New Station, Workshops for carriage and waggons department, carriage-shed, roofing, steam hammer,	-7-74 4 -	. 3-3 -3	••••••
	furnaces and machinery, Redfern, including roads connected therewith	30,420 19 11	· 79 O I	
. 5,000. 0 0 3,500 0 0	Excavating Station-yard, Redfern Additional Machinery	4,902 14 10 3,500 0 0	97 5 2	***************************************
6,000 0 0	New Passenger Station and Platforms, Newcastle, including road approaches		34 19 7	***************************************
60,000 0 0 35,000 0 0	Construction of Rolling Stock Completion of the relaying of the Line from Sydney	5,905 0 5 59,998 3 6	34 ¹⁹ 7 1 16 6	***************************************
17,000 0 0.	to Parramatta Completion of new Goods-shed, Sydney, and Roads	30,402 14 5	4,597 5 7	•••••
5,000 0 0	and Sidings in connection with same Extension to Morpeth	1 <u>4,5</u> 18 9 10 4,994 10 0	2,481 10 2 · 5 10 0	•
2,000 0 0	Land for Windsor and Richmond Line	1,340 18 11	659 1 1	
179,000 0 0		170,635 0 5	8,364 19 7	
	35 Victoria, No. 5.			
124 0 0	Construction of Railway-sheds	122 9 5	1 10 7	
230,000 0 0 70,000 0 0	Completion of Lines already sanctioned	229,942 14 2	57 5 10	*************
	Colony	65,580 13 9	4,419 6 3	
300,124 0 0		295,645 17 4	4,478 2 8	············
	36 Victoria, No. 2.			
60,000 0 0 2,000 0 0	Rolling Stock manufactured in the Colony Station Buildings—West Maitland	58,871 2 4 1,876 10 2	1,128 17 8 123 9 10	
257 0 0 75,000 0 0	Station-master's House at Newtown Purchase of Railway Stores, &c., &c	257 0 0 75,000 0 0		***********
137,257 0 0		136,004 12 6	1,252 7 6	***************************************
37.07		· 0-74 0	-,-,- / 0	
60	36 VICTORIA, No. 17.			
. 60,000 0. 0 . 10,000 0 0	Rolling Stock manufactured in the Colony Trial Surveys.	59,971 0 9 9,999 18 11	28 19 3 0 1 1	•••••
1,131,000 0 0	Towards the construction of a Line from Goulburn to Wagga Wagga	1,131,000 0 0		
60,000 0 0 279,000 0 0	Construction of a Line—Kelso to Bathurst	60,000 0 0 279,000 0 0	`	
361,500 0 0	Construction of a Line—Murrurundi to Tamworth	361,500 0 0	***************************************	• •••••
1,901,500 0 0	•	1,901,470 19 8	29 0 4	
8,739,808 18 8	Carried forward \pounds		29,608 16 10	2,385 6 6

Appropria	tions		Particulars.	Expended.	Bala	nces
	_	_			Retained.	Written off.
£ 8,739,808	s. 18	d. 8	Brought forward	£ s. d. 8,707,814 15 4	£ s. d. 29,608 16 10	£ s. d. 2,385 6 6
			38 Victoria, No. 2.			
20,000 100,000 25,000	0	0 0	Trial Surveys Rolling Stock Towards purchasing Land, laying Sidings, and erecting Sheds, Darling Harbour Wharf	19,988 3 4 99,992 12 10 24,998 13 4	11 16 8 7 7 2 1 6 8	***************************************
2,000 6,000 45,000 1,000	0 0 0	0 0 0 0 0 0	Engine-sheds Enlarging Machine-shop, Sydney Additional Machinery, Sydney Completion of New Station, Redfern To complete Western Line to Kelso, &c. Unadjusted Land Claims. To connect Great Northern Railway with the New	9,953 14 1 7,745 3 3 2,000 0 0 5,931 13 7 44,980 18 9 146 10 8	68 6 5 19 1 3 853 9 4	
50,000	0	٥	Wharfage Accommodation at Bullock Island Purchase of twelve Passenger Locomotive Engines for extensions beyond Murrurundi, Goulburn, and Bathurst	43,719 12 8 50,000 0 0	6,280 7 4	••••••
317,000	0	0		309,457 2 6	7,542 17 6	***************************************
20,000		0	39 VICTORIA, No. 18.	20,000 0 0		
50,000		0	Rolling Stock	49,599 17 2 5,000 0 0	400 2 10	••••••
75,000	0	0		74,599 17 2	400 2 10	
350,000 260,000 384,000 600,000 220,000 25,000 150,000	0 0 0 0	0 0 0 0 0 0 0	40 VICTORIA, No. 12. Orange to Wellington Wellington to Dubbo Junee to Narandera Tamworth to Armidale Werris Creek to Gunnedah Trial Surveys Additional Rolling Stock For strengthening the Bridge and improving the gradients on the Windsor and Richmond Line	350,000 0 0 260,000 0 0 346,553 13 6 600,000 0 0 220,000 0 0 25,000 0 0	37,446 6 6	
1,999,000	٥	0		1,961,553 13 6	37,446 6 6	
30,000 20,352 77,000 80,000	0		41 VICTORIA, No. 4. To complete line from Goulburn to Wagga Wagga To complete the extension into Bathurst To complete the line from Bathurst to Orange To complete line from Murrurundi to Tamworth 41 VICTORIA, No. 7.	30,000 0 0 6,246 16 1 64,839 12 5 73,595 17 7	14,105 3 11 12,160 7 7 6,404 2 5 32,669 13 11	
680,000	0		For the extension of the Great Southern Railway from the end of No. 3 Contract near Wagga Wagga to Albury, including the Viaduct over the Murrumbidgee River	680,000 0 0		•
20,000 20,000	0	0	Trial Surveys	20,000 0 0		
240,000 960,000			Rolling Stock, including Engines	240,000 0 0 960,000 0 0		
1,611,000		0	43 VICTORIA, No. 11. Tamworth to Tenterfield	655,956 9 2	955,043 10 10	
1,450,000	0 0 0	0000000	Dubbo to the vicinity of Bourke Gunnedah to a point opposite Narrabri. Wallerawang to Mudgee Narrandera to Hay Goulburn to Wagga Wagga, to complete the line Trial Surveys. Purchase of Railway stores and materials which cannot properly be charged to the Appropriations of Parliament until actually issued for use—the	507,541 3 I 294,850 I 8 576,337 I 10 547,815 I5 10 96,377 I9 I 20,000 0 0	942,458 16 11 75,149 18 4 158,662 18 2 187,184 4 2 3,622 0 11	
620,000		_	vote to be recouped as issues take place	620,000 0 0		••••••
5,866,000 18,164,160			Carried forward£	3,543,878 10 8	·	2,385 6 6
			Carried forward	7.2,731,900 2 3	2,429,709 0 11	2,305 0 0

Appropria	tions		Particulars.	Expended		Balaı	1009.
			, advictions.	·		Retained.	Written off.
£ 18,164,160	s. 18	d . 8	Brought forward	£ 8 15,731,986 5	. d.	£ s. d. 2,429,789 6 11	£ s. d. 2,385 6 6
			44 VICTORIA, No. 12.				
40,000	٠.٥	0	Orange to Dubbo	22,484 15	6	17,515 4 6	
22,000		0	Werris Creek to Gunnedah	18,958	8	3,041 17 4	
250,000	Ò	0	For the site and erection of New Workshops, Ma-	_			
			chinery, &c.	160,331 13		89,668 6 8	•••••
100,000	0	0	Doubling Line between Parramatta Junction, &c	97,230	3 0	2,769 17 0	· · · · · · · · · · · · · · · · · · ·
412,000	0	0	•	299,004 14	. 6	112,995 5 6	
•			44 VICTORIA, No. 28.	•			
2,000,000	0	0	Southern and Northern Junction Railway-From				
			Homebush to Waratah (double line) 95 miles	11,884 7	6	1,988,115 12 6	
1,020,000		0	Sydney to Wollongong and Kiama, 68 miles	17,145 16	8	1,002,854 3 4	•••••
1,430,000	0	0	Goulburn to Cooma vid Tarago, Bungendore, and	4		06.06	
80,000	``	_	Queanbeyan, 130 miles	43,137 10	11	1,386,862 1 1	••••••
00,000	U	٠	moiety of cost of constructing the Bridge 14 mile	11,328 11		68,671 8 7	
705,500	0	0	Orange to near Forbes via Molong, 83 miles	5,212 15		700,287 4 11	
518,000		0	Narrandera to Jerilderie, 63 miles	2,856	8	515,143 16 4	
218,000	0	0	Cootamundra to Gundagai, 34 miles	2,635	3	215,364 12 9	
1,260,000		0	Murrumburrah to Blayney, 108 miles	38,017 14	3	1,221,982 5 9	
95,000 300,000		0	From Wagga Wagga to Albury, to complete the line Alterations and additions to Station Buildings, and Siding accommodation to meet increasing traffic, inclusive of payments made in 1880 in anticipation	95,000			
			of this vote	300,000	0		***************************************
7,626,500	0	0	•	527,218 14	9	7,099,281 5 3	
			45 VICTORIA, No. 22.				
500,000	0	0	Additional Rolling Stock	196,634 18	8	303,365 1 4	
26,702,660	18	8	Total£	16,754,844 13	2	9,945,430 19 0	2,385 6 6
		•					

The Treasury, New South Wales, 31st March, 1883.

JAMES PEARSON,
Accountant.

No. 8. STATEMENT showing the Amount authorized to be raised by Loan for Railway Purposes; the Amount of Debentures sold, and the Interest to the 31st December, 1882, on Loans already negotiated.

' ·		· · · · · · · · · · · · · · · · · · ·			0	<u> </u>	Interest.		1 11 1
, .	Act.	Amount authorized to be raised.	Debentures*sold Amount.	Short-issued.	Over-issued and to raise amounts short-raised.	Rate.	Annual Interest on Authorized Loans.	Interest to 31st December, 1832, on Loans already negotiated.	Remarks.
1		£ s. d.	. £ s. d.	£ s. d.	£ s. d.		, £ s. d.	£ s. d.	
16	Victoria, No. 39	217,500 0 0	217,500 0 0		,	5 per cent.	10,875 0 0	307,641 4 9*	* 23d. and 31d. per diem were the rates of interest of original Loan, but renewals were at the rate of 5 per cent. per annum.
18	" No. 40	624,733 18 8	666,800 0		42,066 I 4	,,	33,340 0 0	007,122 6 5	but renewals were at the rate of 5 per cent. per annum. + Some of these Debentures have been renewed as they fell due.
19	" Nos. 38 & 40	112,500 0 0	112,500 0 0			,,	5,625 0 0	137,812 10 0	Some of these Dependences have been renewed as they len due.
20	" No. 1	200,000′ 0 0	203,000 0 0		3,000 0 0	. ,,	10,150 0 0	258,825 0 0	,
20	,, No. 34	300,000 0 0	299,000 0 0	1,000 0 0		,,	14,950 0 0	365,425 0 0	·
22	" No. 22	720,000 0 0	720,000 0 0	·		,,	36,000 0 0	864,000 0 0	
23	" No. 10	88,370 0 0	88,300 0 0	. 70 0 0		,,	4,415 Ô O	99,337 10 0	
24	", No. 24	8,320 0 0	8,300 0 0	20 0 0		, ,,	415 0 0	8,922 10 0	
25	" No. 19	1,476,059 0 0	1,476,000 o o	59 0 0		,,	73,800 o o	1,549,800 0 0	•
26	" No. 14	29,907 0 0	29,900 0 0	7 0 0	******	,,	1,495 0 0	26,910 0 0	
27	, " No. 14	-552,107 o o	552,100 0 0	700	•••••	,,	27,605 0 0	496,890 0 0	
29	" No. 9	94,800 0 0	94,800 0 0			,,	4,740 0 0	73,470 0 0	
29	" No. 23	687,500 0 0	687,500 o o			.,,	34,375 0. 0	567,187 10 0	
30	" No. 23	33,000 0 0	33,000 0 0			,,	1,650 0 0	26,400 0 0	
31	" No. 11	1,000,000 0 0	1,000,000 0 0			,,	50,000 0 0	743,800 o o‡	
31	" No. 27	7,131 0 0	7,100 0 0	31 0 0		,,	355 0 0	5,147 10 0	withstanding the following Debentures have been finally paid
32	" No. 13	70,000 0 0	70,000 0 0		·	,,	3,500 0 0	49,000 0 0	off, viz.:— 31 December, 1872 £20,000
34	", No. 2	179,000 0 0	179,000 0 0		· · · · · · · · · · · · · · · · · · ·	,,	8,950 0 0	109,637 10 0	31 December, 1872 £20,000 31 ,, 1873 21,000
Pr	oportion of Issue under	''			•				31 ,, 1874 22,000
V	rious Loan Acts to make					İ	•		31 ,, 1875 23,200 31 ,, 1876 24,300
g	ood the amount short-								31 ,, 1876 24,300
	ised under the same		228,700 0 0		228,700 0 0	,,	11,435 0 0	142,937 10 0	. 31 , 1878 10,500
35	Victoria No. 5	300,124 0 0	300,100 0 0	24 0 0		,,	15,005 0 0	172,557 10 0	31 ,, 1879 27,900
36	,, No. 2	137,257 0 0	137,200 0 0	57 0 0		,,	6,860 o q	72,030 0 0	31 ,, 1880 30,500 31 ,, 1881 34,100
36	" No. 17	·1,901,500 0 0	1,901,500 0 0			4 per cent.	76,060 o o	572,420 0 0	31 ,, 1882 28,800
38	" No. 2	317,000 0 0	317,000 0 0			,, .,.	12,680 0 0	50,720 0 0	0000.000
39	" No. 18	75,000 0 0	75,000 o o			,,	3,000 0 0	21,000 0 0	Amounting to £270,800
40	" No. 12	1,999,000 0 0	1,999,000 0 0			,,	79,960 o o	319,840 0 0	
41	" No. 4	207,352 0 0	207,300 0 0	52 0 0		,,	8,292 0 0	33,168 0 0	ì
41	" No. 7	960,000 0 0	960,000 0 0			,,	38,400 0 0	57,600 0 0	,
43	" No. 11	5,866,000 0 0	3,090,000 0 0			,,	234,640 0 0	105,400 0 0	
44	", No. 12	412,000 0 0	•••••			,,	16,480 o o		
44	" No. 28	7,626,500 0 0	,			,,	ვი5,ინი ი ი		
45	" No. 22	500,000 0 0				,,	20,000 0 0		
	$oldsymbol{\mathcal{L}}$	26,702,660 18 8	15,660,600 0 0	1,327 0 0	273,766 1 4		1,150,112 0 0	8,145,001 11 2	

The total amount of the Debentures issued to 31st December, 1882, was

Add the Debentures authorized but not then issued, amounting to £15,660,600 0 0 11,314,500 0 0 Making a total of..... £26,975,100 0 0 272,439 I 4

The Treasury, New South Wales, 31st March, 1883.

Total, as above shown..... £26,702,660 18 8 JAMES PEARSON, Accountant

No. 9.

RETURN showing the Capital Expenditure on the Government Railways of New South Wales, to the 31st December, 1881, and subsequent Expenditure to the 31st December, 1882.

Lines and Sections.	Total Expend 31 Decembe	litur r, 18	re to 81.	Amount Expended in 1882.	Total Expe		
Trùnk Line—	£	s.	d.	£ s. d.	£		d.
Darling Harbour Branch		-	ı	6,130 17 3			
Sydney to Granville				69,675 7 2	1,082,620		•
Tramway	4,878				4,878		1
i		<u> </u>				· .'	
Total, Trunk Line $oldsymbol{arepsilon}$	1,153,061	17	2	75,806 4 5	1,228,868	·I	7
Great Southern Line—	,						
Granville to Liverpool	154,906 [.]	. О	7	2,002 11 10	156,908	12	5
Liverpool to Campbelltown	139,569	13	11	763 2 8	140,332	16	7
Campbelltown to Menangle	83,852	16	8.	18 4 5	83,871	I	I
Menangle to Picton	335,241	4	2	380 г з	335,621	5	5
Picton to Goulburn	1,059,208	5	3	17,616 9- 4	1,076,824	`ì4	7
£ s. d. Goulburn to Yuss							
Credit of 1882 12,248 12 0	*437,971	3		710 7 1	438,681	10	2
Yass to Cootamundra	522,492	13	6	18,616 7 2	541,109	0	8
Cootamundra to North Wagga Wagga	357,070	7	3	19,715 11 10	376,785	19	I
Junce to Narrandera	349,691	17	4	229 19 4	349,921	16	8
North Wagga Wagga to Albury	789,588	0	6	4,316 1 3	793,904	ŗ	9
Narrandera to Hay£ s. d.	343,847	10	. 3	218,450 6 1	562,297	16	4
Narrandera to Jerilderie			:			•	
Sydney to Wollongong and Kiama	1,617 8,700	12 14	10	1,945 16 4 25,880 4 5			
Goulburn to Cooma	10,002	·9	9	14,421 3 8	24,423	13	5
Albury to the river Murray	413	15	0	9,698 19 4	10,112	14	4
Cootamundra to Gundagai	2,557	9	2	1,266 12 0	3,824	ī	2
Murrumburrah to Blayney	4,640	3	4	7,171 7 1	11,811	10	5
Total, Southern Line£	4,601,371	16	8	343,203 5 1	4,944,575	1	9
							
Great Western Line-							
Granville to Penrith	379,769	18	4	26,397 5 9	406,167	4	I
Blacktown to Richmond	139,164	2	8	18,386 13 8	157,550	16	4
Penrith to Bathurst	1,989,376	4	o	25,469 8 6	2,014,845	12	6
Bathurst to Orange	376,124	10	3	1,839 9 3	377,963	19	6
Orange to Wellington	425,263	9	6	4,869 4 5	430,132	13	11
Wellington to Dubbo	217,999	6	2	. 9,188 0 6	227,187	6	8
Dubbo to vicinity of Bourke	93,421	8	7	331,757 10 4	425,178	18	11
Wallerawang to Mudgee	222,236	11	0	327,814 18 3	550,051	9	3
Orange to near Forbes	2,953	6	. 2	3,541 9 9	6,494	15	11
Total, Western Line \pounds	3,846,308	16	8	749,264 0 5	4,595,572	17	I

^{*} Reduced by £12,248 12s., credit during 1882.

No. 9-continued.

Lines and Sections.	Total Expen	ditu er, 18	re to 381.	Amount Experin 1882.	ided •	Total Expen		
Great Northern Line—	£	s.	d.	£ s.	d.	£	s.	d.
Newcastle to West Maitland	591,609	13	7-	15,551 0	6	607,160	14	1
Morpeth Branch	57,412	6	8	21 7	4	57,433	14	0
West Maitland to Singleton	344,214	2	0	296 16	7	344,510		
Singleton to Murrurundi	731,724	2	6	1,091 10	5	732,815	12	11
Murrurundi to Tamworth	448,553	12	7	1,034 8	8	449,588		
Werris Creek to Gunnedah	245,543	18	2	513 4	. 8	246,057		-
Tamworth to Uralla	760,177	16	0	150,636 15	I	910,814	11	1
Uralla to Glen Innes	100,307	19	6	180,383 5	5	280,691	4	11
Glen Innes to Tenterfield	1	16	11	1,433 0	_	9,827		
Gunnedah to Narrabri	163,462	0	8	138,191 13	- 5	301,653		_
Homebush to Waratah	16,997	17	8	8,954 15	9	25,952		
•					_			
Total, Northern Line£	3,468,398	6	3	498,107 18	8	3,966,506	4	11
Total cost of Construction£	13,069,140	16	9	1,666,381 8	. 7	14,735,522	5	4
Rolling Stock—						, .		
South and West		3	9	170,689 11	I	1,522,621	14	10
Richmond Line	{	I	I	•••••••		5,226	I	1
North	0.,,,,	5	6	32,281 5	5	379,776	10	11
Tramway	1,712	12	3			1,712	12	3
Total, Rolling Stock£	1,706,366	2	7	202,970 · 16	6	1,909,336	19	1
Machinery—								
South and West	50,562	0	[•] 4	11,881 16	2	62,443		
North	11,321	1	0	3,585 12	11	14,906	13	11
Total, Machinery	61,883	1	4	15,467 9	. 1	77,350	10	5
T		•				<u> </u>		
Furniture— South and West	1,472	0	10	753 13	6	2,225	τ./	4
North	1			353 11		571	·	·
				<u> </u>		<u> </u>		
Total, Furniture£	1,690	3	9	1,107 4	6	2,797	8	3
Trial Surveys*	41,384	7	4	10,250 19	1	51,635	6	5
Total, Railways£†	14,880,464	11	9	1,896,177 17	9	16,776,642	9	6

^{*} This amount appears in Return of 1881 as £41,665 5s. 8d. It is now reduced by £280 18s. 4d., this amount having been transferred to authorized extension, Narrandera to Jerilderic.

† Reduced by £12,248 12s, credits during 1882.

No. 10.

STATEMENT showing the Cost of Construction and Cost per Mile open on different Sections of the Railway Lines, to 31st December, 1882.

Lines opened for Traffic.	Length in Miles.	Total Cost.	Cost per Mile.
	No.	£	£
Darling Harbour Branch	I	141,369	141,369
Sydney to Granville	`13	1,076,275	82,790
Haslem's Creek Branch	_ <u>1</u> _	6,346	12,692
Granville to Albury	3733	3,944,039	10,560
Junee to Hay	167	912,219	5,462
Granville to Nevertire	328	3,776,297	11,513
Wallerawang to Capertee	22	190,000	8,636
Blacktown to Richmond	16	157,551	9,847
Newcastle to Uralla	245	2,996,904	12,232
Werris Creek to Narrabri	97	547,711	5,646
Bullock Island Branch	1 1/2	47,986	31,991
Morpeth Branch	. 4	57,434	14,358
Average Cost of Construction	1,2681	13,854,131	10,922
£		•	
Pitt-street Tramway 4,878			
Rolling Stock	.		
Machinery			
Furniture 2,797			•
	•••••	1,994,363	************
Average Cost per mile, including all charges	1,2681	15,848,494	12,494

Note.—Between Sydney and Granville, including the Darling Harbour Branch, there are, in addition to the lengths shown, 23½ miles of sidings, the cost of which, together with the cost of the Locomotive, Permanent Way, and Traffic Shops and Sheds, &c., at Sydney, is included in the amounts shown.

On the Bullock Island Branch there are 4½ miles of sidings, the cost of which is included.

No. 11.

Table showing the number of Miles opened per annum, and the annual and average daily Mileage of Trains, from the commencement, on 26th September, 1855, to 31st December, 1882.

	Year.	Opened per annum.	Total opened.	Total Train Mileage.	Average Daily Mileage
-0					
1855	***************************************	14.	14	14,107	147
1856	***************************************	9	, 23 ·	68,371	187
1857		17	40	107,822	295
1858		15	55	141,495	388
1859 1860	***************************************		•55	147,618	. 404
1861	••••••	.15	70	179,249	491
	••••••	3	73	214,881	589
1862		24	97	274,565	752
1863	***************************************	27	124	315,177	863
1864	••••••	19	143	415,422	1,138
1865	••••••••••••••••••	Nil ·	143	483,446	1,324
866	***************************************	Nil	143	499,475	1,344
867		61	204	600,751	1,646
868	•••••	43	247	768,529	2,106
869		71	318	893,552	2,448
870		21 .	339	901,139	2,469
871		19	358	931,333	2,552
872	*	40	398	1,036,255	2,839
873	***************************************	5	403	1,109,879	3,041
874		Nĭl	403	1,249,233	3,423
875	***************************************	34	• 437	1,472,204	4,033
876		72	509	1,688,964	4,627
877		89	598	2,106,802	5,772
878	***************************************	90 1	688 1	2,655,176	7,274
879	***************************************	46	734½·	2,932,463	7,572
880	***************************************	115	8491	3,239,472	8,851
88ı	***********************************	146	9951	3,923,920	10,750
882		. 273	1,2681	4,851,127	, 13,291

No. 12.

Return of Earnings from Traffic in Passengers and Goods during year 1882.

		ruffic 82.			Gross I	Earnings from Coa	ching.					Gross Earnin	gs from Goods.			
	Year and Name of Railway.	n for 7 ec., 18		Passengers.		Excess-Luggage, Parcels,							4		· Total from	Gross Earnings from all sources.
	ranway.	Miles open for Traffic on 31 Dec., 1882.	1st and 2nd Class, Passengers.	Holders of Season Tickets	Total from Passengers.	Cloak Room, Horses, Car- riages, and Dogs.		Miscellaneous.	Total from Coaching.	Live Stock.	Minerals.	Wool,	· General Merchandise.	Miscellaneous.	Goods.	
	. 1882.		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	. £ s. d.	,£ s. d.	£ s. d.	£ s. d.	£s.d.	£ s. d.	· £ s. d.
İ	South and West	921	407,829 14 5	26,884 1 8	434,713 16 1	37,935 14 10	9,753 17 7	7,197 19 2	489,601 7 8	116,651 16 4	93,188 8 5	67,785 12 4	550,255 2 8	3,845 2 3	831,726 2 0	1,321,327 9 8
	North	347½	78,716 6 5	1,034 12 2	79,750 18 7	12,476 12 7	3,255 4 3	2,741 2 2	98,223 17 7	23,418 12 0	71,312 8 7	30,712 5 1	149,125 4 3	4,743 13 8	279,312 3 7	377,536 1 2
	Total, 1882	1,268½	486,546 0 10	27,918 13 10	514,464 14 8	50,412 7 5	13,009 1 10	9,939 1 4	587,825 5 3	140,070 8 4	164,500 17 0	98,497 17 5	699,380 6 11	8,588 15 11	1,111,038 5 7	1,698,863 10 10
	1881.															
	South and West	767	345,166 14 9	19,175 16 11	364,342 11 8	31,629 0 9	8,504 5 0	3,635 19 5	408,111 16 10	70,753 . 7 3	63,349 12 1	70,684 9 10	518,319 13 0	2,070 15 3	725,177 17 5	1,133,289 14 3
	North	228 1	65,642 8 0	839 11 9	66,481 19 9	10,112 8 3	2,656 10 0	1,311 16 3	80,562 14 3	8,563 18 9	53,434 8 1	22,498 8 1	144,392 13 10	1,483 15 6	230,373 4 3	310,935 18 6
	Total, 1881	995]	410,809 2 .9	20,015 8 8	430,824 11 5	41,741 9 0	11,160 15 0	4,947 15 8	488,674 11 1	79,317 6 0	116,784 0 2	93,182 17 11	662,712 6 10	3,554 10 9	955,551 1 8	1,444,225 12 9
Ì																
	Increase, 1882	273	. 75,736 18 1	7,903 5 2	83,640 3 3	8,670 18 5	1,848 6 10	4,991 5 8	99,150 14 2	60,753 2 4	47,716 16 10	5,314 19 6	36,668 0 1	5,034 5 2	155,487 3 11	254,637 18 1
	Decrease, 1882	··				•••••	•••••									·
							٠							<u> </u>		! !

No. 13.

Return of the Traffic in Passengers and Goods, the number of Trains run, and the number of miles travelled by Trains, 1882.

	raffic.			Coaching	Traffic.							Goods	Traffic.			Nu	nber of Tra	ins.		Number of	miles travell	ed by Train	s.
Year and Name of Railway.	Miles open for Traffic	•	Passen	,	1	Carriages.	ses con- l in Pas- r Trains.	Dogs.	ses con- yed in s Trains.	Cattle.	Sheep.	Pigs.	Mineral.	Wool.	General Mer- chandise.	Passenger.	Goods.	Total.	Passenger.	Goods.	Total Train miles	Ballasting, Shunting,	Total.
·	Miles	First Class.	Second Class.	Total 1st and 2nd Class.	Tickets.	Car	Horse veycd senger		Hora ve Good		<u> </u>	Ĺ,			Chandise.							""	
1882.		No.	No.	No.	No.	No.	No.	No.	No.	ο.	No.	No.	Tons.	Bales.	Tons.	No.	No.	No.	No.	No.	No.	No.	No.
South and West	921	2,693,901	5,660,455	8,354,356	15,184	3,521	6,284	9,794	5,053	117,929	909,650	16,913	393,956	162,584	606,740	49,162	28,275	77,437	1,531,415	2,383,211	3,914,626	786,858	4,701,484
North	347 ^½	143,008	486,949	629,957	601	1,185	2,319	3,353 .\	2,469	29,584	283,994	10,421	1,395,940	73,334	118,541	8,014	18,702	26,716	307,808	628,693	936,501	440,929	1,377,430
Total	1268 <u>1</u>	2,836,909	6,147,404	8,984,313	15,785	4,706	8,603	13,147	7,522	147,513	1,193,644	27,334	1,789,896	235,918	725,281	57,176	46,977	104,153	1,839,223	3,011,904	4,851,127	1,227,787	6,078,914
1881.														•						:			
South and West	767	1,912,367	4,511,270	6,423,637	13,493	2,855	5,660	7,874	3,739	59,687	789,041	15,483	278,172	168,512	524,239	43,038	20,381	63,419	1,340,047	1,845,390	3,185,437	640,875	3,826,312
North	228 }	111,998	371,677	483,675	486	772	1,900	2,538	1,003	5,865	143,352	11,441	1,052,164	55, ⁸ 75	101,403	7,844	16,929	24,773	263,848	474,644	738,492	321,889	1,060,381
Total	9951	2,024,365	4,882,947	6,907,312	13,979	3,627	7,560	10,412	4,742	65,552	932,393	26,924	1,330,336	224,387	625,642	50,882	37,310	88,192	1,603,895	2,320,034	3,923,929	962,764	4,886,693
Increase	273	812,544	1,264,457	2,077,001	1,806	1,079	1,043	2,735	2,780	81,961	261,251	410	459,560	11,531	99,639	6,294	9,667	15,961	235,328	691,870	927,198	265,023	1,192,221

No. 14.

Return of Working Expenses and Rolling Stock during Year 1882.

	n, er.		•		,			Miscellaneous	,		,	Porportion	Rolling	Stock on	31st De	c., 1882.
Year and Name of Railway.	Milcs open, 31 December.	Locomotive Power.	Carriage and Waggon Repairs	Maintenance and Renewal of Way.	Traffic Charges, Coaching and Merchandise.	Compensation— Personal Injury &c.	CompensationDamage to and Loss of Goods.	Working Expenditure and General Establishment.	Total Working Expenses.	Total Earnings.	Net Earnings.	per cent. of Expendi- ture to Total Earnings.	Loco- motives.	Passen- ger. Stock.	Goods Stock,	Total Vehicles
1882.		£ s. d	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.				·	
South and West	921	255,501 12	35,308 10 1	215,264 16 7	206,784 11	3,162 2 5	868 8 1	20,742 17 10	737,632 19 11	1,321,327 9 8	583,694 9 9	55.83	213	403	4,194	4,810
North	347½	58,984 19	2 11,212 2 11	46,724 2 2	71,340 12	80 0 0	180 17	8,479 14 5	197,002 8 5	377,536 1 2	180,533 12 9	. 52.18	55	161	1,251	1,467
Total	1,268½	314,486 11	6 46,520 13 6	261,988 18 9	278,125 4	3,242 2 5	1,049 6 4	29,222 12 3	934,635 8 4	1,698,863 10 10	764,228 2 6	55.05	268	564	5,445	6,277
			-			•			1	•						
1881.				·		•			,		1					!
South and West	767	196,284 16 1	30,345 8 4	149,736 10 11	178,271 18	3,933 9 5	292 12 11	15,203 19 2	574,068 12 1	1,133,289 14 3	559,221 2 2	50.62	182	376	3,757	4,315
North	228½	48,722 8	1 10,119 8 4	39,084 3 2	60,323 14 10	57 19 0	127 1 3	5,830 13 3	164,265 11 11	310,935 18 6	146,670 6 7	52.82	51	154	1,092	1,297
Total	9951	245,007 4 1	40,464 16 .8	8 188,820 14 1	238,595 13 4	3,991 8 5	419 14 2	21,034 12 5	738,334 4 0	1,444,225 12 9	705,891 8 9	21,15	233	530	4,849	5,612
Increase, 1882	273	69,479 6	7 6,055 16 4	73,168 4 8	39,529 10 9)	629 12 2	8,187 19 10	196,301 4 4	254,637 18 1	58,336 13 9	3.90	35	34	596	665
Decrease, 1882		•••••				749 6 0		,								••,•

No. 15.

TRAMWAY LINES OPENED FOR TRAFFIC (CITY AND SUBURBAN.)

Return showing the Working Expenses, Number of Passengers, Earnings, and Rolling Stock for years 1882 and 1881.

	Miles	Miles	,	•	(Working	Expenses.	•		No. of		Earnings.			n per pendi- nings.	Rolling	Stock, 31	Decemb	er, 1882.
Year.	opened for Traffic.	travelled by Trains.	Locomotive Power.	Carriage Repairs.	Maintenance and Renewal of Way.	Traffic Charges.	General Charges.	Total.	Passenger Fares collected.	Passenger.	Miscel- laneous.	Total.	Net Earnings.	Proportion per cent. of Expendi- ture to Earnings.	Motors.	Cars.	Trucks.	Total.
			е. 3:	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d		£ s. d	£ s. d.	£ s. d.	£ s. d.				1	
1882	22	670,649	52,735 19 6	7,973 9 8	17,481 7 7	22,836 0 1	2,109 2 1	103,135 18 11	15,269,100	125,836 5 8	365 12 11	126,201 18 7	23,065-19 8	81.72	46 ·	81	5	132
1881	9 1	296,906	22,818 15 4	3,331 I 4	13,552 1 4	11,068 12 6	1,336 7 1	52,106 17 7	7,090,125	61,921 6 10	627 12 9	62,548 ig 7	10,442 2 0	83.30	29	47	••	76
							· ·										•	
Increase 1882	121	373,743	29,917 4 2	4,642 8 4	3,929 6 3	11,767 7 7	772 15 0	51,029 1 4	8,178,975	63,914 18 10		63,652 19 0	12,623 17 8		17	34	5	56
Decrease 1882		•••••		••••••		· ••••••	•	-			261 19 10			1.28			•••.	

Note —The actual amount expended in 1882 on permanent-way was £31,806 17s. 7d., but the materials used in the relaying of the Redfern to Hunter-street length having been guaranteed to last 7 years, 3 only of their value is chargeable to the year 1882; and this sum, with the ordinary repairs of the road, is included in the amount shown above as permanent-way expenses. The total expenditure is shown in the detailed statement of working expenses, see No. 21.

No. 16.

CAMDEN TRAMWAY.

RETURN of EARNINGS from Traffic in Passengers and Goods during the year 1882.

			Ģ	ross Earnings fr	om Coaching Traff	le.			Gross Ear	nings from Go	oods Traffic.		·
Year and Name of Tramway.	Miles open		Passengers.		Excess-Luggage, Parcels, Cloak								Gross Earnings from these
	for Traffic.	rst and 2nd Class Passengers.	Holders . of Season Tickets.	Total from Passengers.	Room, Horses, Carriages, and Dogs.	· Mails.	Total from Coaching.	Live Stock.	Minerals.	· Wool. ·	General Merchandise.	, Țotal from Goods.	Sources.
.00		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1882. Camden Tramway	7½	£ s. d.	32 3. 3	£ s. d.		ł	1,287 12 9			4 10 2			2,152 10 3
	`							 ·]]		

CAMDEN TRAMWAY.

Return of Traffic in Passengers and Goods during the year 1882.

·	Miles		Passe	ngers.		<u> </u> '.							isc.	Nu	nber of Tra	ins.	N	lumber of	miles travell	led by Train	s
Year and Name of Tramway.	open for	First Class.	Second Class.	Total 1st and 2nd Class.	Season Tickets.	Carriages.	Dogs.	Cattle.	Sheep.	Pigs.	Minerals.	Wool.	Merchand	Passenger.	Goods.	Total.	Passenger.	Goods.	Total Train miles	Ballasting, Shunting, &c.	Total.
1882.	,	No.	No.	No.	No.	No.	No.	No.	No.	No.	Tons.	Bales.	Tons.	No.	No.	No.	No.	No.	No.	No.	No.
Camden Tramway	7⅓	1,611	25,527	27,138	8	4	10	12	263	103	32	20	5,618	844	846	1,690	13,420	9,587	23,007	2,289	25,296

CAMDEN TRAMWAY.

RETURN of Working Expenses and Rolling Stock, during the year 1882.

Miles	Y	Carriage and	Maintenance and	m m m	General Charges.	Total Working	Total Earnings.	Net Earnings.	Proportion per cent. of Expendi-	•	Rolling Stock	on 31 December.	
opened 31 December	Locomotive Power.	Wagon repairs-	Maintenance and Renewal of Way.	Traffic Charges.	General Charges.	Expenses.	10tal Larnings.	Net Earnings.	ture to total Earnings.	Motors.	Cars.	Trucks.	Total.
71/2	£ s. d.	£ s. d. 40 17 1	£ s. d.	£ s. d.	£ s. d. 29 15 11	£ s. d. 2,719 19 0	£ s. d. 2,152 10 3	Nil	126.34	.2	3	Railway Goods Trucks are used.	' 5

No. 17.

List of Motors on Tramways of New South Wales, received during the year 1882.

	, ,		- Diameter of Wh	ecis.	. , ,	Length of	Wheel Base.	Maker's Name.	Commenced to run.
No .	Description of Motor.	Diameter and position of Cylinders.	Leading. Driving.	Trailing.	Coupled or Single.	Stroke.	wheer Base.	maker's Name.	Commenced to tun.
			ft. in. ft. in.	ft. in.		ft. in.	ft. in.		
30	Motor, 4 wheels	Horizontal, 9" diameter	2 8 2 8		Coupled	1 0	5 6	Baldwin Company	26 Jan., 1882.
31	Do 4 do	do 9" do	2 8 2 8		do	1 0	5 6	do	. 2 June, "
32	Do 4 do	do 9" do	2 8 2 8		do	ı o	5 6	do	. 26 Jan., "
33	Do 4 do	do 9" : do	2 .8 2 8		ġo	1 0	5 6	do	16 Feb., ,,
34	Do 4 do	do 11" do	2 11 2 11	,	do '	1 4	6 0	do	ı July, "
35	Do 4 do	do 11" do	2 11 2 11		do	1 4	6 0	do	. і " "
36	Do 4 do	do 11" do	2 11 ,2 11	••••	do	1 4	6.0	do	. 20 June, "
37	Do 4 do	do 11" do	2 11 2 11	••••	do	.I 4	6 0	do	. 3 July, ,,
38	Do 4 do	do 11" do	2 11 2 11		do	1 4	6 0	do	. 23 Aug., ,,
39	Do 4 do	do 11" do	1 1 2 11	·	: do	1 4	6 0	'do '	, 22 ,, ,,
40	Do 4 do	do 11" do	2 [1 . 2 . 11]		do ;;	1, 4	6 ; 0;	; do:	25 " "
41	Do '4 do	do 11" do	2 11 2 11		do	1 4	6.0	do	. 24 ,, ,,
. 42	Do 6 do	do 11½" do	,2 6 2 6	•••••	_ do	1 б	6 0	Kitson & Company	. 2 Oct., "
43	Do 6 do	do 11½" do,	2 6 2 6		. do	т 6	6 0	do	. 21 ,,
44	Do 4 do	do 10" do	2 11 2 11		do	I 2	5 6	Baldwin Company	14 Dec., ,,
45	Do 4 do	do 10" do	2 11 2 11	· · · · · · · · · · · · · · · · · · ·	do	I' ' 2	5 6	do	16 " "
50	Combined Motor and car	Vertical, 7½" diameter	2 4½ 2 4½		do	1 0	4 0	Kitson & Company	20 Nov., "
	.			<u>l</u>	<u> </u>		<u> </u>		<u> </u>

No. 18.

List of Tramway Rolling Stock (exclusive of Motors) received during the year 1882.

Descrip	tion and Class	•		No.	Name	f Maker.	Carrying		eight.		Diam		No. of			
					1 tanie o	n maker.	capacity.		eigiiu		Whe	els.	Wheels.	Con	mmenced	to run.
Double-deck sl	iding doors		${ m Class} \ { m A}^3$	48	Hudson · (Limi	Brothers	60	Tons	s cwt.	qrs. o	ft.	in.	6		Feb.,	1883
Do	do	•••	\mathbf{A}^3	· 49	do		60	4	I 2	o	2	0	6	10	August	, 1882
Do	do		\mathbf{A}^3	50	do	••••	60	4	12	o	2	0	6	10	"	"
Do	do .	•••	A4	51	do	••••	6о	4	12	0	2	0	4	12	,,	,,
: Do	do		Å4	52	do,,	••••	60	4	12	0	2	0	4	26	"	"
Do	do		A4	- 53	do	•••••	60	4	12	0	2	o	4	30	"	"
\mathbf{D}_{0}	do	•••	A4	54	do	•••••	60	4	I 2	o	2	o	4	2	Sept.,	,,
Do	do		A4	55	, go	••••	6о	4	12	0	2	0	4	2	"	٠,
D o	do		A4	56	do		60	. 4	12	0	2	0	4	2	,,	,,
Do	do		A4	57	do		60	4	12	0	2	o	4	2	,,	,
Do	do	•••	A4	58	do		60	4	12	0	2	0	4	2	"	,,
Do	do		A4	59	do		60	4	12	0	2	0	4	6	,,	,,
. Do	do	•••	A4	бо	do	•••••	60	4	I 2	٥	2	0	4	7	"	,,
\mathbf{D}_{0}	do		A4	61	ďο		60	4	I 2	0	2	o	4	7	,,	,,
Do	do		A4	62 [,]	do		60	4	12	٥	2	o	4	8	**	,,
$\mathbf{D_0}$	do		A4	63	do		6о	4	. 12	٥	2	0	4	19	,,	"
Do	do	·.:.	A4	64	do		60	4	12	٥	2	0	4,	23	"	,,
\mathbf{Do}	do	•••	A4	65	do		6о	4	12	٥	` 2	o	4	2	Nov.,	,,
Do	do	•••	A4	66	do		60	4	12	٥	2	0	4	18	,,	,,
Do	do		À4	67	do	,	, 60°	4	12	0	2	o	4	18	,,	,,
Do	do		A4	68	do _.		60	4	12	0	2	0	4	18	,,	"
Do .	do		A4	69	do		60	4	12	0	2	0	4	8	Decemb	
Do	do		A4	- 70	do		60	. 4	12	0	2	0	4	íз	~))	,,
Do	do		A4	71	do		60	4	12	0	2	0	4	20	. ,,	,,
$\mathbf{p}_{\mathbf{o}}$	do		A4	73	ďo	·	60	4	12	0	2	0	4	23		"
Do	do		A5	. 81	Thomas	Wearne	60	•		. 0	2	0	. 4		October	
Do	φo		A5	82	do	·	60	4	12	0		0	4		Nov.,	, ,,
Do -	do ·		A5	84	do	·	60	4	12	0		0	4		Decemb	
Do	do		\mathbf{A}^6	95	Robert I	Ritchie	60	4		. 0		0	4		Nov.,	"
\mathbf{Do}	do	•••	\mathbf{A}^6	96	do 		60	4	12	0	2	0	4	21	,,	"
, Do	do		\mathbf{A}^6	97	do		60	4	12	٥	2	٥	4		Decemb	
Do	do		A6	98	do		60	4	12	0	2		4	29	,,	,,
•			.				ř	•					.	•		

No. 19. WORKING EXPENSES.

Schedules of Expenditure in Revenue Account, during the year ending 31 December, 1882.

Schedules.	Northern.	South, Western,	1
	Normern.	and Richmond.	Total.
LOCOMOTIVE BRANCH.	£ s. d.	£ s. d.	£ s. d.
GENERAL EXPENSES.—Covers charges common to Nos. 10 to 53. 1. Superintendence and office expenses 2. Holidays 3. Half pay 4. Casualities 7. Repairs of machinery and workshops 8. Fuel and lighting 9. Sundries.	1,623 0 0 19 3 9 136 15 10 1,402 10 8	.5,588 3 9 4,986 13 7 188 13 0 1,987 11 7 4,620 0 11 2,125 14 10 804 13 10	7,578 5 5 6,609 13 7 207 16 9 2,124 7 5 6,022 11 7 2,670 2 5 885 16 10
LOCOMOTIVES.—RUNNING EXPENSES. 10. Inspectors and foremen 11. Wages of enginemen and firemen 12. Wages of engine-cleaners and running shed labourers 13. Cost of fuel for engines and wages of fuelmen 14. Water, wages of pumpers, and repairs of pumping engines 15. Oil, tallow, waste, flax, and packing, &c. 16. Hand tools and implements 18. Watches. 19. Sundries.	4,825 2 2 9,318 6 5	6,070 1 9 71,569 16 10 18,796 6 9 59,421 8 6 13,877 18 5 18,428 10 2 821 18 0 60 0 0 408 16 10	6,623 3 1 89,366 1 0 23,621 8 11 68,739 14 11 15,780 19 9 22,147 4 11 948 3 10 123 16 6 437 12 6
LOCOMOTIVES — REPAIRING EXPENSES. 20. Foremen	1,323 18 3 8,846 11 1 4,021 6 1 660 4 6 1 19 5 0 9 2	1,607 14 2 34,025 19 4 8,952 4 0 1,137 18 8 0 10 2 20 17 3	2,931 12 5 42,872 10 5 12,973 10 1 1,798 3 2 . 2 9 7 21 6 5
CARRIAGES AND WAGGONS — Covers charges common to Nos 40 to 53 30. Inspectors and foremen	234 17 6 453 18 10 81 13 3 0 6 2	482 10 4 4,373 13 0 226 11 9 16 4 9	717 7 10 4,827 11 10 308 5 0 16 10 11
	3,387 0 2 1,619 6 5 	8,729 4 3 4,691 8 1 419 1 3 184 18 6	12,116 4 5 6,310 14 6 419 1 3 186 0 5
WAGGON REPAIRS 50. Wages for repairs and renewals 51. Materials ditto 52. Additions and improvements 53. Casualties	3,331 10 8 2,096 17 1 5 10 11	8,499 3 2 6,239 15 0 1,188 5 1 257 14 11	11,830 13 10 8,336 12 1 1,188 5 1 263 5 10
Total, Locomotive Branch $\ldots \mathscr{L}$	70,197 2 1	290,810 2 5	361,007 4 6
PERMANENT WAY BRANCH. General Expenses — Covers charges common to Nos. 70 to 86. 60. Superintendence and office expenses 61. Repairs of workshops, &c. 62. Holidays 63. Half pay 65. Stationery and printing 66. Fuel and lighting	1,331 8 5 25 13 0 1,211 12 2 12 1 6 11 5 5 29 12 0	6,696 8 4 1,639 19 9 5,020 13 2 130 9 3 3 11 11 267 19 2	8,027 16 9 1,665 12 9 6,232 5 4 142 10 9 14 17 4 297 11 2
MAINTENANCE OF WAY. 70. Inspectors, &c. 71. Repairs of permanent way 72. Tools and implements 73. Ballasting 74. Repairs of machinery and workshops 75. Repairs of tunnels, viaducts, bridges, &c. 76. Repairs of sidings, turn-tables, &c. 77. Repairs of gates, fences, &c. 78. Relaying of line 79. Repairs of stations, platforms, gate-houses, &c. 80. Repairs of signals 81. Repairs of approach roads 82. Casualties 83. Slips and flood repairs 84. Fuel and lighting 85. Repairs of wharves, &c. 86. Sundries	1,711 1 8 30,845 13 6 1,234 7 2 2,422 11 6 9 7 11 2,395 11 7 335 17 5 1,126 11 0 181 18 9 2,945 18 9 118 8 5 195 10 4 6 12 8 459 3 7 30 14 4 83 1 1	2,938 12 9 109,831 17 1 4,899 6 9 7,143 13 6 1,215 15 1 22,256 0 1 2,141 8 10 5,219 2 9 12,546 12 7 19,208 17 6 2,366 19 6 5,245 13 6 5,245 13 6 5,252 1 5 1,531 13 3 388 1 0	4,649 14 5 140,677 10 7 6,133 13 11 9,566 5 0 1,225 3 0 24,651 11 8 2,477 6 3 6,345 13 9 12,728 11 4 22,154 16 3 2,485 7 11 5,441 3 10 2,558 14 1 1,990 16 10 388 1 0 30 14 4 2,103 0 6
Total, Permanent Way Branch£	46,724 2 2	215,264 16 7	261,988 18 9
64→Ω			

No. 19-continued.

Schedules.	Northern.	South, Western, and Richmond.	Total.
TRAFFIC BRANCH. General Expenses.—Covers charges common to Nos. 110 to 129. 90: Cost of management and office expenses 91. Holidays 92. Half pay 93. Wages of signalmen, switchmen, gatekeepers, &c. 94. Line telegraphs 95. Trainage on private lines. 96. Advertising 97. Greasing and oiling passenger and goods stock, wages and stores 98. Clothing, watches, &c. 99. Stationery and printing 100. Repairing station furniture, fittings, and implements 101. Making and repairing lamps 102. Fuel and stores 103. Casualties 104. Sandries	£ s. d. 12,877 17 5 783 7 2 54 9 1 7,909 15 2 2,802 8 9 86 3 8 1,990 2 11 650 10 3 37 16 7 1,300 11 7 288 2 1 3,189 7 0 1 6 8 165 4 6	£ s. d. 33,920 7 6 1,627 4 3 51 7 8 12,637 17 11 12,522 15 8 5 7 4 3,889 0 6 2,710 17 4 645 6 9 6,293 18 4 1,361 8 6 11,662 8 5 90 12 1 2,615 9 6	£ s. d. 46,798 4 11 2,410 11 5 105 16 9 20,547 13 1 15,325 4 5 86 3 8 5 7 4 5,879 3 5 3,361 7 7 683 3 4 7,594 9 11 1,649 10 7 14,851 15 5 91 18 9 2,780 14 0
COACHING CHARGES. 110. Wages of clerks, guards, porters, &c	3 3 5 3 0 19 3	41,098 2 10 3,162 2 5 3 0 0 236 16 3 417 12 10 5 8 3	49,747 4 0 3,242 2 5 3 0 0 747 15 6 420 16 3 5 8 3
GOODS CHARGES. 120. Wages of clerks, guards, porters, &c. 121. Compensation 122. Horse-hire 123. Travelling expenses 124. Making and repairing sheets 125. Steam cranes and staiths 126. Cranes and weighing machines 127. Wharfingers and wharf expenses 128. Casualties 129. Receiving and delivering goods	180 17 5 377 8 4 	65,742 19 2 868 8 11 276 0 0 0 4 4 4,701 13 5 325 4 3 1,099 4 6 138 8 9 11 2 4 2,694 13 1	84,394 0 6 1,049 6 4 653 8 4 0 4 4 6,583 13 4 8,535 3 3 1,235 4 7 922 5 9 11 2 4 2,694 13 1
Total, Traffic Branch \pounds	71,601 9 9	210,815 3 1	282,416 12 10
GENERAL CHARGES. Covers charges common to all the foregoing Subdivisions. 130. Proportion of general establishment 131. Auditing	31 1 0 18 8 0 90 0 0	6,224 5 8 4,438 5 8 0 10 0 416 1 0 221 2 0 1,035 7 5 6,630 3 3 107 13 1 1,669 9 9	8,651 6 4 6,172 0 1 31 11 0 434 9 0 311 2 0 1,124 12 1 8,844 14 0 107 13 1 3,545 4 8
Total, General Charges£		20,742 17 10	29,222 12 3
Grand total, Working Expenditure£	197,002 8 5	737,632 19 11	934,635 8 4
SUMMARY. Locomotive branch Permanent way branch Traffic branch General charges	70,197 2 1 46,724 2 2 71,601 9 9 8,479 14 5	290,810 2 5 215,264 16 7 210,815 3 1 20,742 17 10	361,007 4 6 261,988 18 9 282,416 12 10 29,222 12 3
Total Expenditure£	197,002 8 5	737,632 19 11	934,635 8 4

No. 20.

Abstract of the amount of Working Expenses on the different Lines during 1881 and 1882, showing the Increase and Decrease in 1882.

		1881.			1882.			Increase.			Decrease.	
Heads of Expenditure.	South and West.	North.	Total.	South and West.	North.	Total.	South and West.	North.	Total.	South and West.	North.	Total.
- · · · D	-	•		£	0			_	•			
Locomotive Power and		£	£		£	£ 1	£	£	€	£	£	£
repairing Engines Carriage and Waggon	196,285	40,722	245,007	255,501	50,905	314,486	59,216	10,263	69,479	;	•••	•••
repairs	30,345	10,119	40,464	35,309	11,212	46,521	4,964	1,093	6,057		i	
Maintenance and renewal	20,242	10,119	40,404	33,309	1:,212	40,02-	4,904	-,093	0,037	•••	'''	•••
of way.	149,737	30,084	188,821	215,265	46,724	261,989	65,528	7,640	73,168		,	
		60,324	238,596	206,785	71,340	278,125						
Compensation, personal	3,933				80			22	22	77.I		77.
Compensation, goods	293			868	181	1,049	575 ¹	54	629			
Miscellaneous	15,204	5,831	21,035	20,743	8,480	29,223	5,539	2,649	8,188	•••		
Total£	574,069	164,265	738,334	737,633	197,002	934,635	164,335	32,737	197,072	771		77

No. 21.
Working Expenditure of City and Suburban Tramways during the Twelve Months ending December 31, 1882.

1					
LOCOMOTIVE BRÂNCH.	£		d.	PERMANENT WAY BRANCH.—contd. É s.	ď.
	æ	ð.	u.		u.
GENERAL EXPENSES.—Covers charges common to Nos. 10 to 53.	-			MAINTENANCE OF WAY.	
I. Superintendence and office expenses	1,515			70. Inspectors, &c	
2. Holidays 3. Half-pay	785	3	2	71. Repairs of permanent way	
4. Casualties	103	8	6	73. Ballasting 24 4	
7. Repairs of machinery and workshops	771		6	74. Repairs of machinery and workshops 1 3	
8. Fuel and lighting	119 517			77. Repairs of gates, fences, &c	-
	٠,			79. Repairs of stations, platforms, gate-	
Locomotives.—Running Expenses.				houses, &c	
10. Inspectors and foremen	247			82. Casualties	4
11. Wages of enginemen and firemen	17,349	7	6	83. Slips and flood repairs	_
shed labourers	4,492	1	10		
13. Cost of fuel for engines and wages of fuelmen	8,855	4	'n	Total, Permanent Way Branch£ 31,806 7	7
14. Water wages of pumpers, and repairs			·		
of pumping engines	689 2,278	7	7	TRAFFIC BRANCH.	
16. Hand tools and implements	92	8	ī	GUNDAT EXPLINEDS Course of anges common	
19. Sundries	150	13		GENERAL EXPENSES.—Covers charges common to Nos. 110 to 129.	
LOCOMOTIVES REPAIRING EXPENSES.				90. Cost of management and office expenses 3,017 1	
20. Foremen	518	12	9	91. Holidays	
engines	10,551	9	4	93. Wages of signalmen, switchmen, gate-	Ū
22. Materials for ditto 23. Hand tools and implements	3,157	15	2	keepers, &c	2
24: Additions and improvements to loco-	391	12	1	stock, wages and stores	0
motive engines	io3			98. Clothing, watches, &c	_
25. Sundries	. 3	16	1	99. Stationery and printing 24 13	10
CARRIAGES AND WAGGONS.—Covers charges				and implements	
common to Nos. 40 to 53.				101. Making and repairing lamps	
30. Inspectors and foremen	21 877	16		103. Casualties	
32. Hand tools and implements	178			104. Sundries	2
33. Sundries		I		Colorena Calbara	
CARRIAGE REPAIRS.				COACHING CHARGES.	
40. Wages for repairs and renewals	4,159	13	ı'n	i 10. Wages of clerks, guards, porters, &c 9,077 5	
41. Materials ditto	2,473	13	7	111. Compensation	
42. Additions and improvements	4 252	18 16			
	3-		J	Total, Traffic Branch£ 22,836 o	, 1
WAGGON RÉPAIRS.					
50. Wages for repairs and renewals	I 2	ΙÌ	8	GENERAL CHARGES.	
53. Casualties	ő	3 6	9	Covers charges common to all the foregoing	
Total, Locomotive Branch£	60,709	9	2	Subdivisions.	
				130. Proportion of general establishment 1,153 18 131. Auditing 61 3	
PERMANENT WAY BRANCH.				133. Stationery and printing 6 14	- 7
GENERAL EXPENSES.—Covers charges common				134. Travelling expenses	
to Nos. 70 to 86.				136. Store expenses 20 3	4
	573			137. Repairs of offices and buildings 6 9	
60. Superintendence and office expenses		18	8	138. Sunaries 0 10	
60. Superintendence and office expenses 61. Repairs of workshops, &c	47 444		8	138. Sundries	
60. Superintendence and office expenses 61. Repairs of workshops, &c	47 444 4		8 0	Total, General Charges£ 2,109 2	

SUMMARY OF EXPENDITURE.			
	£	s.	d.
Locomotive Branch	60,709 31,806 22,836	9	2
Permanent Way Branch Traffic Branch	31,806	7	7
Traffic Branch	22,836	o	I
General Charges	2,109		
Total Expenditure			11
Sectional Returns	14,325	0	0
	£102.125	18	7.7

No. 22. Working Expenditure of Camden Tramway during the Twelve Months ending December 31, 1882.

LOCOMOTIVE BRANCH.	£	8.	d.	PERMANENT WAY BRANCH. GENERAL EXPENSES.—Covers charges	£	s.	d.
GENERAL EXPENSES.—Covers charges common to Nos. 10 to 53.				common to Nos. 70 to 86. 60. Superintendence and office expenses	4	18	0
2. Holidays	o	6	0	MAINTENANCE OF WAY. 70. Inspectors, &c	628	15 15 8	3
LOCOMOTIVES.—RUNNING EXPENSES.				73. Ballasting	11 3	2 17 4	5 9
II. Wages of enginemen and firemen	558	12	6	79. Repairs of stations, platforms, gate- houses, &c	_	12	•
12' Wages of engine-cleaners and running shed labourers	73	11	9	Total, Permanent Way Branch £			
13. Cost of fuel for engines and wages of fuelmen	111	Q		TRAFFIC BRANCH.			
14. Water, wages of pumpers, and repairs of pumping engines		15	·	GENERAL EXPENSES.—Covers charges common to Nos. 110 to 129. 90. Cost of management and office expenses.	. 05		-
15. Oil, tallow, waste, flax, and packing, &c.		12		93. Wages of signalmen, switchmen, gate- keepers, &c.		10	-
r6. Hand-tools and implements	-	4		97. Greasing and oiling passenger and goods stock, wages and stores	o	5 16	3
				100. Repairing station furniture, fittings, and implements		4	
LOCOMOTIVES.—REPAIRING EXPENSES.				101. Making and repairing lamps	I	10	4
21. Wages for repairs and renewals of engines	137	3	8	104. Sundries	2		
22. Materials ditto	82	4	4	110. Wages of clerks, guards, porters, &c	212 416	3	9
23. Hand tools and implements	. 2	16	5	Total, Traffic Branch			
	,			GENERAL CHARGES.	193	-,	
CARRIAGES AND WAGGONS.—Covers charges common to Nos. 40 to 53.		•		Covers charges common to all the foregoing Subdivisions.			
31. Carriage examiners	. 22	16	4	130. Proportion of general establishment	0	7 15	
Carriage Repairs.				132. Advertising 133. Stationery and printing 135. Office expenses and contingencies	ŏ	0 3 13	
40. Wages for repairs and renewals	12	. 7	4	136. Store expenses		14 2	2 10
1. Materials ditto	5	13	5	Total, General Charges£	29	15	11
Total, Locomotive Branch £	1,189	11	11	Grand Total, Working Expenditure£	2,719	19	, 0

SUMMARY.	£	s.	d.
Locomotive Branch	1,189	11	Ιİ
Permanent Way Branch	706	13	9
Traffic Branch	793	17	5
General Charges	29	15	11
Total, Expenditure	£2.710	ΤΩ.	_

No. 23.

STATEMENT of the Number and Class of Rolling Stock manufactured by different Contractors during the year 1882, Great Southern, Western, Richmond, and Northern Lines.

		Lo	como	tives.						•		
				Passer	ger.			Goods	s.		Total.	
SOUTHERN AND WESTE Beyer, Peacock, & Co	••••••••••			3		,		16 4			19 4 8	
Atlas Company								20	••		31	
Northern.											31	
Beyer, Peacock, & Co								4		_	4	
Total, all lines, during			[. 11				24			35	
		G	oods	Traffic.				-				,
			ns.	Vans.	sided	ons.	l Vans.	n-sided.	198.	ggons.	ucks.	
	· ·		Brake Vans.	Accident Vans.	B High-sided	Wagg	C Covered Vans.	D Medium-sided	Sheep Vans.	Cattle Waggons	Water Trucks.	Total.
SOUTHERN AND WESTER	•		-		,	}						
Hudson Bros				 6			20 	3 ¹ 7 	35 	39	6` 	357 74 6
Total, South and West	*************			6	:	2 -	20	3 ¹⁷	35	39	6	437
NORTHEBN. R. A. Ritchie Hudson Bros						- 1	24 	81 ⁻	30	18	 6	72 .87
Total, Northern							24	81	30	18	6	159
Total, all lines, during 18	82		12	6	2	 }	44	398	65	57	12	596
]	Passe	nger	Traffic.		· · · ·	`	•	•		_	
	Sleeping Carriage.		-class iages.	Compos Carriag	ite es.	Comp Brake	osite Vans.	Second Carri		Workmen's Vans.	7	otal.
SOUTHERN AND WESTERN.	į											
Hudson Bros		l	6			•	5		5	4 3 		² 4 3
Total, South and West	ı		6	3			5	, .	5	7		· 27
NORTHERN. Hudson Bros Locomotive Department	 			į 6		••			- 1			6
Total, Northern		·		7						***	<u> </u>	7
Total, all lines, during 1882	ı		6	10			- 5		;	7		34

No. 24.*,
of Goods Lave Stock &c. carried on Great Southern Western

RETUEN showing the	description	ons and qua	ntities of	Goods,	LIVE	STOCK,	&c.,	carried	on G	l reat Southern,	Western,
· ·		and North	ern Rail	wāýs; for	the ye	ars ,188	l and	1882:			

,	L.	188	31.			188	32.	
Description of Goods.	Great South	hern and Western.	Grea	t Northern.	Great Sout	hern and Western.	Grea	at Northérn.
	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.
A CLASS.		£ s. d.	,	£ s. d.		£ š. đ.		£ s. d.
Antimony ore a Artificial manure Asphalt (in bags) Bark b Battens, &c. (over 40 miles) a Bones b Bones (in bags) Brain and Pollard b Bricks Chaff (by weight)	534 2,9 <u>86</u> 99 492 4,405 30,245 289		591 144 80 i,18i 1,685	558 5 4 4 16 8 75 3 8 62 10 1 375 4 3 276 19 5 98 19 8	162 37 2,223 76 250 494 4,924 31,045	39 3 6 11 11 3 553 15 7 70 2 3 125 10 10 341 7 5 2,170 7 8 3,389 8 3	466 34 10 134 90 210 1,308 1,422	450 16 3 7 13 4 1 2 2 45 13 6 44 1 0 84 7 6 511 12 5 250 13 8
Clay a Coke, owners' trucks Flour Fruit Garden produce a Glue-pieces, wet Green fodder	14,729 11,995 2,361	8,045 17 7 4,062 15 9 1;083 11 8	5,726 1;100 577 	1,996 I 4 730 3 8 323 6 7	 14,722 9,748 1,640 17 29	6,529 14 4 3,542 4 5 1,099 4 5 5 9 -7 7 17 1	1,442 6,801 1,131 773	- 127 9 3 2,321 14 7 737 18 9 355 18 1
Grain a Guano a Hides, wet. Iron, pig, pipes, &c. (up) Iron, bar, &c. (up) a Lime	27,622 .71 2,540	. 37 3 i 1;507 7 7	8,800 	4,061 14 2	29,227 744 1,336 3,459	11,897 10 1 0 2 6 446 19 6 716 2 1 1,932 16 9	7,354 187 	80 11 5 2,763 9 1 0 8 7 119 8 5
Millet seed b Ores b Palings (over 40 miles) a Palings Paper material Potatoes a Pottery ware	2,131 2,036 1,356 10,099	0 19 4 950 5 7 1,062 0 11 209 6 6 5,481 1 11	8,659 607 4,078	0 19 6 229 0 8 414 19 5 0 1 3 1,715 3 3	2;522 1,757 2,923 1,473 11,736 455	1 6 0 1,159 i5 9 1,023 18 8 673 15 4 218 1 3 7,095 13 5 317 3 8	6,118 311 246 4 4,951	215 8 10 244 15 1 118 15 8 0 7 11 1,773 7 11 59 1 3
a Regulus. Sawdust Scrap iron. a Shingles a Slates.	91 34	26 7 i		° 5 5	151 139 144	53 8 10 23 15 11 	3	0 9 0
Terra-cotta b Timber, undressed (over 40miles) a Timber, dressed a Timber, log a Timber, sawn a Tobacco, colonial leaf	7,782	12 2 5 4,943 12 9	39 4,424 	14 19 0 2;851 4 0	9 8,775 3,735 1,414 5,282 359	11 4 8 6,221 15 7 2,640 5 0 459 14 9 2,294 9 9 347 10 2	71 3,931 575 535 774 40	19 15 1 2,173 13 9 368 2 9 139 0 2 279 1 9 12 12 10
Total	121,949	48,501 11 5	38,592	13,913 3 0	I	55,546 19 2	39,802	13,437 1 8
B Class.	.							
d Artificial manure d Battens (under 40 miles) c Bags and woolpacks. d Bones, loose c Bottles c Cases and casks c Cement c Charcoal, &c. (in bags) d Chicory root c Coal (in bags) Coke, owners' trucks c Coke, Government trucks c Colonial wine c Copper c Flower pots c Glue pieces, dry d Glue-pieces, wet d Guáno c Hides, dry d Hides, wet d Lime Marble, undressed	. 2	238 11 3 56 15 1 85 12 0 173 8 6 173 8 6 23 4 4 4 8 7 2,815 7 3 11,406 14 2 3 5 4	4,660 4,660 21 21 2 2 2 850 4	2 9 4 9 Î3 2 652 2 1 0 7 0 0 7 10 761 2 5 330 7 9 5 2 11	952 154 402 178 182 133 13830 20 101 24 164 647 1 19 26 14 57 3,231 14,883	245 I 3 39 10 7 707 0 4 100 3 I 282 0 4 119 3 4 13483 I2 0 15 I2 I 103 I3 0 17 3 9 414 6 2 1,207 I3 3 2 8 6 10 9 II 6 I3 6 42 II 2 2,504 I2 5 II,154 I5 I	32 26 209 148 67 21 275 34,460 303 455 42 2731 659	7 5 0 5 17 3 335 11 10 - 43 13 3 84 15 9 22 1 11 - 297 1 6
d Offal c Paper (over 1 ton) d Palings (under 40 miles) c Plaster of Paris. c Preserved meat	7,013	1,431 19 6	326	66 13 10 1 6 4	7 215 4,861 10 	2 9 9 130 10 3 988 3 4 18 0 2	7 209 I 24	13 0 I 47 5 8 0 I5 7 7 I2 I

No. 24-continued.

•		188	31.			188	32.	,
Description of Goods.	Great Sout	hern and Western.	Grea	t Northern.	Great Sout	hern and Western.	Grea	t Northern.
,	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.
B CLASS-continued.		£ s. d.		£ s. d.		£ s. d.		£ 5. d
Brought forward	,						::::::	*
Regulus	1,923 68	2,022 15 4	264	264 17 2	1,658	1,544 14 8	"'256	278 2
Salt, rock					707	969 0 3	222	' 285 I
Salt, dairy		•••••		**********	1,062	1,646 11 0	575	902 10
SheepskinsSleepers, railway	·····			***************************************	511 1,792	733 3 9 842 17 8	.99 1,318	678 3
Shingles	422	307 I I	96	77 7 0	425	276 19 0	. 71	46 4
Soda, caustic		• • • • • • • • • • • • • • • • • • • •			55.	61 17 7	7	16 5
Soda, crystals	1			***************************************	88 280	147 3 11 215 8 6	24 104	39 io
Tesselated and ornamental tiles		*.			4	3 2 3		// 3
Tin ore	:		······				916	1,501 2 1
Tobacco, colonial leaf	503 12,098	590 · 6 9 2,593 7 7	370 1,220	114 19 5 241 15 7	13,295	291 0 0 2,726 18 2	122 1,523	50 8 287 13
Whiting	12,090	2,393 / /	,	241 15 /	68	128 15 3	33	287 <u>13</u> 53 16
Matal	4			· · · · · · · · · · · · · · · · · · ·	18 100			
Total	43,217	21,843 12 9	8,810	2,528 11 10	48,423	29,331 3 7	12,946	7,258 0
C CLASS. Bottles	309	. 577 12 6	128	193 1 5	263	464 10 3	65	98 3
Cases and casks	509	473 11 8	91	98 11 9	257	260 9 10	96	133 17
Coke	23	10 14 1	30	8 4 3	41	36 1 1	36	11 '7
Copper	3,335	6,419 14 2	1,241	200 13 1 8 13 11	1,776	3,196 18, 5	864 3	151 6 4 7.
Glue-pieces, dry	65	39 15 8		0 1 0	64	29 7 9	· `	
Paper, over 1 ton	814	368 3 8	16	18 5 16	73 ¹	364 19 3	4	8 7
Salt (rock)	2,352	4,013 19 0	754	957 9 2	1,013	1,728 2 1	448	612 9
Slates		1,785 11 0 323 16 0	404 ! 78	702 9 11 80 8 9	1,125 ·428	1;713 9 7 335 10 2	335 14	536 19 15 2
Sleepers, railway		241 13 8	182	61 16 6				-, -
Tin ore		1 19 10	′ 2,648	4,142 7 6		·i	2,092	3,309° 1 3
Zinc, &c. (to A. K. Co.)		88 10 11			40	36 9 6		
Total	9,722	14,362 4 2	5,581 ———	6,472 3 1	5,764	8,207 9 1	3,957	4,881 14
D CLASS.				*	60			_
Charcoal, &c., in bags Coal, in bags	109	53 I II 73 2 I	· 32	42 6 5 5 11 3	109	63 4 4 72 19 8	16	20 ·5 4 16
Colonial wine	353	73 2 I 826 5 O	807	5 II 3 651 I4 6	317	775 0 4	694	529 13
Hides, dry	63	136 2 0	115	201: 16 5	57	80 0 2	101	43 4
Iron, pig, &c		92 12 4	,3 ₁	17 19 6	100	93 13 7	¹ 57	63 2
Oil-cake		0 6 2		*************	1	°1 10 4 2 15 •3		
Regulus	82	60 I 2		******				
Salt, rock	311	383 19 3					:	/ / /
,, dairy		6,570 13 11	2,033	'2,837 15 4 42 8 1	2,776 127	4,492 I3 6 53 I3 6	1,496	2,024 13 0 17
Soda caustic	165	229 3 1	37	60 7 2	158	194 7 3	20	40 0
Soda crystals	355	678 9 10	94	168 16 o	274	568 5 3	69,	129 8
Stone, cut Tesselated and ornamental tiles	1	341 18 0 32 6 6	56	100 ± 8 - 5 16 0	274	373 7 6 21 19 3	. 45 . 1	61 17 0 17
Timber, dressed		7,991 11 0	5 1,742	. 516 o 1,434 19 8	8,339	7,661 18 10	1,650	0 17 1,267 4
Whiting		443 17 4	106	147 5 0	178	359 16 11	80	117 19,
Total	14,571	18,136 8 9	5,086	5,717 I O	12,807	14,815 5 8	4,344	4,304 0 1
ist Class.				·			·	
Bags and woolpacks		4,621 7 8	622	1,502 18 10	1,267	3,889 4 6	930	1,532 13
Cement	2,594	4,680 5 9	2,886	6,771 2 8	3,916	6,006 7 11	923	1;583 14 188 . 7
Dobbins		402 6 10 295 3 0	153 35	73 18 1 87 9 2	1,800 66	892 11. 5 84 0 7	354 30	15 16
Glucose .:	50	53 8 4		************	61 j	37 7 2		***************************************
Hay, by weight		282 14 4	289	146 16 .3	1,086	565 2 10	519	- 270 I3
,, presses	24	28 5 0 100 10 1-	ī	0 11 4		'32 8 6 		13 9
,, (,, 340 ,,)	106	415 8 8	11		104	·769 2 6		
n 19	:			······································	1,030	2,480 11 2	441	1,150 7
,, nails (,, 300 ,,) Irón ,, (over 340 miles)	2 21	10 8 10 93 0 8				80 12 11		
", wire (", 300 ",")	335	1,308 o 4			329	1,346 1 11		*
,, ,, (,, 340 ,,)	.27	100 9 3					13	
Kerosene oil(to Sydney)	731	793 1 0	:	•••••	874	2,290 5 8 1,009 0 8	·1,161	2,660 7
Leather (to Sydney)		1,347 11 3	36	109 7 5	934	1,167 5 11	19	67 î
Locomotives, on wheels		-,5+, 3	6	1 14 11	9	13 4 0	48.	30 12
Carried forward					1			
OUTTION TOLINATURE		• • • • • • • • • • • • • • • •		***********				

a Carried at B rate till 3rd October, 1882.

b Carried at B rate from 4th October, 1882. e Carried at 1st Class till 3rd October, 1882.

c Carried at C Rate till 3rd October, 1882. d Carried at D Rate till f Carried at 1st Class from 4th October, 1882.

No. 24—continued.

		18	81.		Great Southern and Western. Great Northern.					
Description of Goods.	Great Sou	thern and Western.	Gre	at Northern.	Great Sou	thern and Western.	Gre	at Northern.		
	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.		
IST CLASS—continued.		£ s. d.		£ s. d.		£ s. d.		£ s. d.		
Brought forward	329 496 3 26,836 160 343 46 373 1,527 259	968 I 9 1,614 17 II	39 4 4,788 31 191 53 13 656 159 6	109 14 1 8 19 8 	315 526 1 2 39,902 181 50 371 818 491 19	818 16 4 1,466 3 9 1 9 7 9 0 2 61,209 13 11 457 2 6 	71 3 4,964 39 55 17 311 121	70 13 7 50 14 2 408 6 0 311 15 2 1 1 7		
Ale, in bulk (over 340 miles) Aerated waters Boats Boilers Dairy produce Iron, bar , boiler-plate , bridge work , castings c , corrugated, in cases , nails , tanks , wheels, etc. (railway) c , wire Lead Malt, in tanks Paper 'Pigs and Poultry Soap Stone, carved Sugar Zinc and Tin Plates Total	370 33 187 1,935 2,220 51 43 1,971 3,508	207 7 4 361 11 9 79 17 6 476 16 10 4,698 1 11 6,050 12 6 151 12 11 153 10 11 4,586 12 0 10,642 7 2 1,351 9 7 117 9 10 1,075 14 4 19,150 6 3 600 8 1 1,785 13 8 763 13 1 965 13 10 -1,399 13 4 264 4 7 22,284 7 0 178 7 4	72 12 65 356 830 51 503 335 1,212 27 134 3,274 60 145 94 65 402 2,808 31	57 8 6 35 15 11 90 17 8 952 17 6 2,112 2 10 79 17 8 2,073 5 4 548 15 0 3,540 9 10 463 5 3 42 18 8 378 10 4 10,583 6 6 156 12 4 510 16 2 255 15 5 62 17 3 666 17 8 100 11 3 7,261 13 4 53 1 6	415 30 312 1,900 3,095 628 4,106 3,108 466 121 1,091 3,018 356 581 474 702 215 6,511 75	382 13 11 40 14 5 832 13 10 5,092 19 9 7,169 15, 1 156 12 9 2,469 6 5 7,294 16 10 8,779 12 0 1,395 13 11 187 1 8 575 1 11 10,595 18 2 844 18 5 2,117 19 1 965 19 0 948 7 11 1,312 17 11 468 17 5 18,458 16 3 133 1 4 70,223 18 0	70 11 88 325 871 70 56 744 1,236 165 48 780 2,562 67 158 109 81 424 45 2,640 19	58 14 0 18 12 8 150 12 4 851 12 5 1,825 0 3 101 11 10 62 1 6 1,827 2 0 3,598 19 0 458 11 7 60 14 9 1,481 13 2 7,261 5 2 189 19 4 551 5 6 283 4 6 76 17 8 759 12 4 101 8 8 6,577 17 8 44 9 5		
Ale and beer Bags Boots &c. Butter &c. Carpentry Cheese Confectionery Drapery Drugs &c. Flax Furniture, in cases Glass Glue from Liverpool Grease, antifriction Groceries Ironmongery Kerosene Leather Machinery Malt tanks Meat Miscellaneous Oils and colours Pigs and poultry Plants Preserved meats Rice Rope Saddlery Seeds, garden Stationery Tea. Tobacco Wines	1,421 18 8,189 5,528 836 148 2,784 171 462 2,542 920 31 132 1,220 133 224 13 268	14,218 15 0 475 3 6 2,983 15 10 372 13 11 3,971 2 6 108 7 11 2,858 3 5 17,584 12 10 1,660 12 3	2,751 27 216 10 235 293 1,242 116 2 189 353 55 2,418 2,565 392 54 740 85 131 650 327 65 78 98 16 60 507 218 98 16 60 507 218 98 16 60 507 60 60 60 60 60 60 60 60 60 60	7,212 2 9 83 1 0 781 6 6 36 4 4 776 5 9 26 13 7 997 16 7 4,649 6 10 420 11 6 1,253 17 7 70 5 0 8,935 5 10 9,921 10 10 1,252 12 2 136 4 1 2,528 19 1 285 10 1 285 10 1 285 10 1 285 10 1 290 0 4 1,699 18 8 1,159 18 7 4 14 1 67 9 9 7 2,434 1 6 277 9 4 348 2 10 38 5 2 209 5 3 1,873 2 9 838 1 10 5,795 19 2 54,941 16 6	6,203 745 1,533 761 4,569 499 815 1,400 27 10,178 6,753 905 151 3,930 258 890 3,184 1,196 138 1,351 135 251 12 328 1,034 491 4,321	16,143 13 4	2,932 222 354 341 1,388 128 128 387 92 3,058 2,682 392 56 1,213 93 155 837 451 26 94 105 105 105 105 105 105 105 105 105 105	7,439 16 6 788 12 0 .1,146 7 4 .1,103 19 11 5,204 12 5 479 13 9 2 5 5 1,063 13 11 1,384 9 9 .128 1 4 11,687 12 7 9,261 14 0 1,296 3 2 155 16 0 3,815 15 6 311 17 2 116 14 9 2,064 1 4 1,327 2 7 .82 8 10 4 14 6 2,934 17 1 315 9 9 387 1 6 25,934 17 1 315 9 9 387 1 6 35 17 11 260 9 6 1,937 4 9 770 17 1 5,847 8 11		

a Carried at 1st Class from 4th October, 1882. b Carried at 1st Class till 3rd October, 1882. c Carried at 2nd Class till 3rd October, 1882.

No. 24-continued.

		18	81.		1	18	82.	
Description of Goods.	Great Sout	hern and Western.	Grea	nt Northern.	Great Sout	thern and Western.	Grea	at Northern.
	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.
4TH CLASS.		£. s. d.		£ s. d.		£ s. d.		£ s. d.
Acids Ammunition Bicycles Fireworks Furniture, loose Hats and Millinery Musical instruments Opium Paintings Perambulators Picture frames Pier glasses Plate glass Sewing-machines Slate-slabs. Not described	23 38 2 15 871 .4 228 1 30 14 11 15 120 8 674	139 8 6 192 8 9. 11 1 5 79 14 4 3,014 14 11 22 7 0 1,105 6 1 7 8 4 149 15 10 86 6 2 3 19 1 72 17 6 77 7 8 517 6 2 3,170 2 4	12 13 2 192 1 71 6 4 2 28 2 399	68 16 9 57 10 9 1 1 3 12 6 2 506 12 2 2 3 6 259 3 6	33 39 4 15 1,008 5 305 2 43 17 18 18 19,899 5710	198 4 3 195 12 1 19 12 5 75 9 11 3,326 13 10 26 6 10 1,478 12 8 16 14 0 221 13 1 102 11 8 4 15 0 104 15 0 120 2 8 321 11 7 23 5 6 3,057 6 3	13 19 2 8 221 1 86 12 4 3 6 12 5 404	76 8 5 57 4 0 58 9 22 17 0 539 5 6 3 8 4 356 7 3 45 4 7 20 18 7 16 9 6 35 5 5 36 4 0 25 8 4 1,639 12 11
Total	2,055	8,707 13 9	734	2,685 0 0	2,313	9,293 6 9	796	2,880 2 7
Ist, 2nd, 3rd, & 4th Cluss Goods in Truck Loads. a Aerated waters. a Ale and beer a Boots, &c. a Drapery a Furniture in cases a Glass and earthenware a Groceries a Iron bar. a , cor. in cases a Ironmongery a Kerosene a Machinery a Miscellaneous a Oils and colors a Rice a Rope a Salt, dairy a , rock a Soap a Sugar a Tea a Tobacco a Wines					7 40 1 6 2 3 139, 4 28 19 23 2 1 1 1 1 2 3 15, 1 1 1 2 2 3 1 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	21 13 4 133 12 0 3 6 8 22 0 0 5 0 0 13 0 0 474 6 9 13 6 8 90 17 0 6 13 4 3 6 8 51 9 2 85 7 10 6 13 4 3 6 8 51 9 2 85 13 4 3 6 8 51 9 2 16 13 4 3 6 8 51 9 2 17 10 18 15 6 18 15 6 18 15 6 18 15 6 18 15 6 18 15 6 18 15 6 18 15 6 18 15 6 18 15 6 18 15 6 18 17 10		
MISCELLANEOUS CLASS. a Antimony ore, per truck. Antimony ore Asphalt, Bones, ,, in bags Bran and Pollard, ,, a Bricks per truck. Chaff, Clay Coal Coal Coal, per truck. Contractors' plant Crude oil ,, oil, per truck Firewood Flour, per truck Fish Garden produce, per truck Glass (scrap) Grain, per truck Gunpowder Haulage, per truck Hay, A Hides, ,, a Hides, ,, a Hides, ,, a Hides, A specific of truck Antimony ore, per truck Genen fodder, por truck Gunpowder Haulage, per truck Hay, A Hides, ,, a Hide	6 1,351 7,580 461 82,847 952 62 182 1,464 134,818 10,271 230 6 13,394 2 2,248	3 17 6 973 2 10 4,111 16 7 65 9 7 30,580 2 1 304 9 6 304 1 4 92 2 8 804 19 8 18,630 6 3 7,786 17 5 531 11 5 6 6 4 11,897 3 2 2 2 2 3,241 17 9 228 0 0 8,641 5 8	389 66 1,339 37 3,854 1,025,395 65 366 302 24 1,975 244 6,618	319 0 3		5 17 9 4 17 1 1,070 4 10 698 11 0 698 11 0 6,939 7 5 61 6 0 43,072 5 11 67 0 11 273 0 5 99 16 1 973 15 6 20,058 19 4 8,089 2 2 534 13 8 4 9 11 4 4 6 16,795 8 9 3,662 13 6 335 7 0 7,522 5 3 11 9 11	333 3 175 551 68 1,231 51 12,867 52 232 466 7 2,896 80 7,044	282 7 10 3 4 9

No. 24—continued.

		188	81.			188	32.	
Description of Goods.	Great Sout	hern and Western.	Grea	at Northern.	Great Sout	hern and Western.	Grea	nt Northern.
	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.
MISCELLANEOUS CLASS — contd.		£ s. d.		£ s. d.		£ s. d.		£ s. d.
Brought forward Iron(pig, &c.), from manufactory	90	54 4 5		2 6 5	 753	453 ⁶ 3	 56	28 5 9
a ,, (cor.), cases, per truck Ironstone		1,139 18 1			191 7,346	592 6 4 2,175 11 10	5	18 0 0
a Lime, per truck Limestone Locomotives in steam	 1,942 120	625 O 4 241 2 6	 155	51 15 O	1,650 3,329 140	950 4 4 1,117 7 7 163 17 6	12 215	6 10 4 48 7 6
- Manure—loosc	1,435	208 15 10 2,132 I 3	-133 I	0 16 8	1,265 7,338	209 15 8 1,844 19 4		40 / 0
Milk, ,, Mining props	77	1,809 12 6 6 17 9	1,123	112 13 8	1,311 326 161	1,632 16 11 25 12 10 69 17 0	3,198 1,777	312 14 9 58 5 8
Palings ,,			6 5	4 19 8 0 11 7 101 15 8	12 11 1,893	13 10 7 13,747 12 9	46 17 277	40 19 1 11 11 6 219 4 1
Poultry, ,	962 9	771 13 1 37 12 4	130 		1,093	14 10 11		
Road metal	1,734	7,074 19 7 937 1 7 977 6 1	1,874 827 110	167 9 1 65 6 4 12 7 9	72,203 16,009 914	12,592 9 6 1,441 3 7 455 17 7 14,295 14 6	1,496 1,622 319	132 13 4 100 8 7 96 12 1
Shale Slatestone Slates, per truck	194	8,471 2 6 14 12 5			42,794	4 5 I		8 19 0
Stone—undressed		1,611 7 10 6,211 13 2	409 399	98 o 7	15,080	2,441 12 10 89 5 2 10,489 10 4	42,453 53 894	1,542 18 0 32 18 8 2,301 11 11
Straw, ,, Timbor (sawn), ,, Waggons on whoels		4,358 II 5 6 6 II 548 4 8	656 1,131	6 7 11 517 7 0 196 14 4	7,839 59 386	4,702 6 7 49 14 11 833 5 8	2,591 3,974	2,146 6 7 74 5 0
Water Wire, per truck	6 266	1 17 0 995 4 9	3	2 0 2	1,417 1,486 28,203	457 14 1 4,881 17 3 67,311 11 0	29 224 13,641	1 12 1 694 6 1
Wool, by bale ,, by weight Empty returns	196	70,197 9 2 487 0 8 2,669 11 3	10,698 37 1,036	22,419 17 0 78 11 1 736 4 1	197	478 II 6 2,667 7 8	43 1,180	30,618 3 3 94 1 10 786 16 3
Total	422,631	199,794 17 11	1,059,304	81,229 19 8	552,941	244,511 11 8	1,414,368	109.983 16 8
SUMMARY.								
A Class	43,217 9,722 14,571 38,709 26,379 44,262	48,501 11 5 21,843 12 9 14,362 4 2 18,136 8 9 95,872 9 8 77,345 11 9 171,147 15 11	38.592 8,810 5,581 5,086 9,968 10,700 15,957	13,913 3 0 2,528 11 10 6,472 3 1 5,717 1 0 23,134 13 5 30,027 15 11 54,941 16 6		55,546 19 2 29,331 3 7 8,207 9 1 14,815 5 8 87,265 4 7 70,223 18 0 195,193 10 9	39,802 12,946 3,957 4,344 10,018 10,569 18,336	13,437 I 8 7,258 O I 4,881 I4 3 4,304 O II 22,723 O 2 26,341 5 9 61,354 I9 3
4th ,, 1st, 2nd, 3rd, and 4th Class in truck loads		8,707 13 9	734	2,685 0 0	2,313	9,293 6 9 1,646 14 1	796	2,880 2 7
Miscellaneous Class Total]	1,059,304	81,229 19 8	-l	716,035 3 4	1,414,368	253,164 1 4
	0.150	0077					,,,,,,,	
Less difference over-charges and special credits		3,358 11 2		324 14 5		3,949 14 5		2,014 3 5
Live stock	723,495 32,288	652,353 14 11 70,753 7 3	1,154,732 5,116	220,325 10 0 8,563 18 9		712,085 8 11 116,660 8 4	1,515,136	251,149 17 11 23,418 12 0
Demurrage, storage, weighing, use of cranes, &c		2,070 15 3		1,483 15 6		3,845 2 3		4,743 13 8
Total						832,590 19 6	·l	279,312 3 7
Departmental—	5							
CoalGeneral		37,352 19 4 18,880 6 o	6,613 2,956	1,785 18 9 1,755 9 0			9,115	3,293 19 6 2,630 14 10
Grand Total	864,433	781,411 2 9	1,169,417	233,914 12 0	1,079,473	891,789 12 0	1,542,007	285,236 17 11
	l	1	<u> </u>	4th Ootober 1882	<u> </u>	1	<u> </u>	1

a Carried from the 4th October, 1882.

No. 25.*

Revenue and Expenditure of each Station, with other particulars, for the year ending 31st December, 1882.

. Stations.	No. of hands employed,	Total	No. of	Revenue from	Go	ods.	Co	oal.	Other M	Inerals.	н	ıy.	w	ool	Earnings from	
Stations.	including Station- master.	Expenditure.	Tickets issued.	Tickets and Coaching Traffic.	Tonnage outwards.	Tonnage inwards.	Tonnage outwards.	Tonnage inwards.	Tonnage outwards.	Tonnage inwards.	Trucks outwards.	Trucks inwards.	Bales outwards.	Bales inwards.	Earnings from Goods Traffic.	Total Earnings.
·				SUBURB	AN RA	ILWAY	, INCL	UDING	a sydn	TE Y .				}		
•		.£ s. d.		£ s. d.		[)	1	,				£ s. d.	£ s. d.
Central Office, Sydney	6	742 I2 I	17,443	26,126 19 8												26,126 19 8
Darling Harbour	130	12,624 11 6			38,937	174,695	4,627	9,915	7,713	100,562	482	5,204	734	147,059	175,326 12 7	175,326 12 7
Sydney	284	30,239 15 10	1,179,964	133,622 12 0	163,584	3,283	2,515	1,412	12,107	5	1,464	· 7	10,031		23,208 2 3	156,830 14 3
Eveleigh	. 6	879 6 6	48,105	1,094 14 10	·····								•••••			1,094 14 10
M'Donald Town	4	483 I 7	132,467	1,871 14 1				•••••				•••••				1,871 14 1
Newtown	17	2,216 14 3	425,987	8,021 3 11	1,325	25,701	24	31,652	134	13,509	13	3			17,259 3 8	25,280 7 7
Stanmore	6	545 5 4	63,587	1,430 7 1	•••••					••••	•••••	•••••			••••	1,430 7 1
Petersham	16	1,822 16 3	359,072	10,023 12 5	284	12,755	31	14,105	29	7,049	••••	ı	, .	* * * * * * * * *	9,229 0 5	19,252 12 10
Summer Hill	. 6	613 16 2	108,791	3,609 4 9	••••	4								•••	0 13 1	3,609 17 10
Ashfield	12	1,371 8 6	174,999	8,105 0 5	2,382	7,470		6,103	97	2,505	2	52	••••		4,044 9 10	12,149 10 3
Croydon	6	571 2 11	83,315	3,735 3 6	•••••	6	••••	•••••	••••		••••		•••••		3 1 9	3,73 ⁸ 5 3
Burwood	13	1,559 1 4	188,201	8,987 1 8	2,094	7,977		5,271	83	5,312	2	202	••.		4,310 1 10	13,297 3 6
Redmyre	3	364 7 o	32,209	2,203 2 5								•••••				2,203 2 5
Homebush	10	1,372 4 10	43,495	2,431 14 1	3,035	3,509	••••	1,114	372	15,149	1	5	•••••		89,180 18 9	91,612 12 10
Rookwood	9	658 5 9	48,761	1,908 2 4	4,195	1,334	27	793	34	2,213	3	36	•••••	•••••	859 19 4	2,768 I 8
Auburn	2	246 10 3	11,606	422 4 0	78	912		165		254			76		231 15 2.	653 19 2
Granville	25	2,742 16 10	70,941	4,497 18 8	13,434	21,534	12	6,232	34	5,180	••••	12	1,441	2,169	7,470 17 1	11,968 15 9
	555	58,953 10 11	2,988,943	218,090 15 10	229,348	259,180	7,236	76,762	20,603	151,738	1,967	5,522	12,282	149,228	331,124 15 9	549,215 11 7
1881	536	55,822 14 7	2,312,927	187,346 14 10½	177,895	242,868	3,585 .	55,609	8,705	90,587	1,018	7,937	11,577	155,899	296,893 8 5	484,240 S 3½
, .								,		,						
	<u> </u>		l			ncindes traf				l		t				

1	No. of hands		No. of	Revenue from	Goo	ds.	Coa	J	Other M	inerals.	На	y	Wo	oL	Earnings from	Matal assistant
Stations. in	mployed, ncluding Station- master.	Total Expenditure.	Tickets issued.	Tickets and Coaching Traffic.	Tonnage outwards.	Tonnage inwards.	Tonnage outwards.	Tonnage inwards.	Tonnage outwards.	Tonnage inwards.	Trucks outwards.	Trucks inwards.	Bales outwards.	Bales inwards.	Goods Traffic.	Total earnings.
Merrylands Guildford Fairfield and Platforms Cabramatta Liverpool and Platforms Minto Campbelltown and Platforms Menangle Douglas Park Picton Mittagong and Platforms Bowral Moss Vale and Platforms Bundanoon Marulan Tourang Goulburn Breadalbane Gunning Jerrawa Yass and Platforms Bowning Binalong Rocky Ponds and Platforms Harden Murrumburrah Wallendbeen Cootamundra and Platforms Bethungra Illabo Junee Junction Harefield Bomen South Wagga Sandy Creek The Rock Yerong Creek Culcairn Gerogery Bowna Albury and Platforms Old Junee	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	£ s. d. 156 11 0 125 17 8 461 3 7 127 19 4 1,321 11 0 128 11 10 1,229 1 7 190 18 5 1,031 5 6 577 10 10 828 1 10 225 3 6 578 17 8 249 4 11 4,372 11 11 4,16 4 3 502 16 3 225 10 0 573 10 6 722 5 9 557 1 10 196 2 2 1,418 9 4 225 5 5 3 276 14 0 1,201 13 9 484 10 4 208 6 3 1,287 14 9 170 10 0 442 5 10 1,719 7 2 124 2 0 206 10 0 1,283 8 8 250 0 6	2,704 3,585 15,371 2,391 30,527 2,297 45,416 3,708 3,738 5,435 6,984 5,789 9,319 2,942 4,447 1,350 23,972 2,760 4,212 822 5,743 1,471 3,127 3,71 3,127 3,1471 3,127 3,1693 9,758 1,451 852 7,170 910 675 14,202 906 2,247 1,664 2,396 1,706 1,706 1,706 1,706 1,102 11,802 598	£ s. d. 199 19 0 212 6 4 1,234 19 7 317 4 9 3,887 1 0 348 11 9 8,257 7 7 681 13 3 917 16 3 1,881 6 1 2,263 6 9 1,863 11 1 4,543 14 2 526 12 1 1,448 2 8 178 7 2 18,269 1 0 669 10 2 1,935 3 0 164 5 9 4,025 4 11 748 2 0 1,838 17 7 71 5 10 2,507 10 2 4,309 10 8 742 7 5 9,112 0 11 496 19 3 376 9 1 3,517 6 5 182 19 11 377 13 8 10,828 18 2 585 15 1 1,090 5 10 396 18 11 807 18 2 585 15 1 1,090 5 10 396 18 11 807 18 2 585 15 1 1,090 5 10 396 18 11 396 18 11 396 18 11 396 18 11	GRE 2,069 2,484 8,779 5,834 24,860 2,157 4,466 1,047 2,074 3,307 2,242 658 1,814 3,478 2,744 3,769 10,185 232 521 34 673 691 982 469 3,049 3,049 3,049 435 32,034 3,994 435 398 1,212 220 10,573 4,333 179 190 78 664 1,897 396 5,393 379	287 135 1,815 309 6,631 274 9,725 1,496 2,437 1,695 53 30,435 641 1,120 67 2,320 2,582 1,750 119 5,260 3,271 2,695 6,486 3,271 2,582 1,750 119 5,260 1,750 119 5,260 3,271 1,695 5,260 1,120 6,486 3,271 1,695 1,750 119 5,260 1,750 119 5,260 1,750 1,496 1,496 1,750 1,750 1,750 1,496 1,750	10 5 6 6	675 288 5 7,267 4 208 31 10 72 58 213 18 592 10 3,962 10 3,962 10 63 10 63 10 567 17 17 10 51 10 51 10 10 10 10 10 10 10 10 10 10 10 10 10	29 413 4,327 364 3 22,686 892 8,544 629	393 944 888 16 421 12 211 74 99 151 836 38 6 -2,775 11 176 6 421 224 95 144 216 30 36 45	250 444 496 276 126 232 32 1 149 5 73 17 5 3 162 162 17 18 18 18 18 18 18 18 18 18 18 18 18 18	10 45 18 27 45 10 37 2 90 1 16 3 3 	24 2 30 402 8,643 174 1,731 23 2,161 2,711 2,430 479 6,772 808	310	99 10 8 4,238 6 6 196 0 7 666 18 4 1,221 11 1 10,515 11 6 1,873 15 1 3,812 6 2 170 6 8 1,556 18 0 1,556 18 0 2,596 14 9 33 7 0 6,259 3 10 9,581 2 3 75,080 15 10 19,599 12 3 75,080 15 10 19,599 12 3 75,080 15 10 19,599 12 3 75,108 13 11 18,434 5 5 411 3 5 401 13 1 18,434 5 5 19,599 10 0 19,599 11 3 18,434 5 5 11,106 14 11 11,106 14 11 11,689 13 2 238 6 3 219 17	445 15 7 1,705 15 2 436 11 8 10,179 3 5 448 2 5 12,495 14 1 877 13 10 1,584 14 7 3,102 17 2 12,778 18 3 3,737 6 2 8,356 0 4 696 18 9 3,005 0 8 196 1 10 61,174 12 2 958 19 0 4,531 17 9 197 12 9 10,284 8 9 10,284 8 9 10,284 8 9 10,284 8 9 10,284 8 9 10,284 8 9 10,284 8 9 10,284 8 9 10,284 8 9 10,284 8 9 10,284 8 9 10,284 8 9 10,284 8 9 10,284 8 9 10,285 15 10,286 6 14 10,286 6 18 10,286 6 18 10,286 8 19 10,28 9 19 10,389 9 1

No. 25-continued.

Part Part	l'			`														
### Conclusion and Platforms	Stations	hands employed,	_ Total "			. God	ods.	Co	al.	Other M	inerals.	На	ıy.	Wo	ol.	Earnings from	Total earnir	nøs.
Colorma and Platforms 2 18, 12 4 845 379 2 4 1,897 666	•	Station-	Expenditure.			Tonnage outwards.	Tonnage inwards.									Goods Traffic.		
Colaman and Platforms				*		GREA	AT SOU	THERN	N RAIL	WAY—	-continu	ed.				•		
Groug 1 15 8 5 1,157 350 18 7 172 216		ı	£ s. d.	ı	£ s. d.	1	1		1 .	. 1	ı	f	1	1	1	£ s. d.	£ s.	. d.
CREAT WESTERN RAILWAY	Grong Grong ,, Narrandera Quarries and Platforms Hulong Darlington and Platforms Carathool Hay and Platforms Victorian Railways	9 2 4 3 4 9	125 8 5 969 10 9 243 10 4 373 12 3 313 3 7 570 8 7	1,157 6,985 1,586 1,219 2,252 2,792 3,705 6,143	359 18 7 5,482 16 8 497 18 2 704 18 9 1,263 18 5 2,204 5 1 4,566 4 5 19,931 18 11	172 4,053 84 107 277 560 306	216 5,154 532 1,046 5,290 2,822 2,728		2,184 15 6	304 9 13 31 5	42 26 66 6 288	2	12 1 1 11 5	1,385 4,824 961 4,783 3,194 2,214 5,056	6 30	160 4 2 16,054 19 2 95 3 7 3,424 5 0 6,363 9 7 7,330 14 4 8,125 2 7	520 2 21,537 15 593 1 4,129 3 7,627 8 9,534 19 12,691 7	2 9 5 10 1 9 3 9 8 0 9 5 7 0 8 11 ¹ / ₂
GREAT WESTERN RAILWAY. Parramatta	Total	275	30,766 17 7	296,061	141,759 13 4	131,723	129,253	9,260.	17,741	48,758	7,453	2,236	939	75,272	12,324	220,906 2 5	362,665 15	5 9½
GREAT WESTERN RAILWAY. Parramatta	1881	264		203,561.				2,870	' '	38,655		3,117		1	11,812	191,806 12 6	306,271 16	5 7 1
	Seven Hills Blacktown Rooty Hill and Platforms South Creek Penrith Emu Plains Glenbrook and Platforms Springwood Lawson Wentworth Katoomba Mount Victoria Mount Wilson Clarence Zig Zag Esk Bank Lithgow Bowenfels and Platforms Wallerawang	2 6 3 6 9 3 5 4 5 2 4 0 3 2 2 4 4 2 5 13	208 3 2 789 6 6 343 1 6 545 17 2 2,505 14 8 403 13 11 579 17 7 356 15 4 532 1 1 280 13 0 329 14 10 1,226 6 7 219 10 10 277 5 4 254 18 0 1,572 1 0 217 19 6 602 11 3 1,651 19 3	5,036 6,835 4,749 8,434 16,703 3,626 1,007 4,003 1,711 1,305 3,904 8,689 1,205 577 2,89 6,434 6,107 2,139 11,586	483 I 4 965 I0 4 744 2 8 1,189 7 II 3,732 0 7 724 5 9 172 I6 6 874 I4 9 511 0 10 205 I8 2 910 6 II 2,706 5 4 312 I2 II 70 8 9 24 I4 7 2,118 I5 2 2,047 I0 7 566 4 2 4,621 6 II	6,454 3,303 4,751 13,036 22,252 18,308 225 1,120 651 9 3 823 1,883 1,883 1,883 1,91 9,154 199 2,836	16,285 1,032 505 863 2,324 4,201 592 171 1,417 583 49 1,811 1,896 325 113 4,440 615 9,877	14 3 6 91,107 9,593 5	4,115 	1,650 4,072 3 2,732 63,120 44 50 23,197 1,110 68 74 3 84	40 175 399 208 315 8 5172 21 58 74 9 13,231 34 32	15 1 19 61 239 31 	7 15 93 26 90 7 3 5 37 21 60 4 126	3 5 16 10 59 12 	11 	404 2 6 2,816 14 6 409 15 7 1,152 3 1 2,551 1 9 1,037 19 1 12 5 0 505 11 11 230 4 7 30 13 3 881 1 1 1,152 0 9 187 12 7 52 9 4	887 3 3,782 4 1,153 11 6,283 2 1,762 4 185 1 1,380 6 741 5 236 11 1,791 8 3,858 6 500 5 122 18 24 14 13,347 14 2,047 10 1,526 11 16,368 17	3 10 3 0 4 10 6 8 5 5 0 1 6 1 7 7 7 3 1 1 7 1 1 1 1 1 1 1 1 1 1 1 1

No. 25—continued.

	No. of hands]	No. of	Revenue from	Go	ods.	· Co	al.	Other M	inerals.	На	y.	Wo	ol.		1
Stations.	employed, including Station- master.	Total Expenditure.	Tickets issued.	Tickets and Coaching Traffic.	Tonnage outwards.	Tonnage inwards.	Tonnage outwards.	Tonnage inwards.	Tonnage outwards.	Tonnage inwards.	Trucks outwards.	Trucks inwards.	Bales outwards.	Bales inwards.	Earnings from Goods Traffic.	Total earnings.
	· · · · · · · · · · · · · · · · · · ·	•								_	_					
		£ s. d.	•	£ s. d.	GRE	AT WE	STERN	RALL	WAY—a	continuea	<i>l</i> .	1			£ s. d.	£ s. d.
Tarana Locksley Brewongle Raglan Kelso Bathurst and Platforms Perth George's Plains Newbridge and Platforms. Blayney Spring Grove Spring Hill Orange and Platforms Mullion Creek and Kerr's Creek Warne and Platforms Ironbarks Springs Wellington and Platforms Mary Vale Murrumbidgeree Dubbo and Platforms Narromine Nevertire Capertee and Platforms	2 5 2 36 36 2 3 4 4 30 4 3 3 2 10 1 2 30 7	448 8 8 226 16 10 511 18 4 221 2 0 587 1 1 3,917 11 2 195 12 6 427 17 10 440 12 11 367 17 11 406 4 1 3,356 6 4 287 8 0 166 2 5 370 9 3 178 7 16 1265 14 6 104 13 0 140 8 9 4,187 3 1 176 0 7 1,150 9 5 1,096 1 11	2,395 823 2,607 739 1,251 29,305 3,630 3,917 5,628 10,523 5,014 4,860 20,347 1,335 2,323 1,630 1,744 17,287 788 2,712 5,390	721 9 8 196 6 0 507 12 8 233 5 0 959 7 3 15,488 15 2 379 14 1 612 3 10 1,083 0 1 4,811 17 10 903 15 11 821 17 3 12,780 3 3 185 16 3 496 15 7 915 14 6 406 18 5 4,303 0 1 254 5 8 361 16 2 20,974 19 11 195 0 0 3,045 1 6 4,025 15 0	491 73 1,619 453 1,851 10,440 381 335 2,793 3,281 2,139 1,725 10,966 2,439 661 157 298 2,434 450 7,440 317 649	572 47 479 231 938 18,204 467 331 891 4,957 679 345 16,822 742 90 4,308 141 104 37,616 7,216 8,214	6	171 18 161 8,132 11 2,224 32 3,263 214 1,592 223 9	554 314 950 2,035 9,292 8 7 55 5 294 35 214 	8 4 15 615 54 155 526 52 848 9 10 102 1 331	92 63 423 372 487 230 98 76 263 141 390 215 67 41 	56 1 56 1 157 1 60 4 3 350 3 12	337 17 128 65 303 1,555 601 40 655 3,780 409 20 215 372 2,531 3 169 36,806 1,267 9,743 2,590	312 312 15 77 6	844 15 5 42 4 3 434 9 3 335 11 6 1,835 3 7 28,321 14 0 942 17 11 288 19 4 1,036 18 10 13,899 18 11 743 13 7 593 7 6 46,102 4 6 102 4 6 102 2 4 243 14 3 8,035 7 11 71 3 9 137 3 2 90,146 7 2 958 5 8 15,722 15 6 13,295 12 3	1,566 5 1 238 10 3 942 1 11 568 16 6 2,794 10 10 43,810 9 2 1,322 12 0 901 3 2 2,119 18 11 18,711 16 9 1,647 9 6 1,415 4 9 58,882 7 9 211 2 5 705 18 9 2,427 16 10 650 12 8 12,338 8 0 325 9 5 498 19 4 111,121 7 1 1,153 5 8 18,767 17 0 17,321 7 3
Total	374	36,532 15 2	432,975	114,901 17 6	138,926	151,882	100,972	22,524	110,523	19,897	3,473	1,611	74,978	1,023	268,499 19 11	383,401 17 5
1881	285	30,312 14 2	344,056	95,519 18 7	138,501	119,287	77,345	17,598	63,459	10,856	3,993	933	84,190	801	233,750 3 8	329,270 2 3
				WINDS	SOR A	ND RIC	CHMON	D RAI	LWAYS	s.						,
Riverstone and Platforms	5	199 16 8 280 12 8 633 9 9 109 12 10 526 8 8	5,577 2,412 16,767 1,594 10,439	608 8 11 471 11 5 3,194 8 9 258 17 0 2,666 2 8	30,440 11,588 4,240 109 1,470	862 332 3,818 158 2,359		31 228 115 5 62	9 299 41 1	111 3 292 740	34 275 249 14 54	11 12 28 31 148	30 2 15 5	9 	8,144 17 4 241 8 11 2,328 17 0 80 5 6 1,955 15 2	8,753 6 3 713 0 4 5,523 5 9 339 2 6 4,621 17 10
Total	15	1,681 0 7	36,789 31,520	7,199 8 9 6,398 8 5	47,847 50,482	7,529 6,868		441	350 357	1,146 <i>875</i>	626 1,322	230	52 21	9	12,751 3 11 5,977 5 11	19,950 12 8 12,375 14 4
1881	15	1,552 5 10	31,020	0,000 0 0	00,402	0,000	,	102	301	810	2,000	20	~	•••••	0,0	1~,0.0 14 4

Stations.	No. of hands employed,	Total	No. of	Revenue from	Go	ods.	C	oal.	Other M	finerals.	Ha	72.	W	ool.	Earnings from	Total arminus
Seedons.	including Station- master.	Expenditure.	Tickets issued.	Tickets and Coaching Traffic.	Tonnage outwards.		Tonnage outwards.	Tonnage inwards.	Tonnage outwards.		Trucks outwards.	Trucks inwards.	Bales outwards.	Bales inwards.	Goods Traffic.	Total earnings.
													_		,	
`	. ,			G:	REAT 1	NORTH	ERN R	AILW	AY.				•			•
		£ s. d.		£ s. d.											. £ s. d.	£ s. d
Central Office Newcastle Honeysuckle Point Bullock Island Weighbridge Hamilton Waratah Hexham Hexham Town Woodford East Maitland High-street West Maitland Farley Lochinvar Greta Branxton Singleton Ravensworth Musclebrook Aberdeen Scone Wingen Blandford Murrurundi Doughboy Hollow Willow Tree Quirindi Werris Creek Currabubula West Tamworth Tamworth Moonbi Walcha Road and Platform Kentucky Uralla Breeza Curlewis	105 · 14 · · · · · · · · · · · · · · · · ·	13,707 2 7 1,629 7 6	539 68,743 23,800 16,863 41,998 13,347 3,068 3,477 24,906 25,664 22,463 2,207 5,908 5,442 6,337 14,053 1,785 7,823 1,498 4,121 902 958 5,053 1,565 2,863 5,208 3,023 1,652 8,914 12,509 6,738 1,741 468 3,516 915 825	1.170 0 5	29,149 2,724 4,929 4,632 2,064 305 930 1,653 2,961 12 8,292 363 461 2,839 212 1,701 554 729 98 43 185 1,529 362 6,310 104 1,246 935 69 2669 2639	2,872 1,579 480 1,974 657 45 770	298 13,930 13,930 19 9,769 103 15 11 11 11 11 11 11 11 11 11 11	1,303,087 368 422 21 5,662 7 144 508 8 36 10 54 2,924 84 79 40 576 83 1 491 1,179 12	8,962 68 1,461 1,330 41,959 68 38 44 79 1	43,469 31 8,806 154 16 132 954 314 2 7 146 3 444 2 60 1 48 45 49 1 14 92 25 21 6 36	140 6 5 3 47 45 4 246 817 4 195 1 1 29 45 24 25 51 95 24 47 64 4 17 22	797 117 19		645 	67,041 10 3 1,144 3 11 13,000 19 6	1,170 9 5 85,578 17 0 2,988 15 2 13,000 19 6

No. 25—continued.

	No. of hands employed.	Total	No. of	Revenue from	God	ods.	Co	al.	Other Mi	inerals.	На	Σ.	Wo	ol.	Earnings from	Total carnings.
Stations.	including Station- master.	Expenditure.	Tickets issued.	Tickets and Coaching Traffic.	Tonnage outwards.	Tonnage inwards.	Tonnage outwards.	Tonnage inwards.		Tonnage inwards.	Trucks outwards.	Trucks inwards.	Bales outwards.	Bales inwards.	Goods Traffic.	
				GREA'	r nor	THERN	RAIL	WAY—	continued		-					•
} !	; 	£ s. d.]	£ s. d.]	}	ı	•		!		· .	£ s. d.	£ s. d.
Gunnedah Boggabri Turrawan Narrabri Morpeth Wallsend		3,214 4 2 963 18 7 52 16 8 899 2 2 3,149 16 8 603 3 11	8,072 2,753 150 2,377 20,125 22,479	7,940 13 9 1,976 3 1 22 16 7 2,857 14 3 1,702 0 11 1,170 10 11	^{2,454} 684 9 267 17,397 660	3,602 3,733 2,220	7 63	1, 7 50 19 34 9,199 535	15	28 94 3,023 678	111	247 4 32 89 150		65,460	32,624 12 11,564 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	
1882	497 <i>380</i>	51,678 14 11 41,586 13 9	406,878 306,070	94,358 o 8 78,765 18 8	108,491	. ,,,		1,327,060 1,029,256		58,339 16,295	[2,254 2,032	73,334 55,875	73,334 55,875		374,375 16 9 309,077 7 2
		. ,		`		SUMI	MARY.									
Suburban Line, including Sydney Southern Line Western Line Windsor and Richmond Line	555 275 . 374 . 15	58,953 10 11 30,766 17 7 36,522 15 7 1,681 0 7	296,061	218,090 15 10 141,759 13 4½ 114,901 17 6 7,199 8 9	229,348 131,723 138,926 47,847	129,253	9,260 100,972	76,762 17,741 22,524 441	48,758	151,738 7,453 19,897 1,146	2,236 3,473	5,522 939 1,611 230	75,272 74,978	12,324	220,906 2 5	
Northern Line	1,219	127,924 4 8 51,678 14 11	3,754,768 406,878	481,951 15 5½ 94,358 0 8	547,844 108,491	547,844 108,491	117,468 1,327,060	117,468 1,327,060	180,234 58,339	180,234 58,339	8,302 2,254	8,302 2,254		162,584 73,334	ă- <i>-</i>	374,375 16 9
	1,716	179,602 19 7	* 4,161,646	576,309 16 1½	656,335	656,335	1,444,528	1,444,528	² 3 ⁸ ,573	238,573	10,556	10,556	235,918	235,918	1,113,299 18	1,689,609 14 2½
1881	1,480	154,137 8 3	*3,198,134	482,496 4 8				1,113,056				11,482				1,441,235 3 8
			_		1882 1881	—Mails, a —	dvertising ,,	, sale of O	ld Materia	11, &c., £3 £1	1,597 19s. 14,258 15s.	1d. Les 5d.	s Credits,	£20,191 : £11,268	6s. 4d	11,406 6 11
		,	,									1882—G 1881—	ross Earn			1,701,016 1 1½ 1,444,225 12 9

^{*} Includes No. of season tickets issued, but not season ticket journeys.

No. 26.*

GREAT SOUTHERN, WESTERN, AND RICHMOND RAILWAYS.
RETURN showing Outwards and Inwards Traffic at each Station during 1882.

arling Harbour addrey	522 I 7 I,477 2 7 7,403 8 5 I,466 7 I I0,049 7 0	£ s. d. 489 0 8 	£ s. d.		£ s. d.	Inwards. £ s. d. 480 0 8	and Goods, Inwards and Outwards.
arling Harbour dney	29,875 14 8	£ s. d. 489 0 8 	£ s. d.	£ s. d.	£ s. d.		£ s. d.
arling Harbour dney	29,875 14 8	489 0 8	65,739 11 10		29,875 14 8		£ s. d.
nildford irfield & Platforms bramatta verpool & Platforms into mpbelltown enangle buglas Park cton and Platforms ittagong ,, wwral	3,668 2 3 8,248 10 6 3,821 14 2 9,315 10 3 2,327 4 3 2,618 12 3 1,882 3 3 460 7 3 4,715 5 11	459 16 1 5,894 12 11 775 2 11 5,743 7 4 1,940 16 11 4,272 9 6 1,721 8 1 5,289 0 10 799 16 10 2,510 1 8 4,854 8 4 365 9 8 4,848 6 7	764 9 6 184 17 11- 0 6 3 342 9 6 285 8 11 2,737 1 0 389 2 10 24 15 5 3,594 11 10	171,631 7 10 5,537 8 6 15 2 5	65,739 11 10 486,731 15 6 522 1 7 1,477 2 7 8,167 17 11 1,466 7 1 10,234 4 11 3,668 8 6 8,591 0 0 3,821 14 2 9,600 19 2 2,327 4 3 5,355 13 3 2,271 6 1 485 2 8 8,309 17 9	171,631 7 10 183,480 14 5½ 70 7 8 459 16 1 23,508 0 5 775 11 7 15,001 18 2 1,943 17 7 8,354 3 11 1,726 6 4 9,779 15 9 802 1 6 91,359 15 7 5,748 8 2 595 4 7 13,606 4 3	30,364 15 4 237,370 19 8 670,212 9 11½ 592 9 3 1,936 18 8 31,675 18 4 2,241 18 8 25,236 3 1 5,612 6 1 16,945 3 11 5,548 0 6 19,380 14 11 3,129 5 9 96,715 8 10 8,019 14 3 1,080 7 3 21,916 2 0
nildford irfield & Platforms bramatta verpool & Platforms into mpbelltown enangle buglas Park cton and Platforms ittagong ,, wwral			GREAT SOUTH				
indanoon indanoon indanoon indida	195 0 0 210 14 9 1,205 13 1 306 13 2 3,522 6 8 346 0 3 8,044 5 10 669 5 10 8,78 14 8 7 8,164 10 1,774 2 6 4,356 16 11 179 5 5 9 17,198 18 5 657 8 4 1,832 5 5 6 161 16 7 3,760 4 5 667 8 4 1,832 5 6 6 10 1,886 18 5 4,049 4 5 668 4 7 8,383 19 3 437 8 6 668 4 7 8,383 19 3 162 6 6 10 1,886 18 5 4,049 4 5 668 4 7 8,383 19 3 6 269 17 11 10,061 3 3 149 11 7 724 12 11 5,045 4 12 11 5,061 3 3 149 11 7 724 12 11 5,045 4 2 1 1,045 4 12 11 5,054 5 2 499 14 9 629 7 9 267 2 4 7 346 12 4 5,054 5 2 499 14 9 629 13 7 1,233 17 11	114 9 6 222 4 6 1,168 8 6 181 13 9 3,450 12 10 236 8 6 6,946 4 10 635 5 3 731 17 0 2,104 19 0 2,826 8 1 2,626 12 1 6,438 1 7 623 5 0 1,423 8 4 269 7 7 18,392 16 5 588 6 6 1,634 19 5 120 6 5 3,498 0 6 548 7 2 1,444 16 6 341 18 8 1,225 9 5 4,224 16 10 600 15 1 7,659 0 7 384 15 11 288 2 3 2,892 2 7 115 0 7 309 12 4 11,023 1 6 133 15 9 723 6 1 413 8 0 856 3 2 275 13 1 243 9 6 13,350 6 1 413 8 0 856 3 2 275 13 1 243 9 6 13,350 6 1 418 12 9 338 13 11 300 4 7 4,802 8 9 195 10 11	158 3 3 291 9 3 1,003 4 8 643 14 7 4,431 6 7 4,431 6 7 68 18 11 2,144 7 6 779 6 8 674 15 8 2,059 16 5 10,887 2 2 1,094 18 7 6,757 12 2 986 4 0 8,405 6 5 8,405 6 5 8,405 6 5 1,753 16 3 2,222 18 10 2,576 1 3 2,222 18 10 2,576 1 3 2,222 18 10 2,576 1 3 4,646 1 9 36 11 7 2,364 1 3 2,222 18 10 2,576 10 1,173 3 2 2,576 10 1,173 3 2 2,5897 7 2 48 17 3 828 18 10 190 13 0 807 1 7 1,441 18 0 357 19 1 8,683 6 3 1,582 7 6 2,306 10 0 1,032 10 2 10,017 15 7 2,975 10 5	343 15 11 156 10 3 490 4 4 119 3 1 6,342 2 0 101 13 8 5,304 2 4 208 15 0 735 18 11 1,383 7 5 2,867 2 1 2,012 1 9 4,477 2 2 296 4 5 1,707 11 10 365 9 9 2,861 17 5 31 2 9 2,861 17 5 5,154 19 5 2,31 2 9 17,956 12 5 733 5 7 890 9 8 18,206 4 4 451 19 5 2,31 2 9 17,956 12 5 733 5 7 890 9 8 18,206 4 4 451 19 5 2,31 2 9 17,956 12 5 733 5 7 890 9 8 18,206 4 4 451 19 5 2,31 2 9 17,956 12 5 733 5 7 890 9 8 18,206 4 4 451 19 5 2,31 2 9 17,956 12 5 733 5 7 890 9 8 18,206 4 4 451 19 5 2,31 2 9 17,956 12 5 733 5 7 890 9 8 18,206 4 4 451 19 5 872 14 0 4,878 0 11 408 7 0 1,783 7 0 283 2 2 273 2 10 6,849 7 0 1,783 7 0 283 2 2 273 2 10 6,849 7 0 1,783 7 0 283 2 2 273 2 10 6,849 7 0 1,783 7 0 283 2 2 273 2 10 6,849 7 0 1,070 10 6 665 17 8 586 6 3 14,334 0 5 409 18 4 2,195 19 8	353 3 3 3 502 4 0 2,208 17 9 950 7 9 7,953 13 5 7 10,188 13 4 1,448 12 6 1,553 10 4 3,894 16 0 2,869 1 1 11,114 9 1 1,496 8 2 9,730 0 4 583 12 11 40,259 19 9 1,607 0 3 3,586 1 9 218 8 2,763 14 4 4,204 10 0 6 8,885 0 11 4,091 16 6 2,550 16 10 16,030 4 0 776 18 11 985 0 10 4,406 12 7 438 2 9 4,760 2 1 15,958 10 5 198 8 10 1,553 11 9 755 17 2 1,852 6 6 1,826 5 4 585 12 5 21,312 14 0 1,849 9 10 2,650 10 7 1,379 2 6 15,072 0 9 1,085 4 0	458 5 5 378 14 9 1,658 12 10 300 16 10 9,792 14 10 338 2 2 12,250 7 2 844 0 3 1,467 15 11 3,488 6 5 5,693 10 2 4,638 13 10 10,915 3 9 919 9 5 3,131 0 2 333 18 1 59,530 9 5 3,131 0 2 333 18 1 59,530 9 5 3,131 0 2 333 18 1 59,530 9 5 1,491 10 4,958 2 5 1,491 4 9 25,865 4 11 836 15 4 1,160 16 3 7,770 3 6 19,182 1 10 4,958 2 5 1,491 4 9 25,865 4 11 836 15 4 1,160 16 3 7,770 3 6 19,182 1 10 4,958 2 5 1,491 4 9 25,865 4 11 836 15 4 1,160 16 3 7,770 3 6 19,182 1 10 2,639 10 2 2,558 15 3 5,16 12 4 20,199 14 8 1,219 14 9 1,761 11 2 821 15 0 2,639 10 2 2,558 15 3 5,16 12 4 20,199 14 8 1,219 14 9 2,600 9 3 2,686 0 5	811 8 8 880 18 9 3,867 10 7 1,251 4 7 17,746 8 3 1,093 1 4 22,439 0 6 2,292 12 9 3,021 6 3 7,383 2 2 5 18,696 12 4 1,507 14 11 22,029 12 10 2,415 17 7 12,861 0 6 8,082 18 7 317 11 0 99,790 9 2 2,560 16 6 8,082 18 7 10,804 5 11 1,143 7 11 12,145 17 7 41,895 11 1,143 7 11 12,176 16 1 637 16 1 5,524 15 5 47,746 8 5 392 11 7 3,315 2 11 15,72 12 2 4,491 16 8 2,385 0 7 1,102 4 9 41,512 8 8 3,068 13 1 3,655 2 2 2,265 13 4 34,208 9 11 1,629 1 4 5

No. 26—continued.

Return showing Outwards and Inwards Traffic at each Station during 1882—continued.

	Coach	ing.	Goo	ds.	Coaching ar	nd Goods.	Total Coaching and Goods,
Stations.	Outwards.	Inwards.	Outwards.	Inwards.	Outwards.	Inwards.	Inwards and Outwards.
			GREAT WESTE	en Railway.		,	
Parramatta & Platfms. Seven Hills Blacktown & Platfms. Rooty Hill South Creek Penrith "Emu Plains Glenbrook & Platfms. Springwood Lawson Wentworth Falls Katoomba & Platfms. Mt. Victoria Mt. Wilson Clarence Eskbank & Platforms Lithgow Bowenfels & Platforms Wallerawang Rydal Tarana Locksley Brewongle Raglan Kelso Bathurst Perth and Platforms George's Plains Newbridge & Platfms. Blayney Spring Grove Spring Hill Orange and Platforms Mullion Creek Wærne & Platforms Ironbarks Springs Wellington & Platfms. Maryvale Murrumbidgerie Dubbo & Platforms Narromine Narromine Narromine Narromine Narromine Nevertire Capertee & Platforms	£ s. d. 16,660 19 4 457 8 3 854 14 4 735 17 5 1,380 15 10 3,654 1 4 664 6 6 129 10 5 856 15 7 449 13 9 196 3 5 864 10 11 2,505 12 10 65 13 9 2,089 9 9 9 1,924 6 9 501 10 10 10 4,714 19 1 585 9 4 717 13 6 194 6 4 475 0 0 205 3 7 902 15 4 15,121 16 11 368 13 7 477 0 4 1,118 18 2 4,440 17 2 865 9 4 736 11 6 11,760 0 8 178 14 8 457 5 11 846 0 2 388 0 4 4,109 10 5 331 16 6 18,833 9 3 199 13 11 2,825 11 0 3,889 3 10 109,232 4 9	£ s. d. 13,858 19 5 364 16 8 961 11 5 816 4 4 1,093 18 5 3,402 15 10 552 9 11 304 6 2 1,884 13 11 916 17 8 640 3 5 987 3 0 5,400 1 5 373 15 6 1,463 9 2 3,998 5 4 1,0667 13 5 552 19 5 660 0 0 213 5 2 424 14 4 165 15 4 4686 1 10 15,264 10 8 401 5 4 421 16 4 854 3 7 4,365 8 11 667 4 11 515 5 2 12,480 5 6 150 6 2 372 6 727 12 7 259 14 9 3,911 5 4 192 15 3 200 0 3 20,185 14 3 332 19 3 1,715 16 11 2,841 17 3	## 8. d. 2,334 13 5 784 1 4 623 0 4 1,789 2 1 4,292 19 10 4,490 15 8 11,652 13 9 232 17 5 192 6 7 13 4 4 1 18 0 224 13 8 8,199 8 8 119 1 6 212 3 3 38,654 2 10	£ s. d. 6,872 7 6 229 19 6 3,034 19 8 417 8 10 1,163 13 3 2,630 13 10 399 18 10 57 8 4 772 14 11 280 16 2 39 11 5 1,107 3 6 1,941 15 2 232 0 10 97 3 4 9,067 3 6	£ s. d. 18,995 12 9 1,241 9 7 1,477 14 8 2,524 19 6 5,673 15 8 8,144 17 0 12,317 0 3 362 7 10 1,049 2 2 462 18 1 198 1 5 1,089 4 5 11,502 17 2 379 14 4 277 17 0 40,743 12 7 1,924 6 9 4,1127 19 2 8,182 11 7 865 9 8 1,762 18 5 357 2 10 1,821 12 7 1,454 13 8 3,115 17 4 24,436 19 7 1,130 16 9 1,1454 13 8 3,115 17 4 24,436 19 7 1,130 16 9 1,1454 5 6 3,295 1 0 13,036 13 10 2,663 18 1 1,852 3 11 27,516 5 4 402 6 8 848 10 0 1,131 1 11 701 12 10 12,237 7 11 339 5 0 526 8 4 104,588 0 3 1,014 18 11 8,516 8 4 6,228 19 11	£ s. d. 20,731 6 11 594 16 2 3,996 11 1 1,233 13 2 2,257 11 8 6,033 9 8 952 8 9 361 14 6 2,657 8 10 1,197 13 10 679 14 10 2,094 6 6 7,341 16 7 605 16 4 252 12 10 10,530 12 8 3,998 5 4 1,957 4 1 19,788 16 6 1,130 16 10 1,379 19 4 250 17 1 19,788 16 6 1,130 16 10 1,379 19 4 250 17 1 19,788 16 10 1,379 19 4 250 17 1 19,788 16 10 1,379 19 4 250 17 1 19,788 10 1,013 10 1,02 8 0 1,013 10 1,013 15 10 1,013 15 10 1,013 15 10 1,015 8 16,742 4 7 14,996 5 8	£ 8. d. 39,726 19 8 1,836 5 9 5,474 5 9 3,758 12 8 7,931' 7 4 14,178 6 8 13,269 9 0 724 2 4 3,706 11 0 1,660 11 11 87,7 16 3 3,183 10 11 18,844 13 9 985 10 8 530 9 10 51,274 5 3 5,922 12 12 16,085 3 3 27,971 8 1 1,996 6 6 3,142 17 9 607 19 11 2,700 12 6 1,916 4 8 5,768 17 4 67,685 3 2 2,492 10 8 1,891 2 6 5,267 15 3 30,371 9 8 4,097 10 11 2,924 11 11 81,183 19 4 568 14 8 1,440 16 5 3,362 5 5 1,100 8 3 23,954 14 1 608 1 10 862 7 2 236,288 7 8 2,030 7 4 25,258 12 11 21,225 5 7
Riverstone & Platfms.	678 10 0	585 18 O	7INDSOR AND RI	CHMOND RAILW		6,652 14 10	12,884 1 11
Mulgrave	476 I 3 3,089 5 2 268 I5 8	377 6 9 3,338 9 7 2,149 3 6 2,794 9 0	2,425 15 5 2,876 15 9 76 14 11	296 6 1 2,406 6 2 126 12 2	2,901 16 8 5,966 0 11 345 10 7 3,247 18 8	673 12 10 5,744 15 9 2,275 15 8 4,936 18 7	3,575 9 6 11,710 16 8 2,621 6 3 8,184 17 3
	7,073 9 2	9,245 6 10	11,619 4 9	11,038 10 10	18,692 13 11	20,283 17 8	38,976 11 7

No. 26—continued.

GREAT NORTHERN AND NORTH-WESTERN RAILWAY.

	Stations.	Coaching	-Amount.	Goods-	Amount.	Coaching and G	oods—Amount.	Total Coaching and Goods, Amount
_		Ôutwards.	Inwards.	Outwards	Inwards.	Outwards.	Inwards.	Outwards and Inwards.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	æ s. d.	£ s. *dì.
NE HWE HWE H	entral Office ewcastle coneysuckle Point amilton Veigh-bridge ullock Island Varatah Vallsend exham exham Town Voodford ast Maitland corpeth igh-street Vest Maitland	19,891 4 4' 1,903 11 11 668 2 3	1,844 10 6 771 1 8 1,040 6 1 1,498 0 6 23,8259 0 11 1,028 0 3 455 16 8 1,040 6 1 134 1 9 154 0 6 2,382 6 4 1,498 0 1 368 17 5 9,042 19 11	41,518 13 3 3,713 9 9 262 13 2 63,081 5 8 13,415 11 11 2,054 6 11 200 18 5 86 8 1 170 12 6 231 17 6 1,323 8 5 55,989 7 8 9 4 2 15,420 18 6	70,850 12 1 1,166 16 3 162 13 11 	2,189 6 7 61;409 17 7 5,617 1 8 930 15 5 63,081 5 8 13,415 11 11 4,044 17 4 1,232 2 2 950 15 1 431 1 8 485 5 4 3,991 16 4 58,191 15 4 3,839 6 11 20,743 9 1	. 373 7 6 94,109 13 0 2,194 16 6 618 10 7	2,562 14 1 155,519 10 7 7,811 18 2 1,549 6 0 63,081 5 8 13,849 6 1 6,848 17 4 3,538 0 8 2,217 6 7 .587 8 9 673 18 3 10,286 0 3 94,149 4 4 4,297 8 8 33,215 15 8
	•	43,075 12 2	42,352 9 7	197,478 15 11	117,281 3 5	240,554 8 1	159,633 13 0	400,188 1 1
E G B Si R M A So W B M Q W W C W W C W M M K K W M M K K K K K K K K K K K K	arley ochinvar reta ranxton ingleton avensworth uswellbrook berdeen cone landford urrurundi oughboy Hollow Villow Tree uirindi Verris Creek urrabubula Vest Tamworth amworth oonbi Valcha Road cntucky ralla	774 18 4 987 10 5 1,147 4 0 5,460 0 4 383 16 6 3,202 1 7 388 2 1 1,682 16 11 264 16 8 340 16 5 1,948 2 4 229 9 4 719 9 11 2,008 6 5 869 12 2 392 15 6 2,849 17 16 6,703 4 8 3,223 7 1 636 14 9	165 8 1 536 3 2 863 16 2 825 18 10 5,597 8 4 340 0 10 3,353 10 10 326 18 2 1,510 6 10 273 15 7 311 0 9 2,040 4 4 284 14 7 640 8 6 2,060 4 1 754 9 8 290 12 9 6,061 5 7 4,050 5 6 2,992 13 2 523 1 2	235 11 5 923 11 8 1,115 0 3 1,656 8 10 3,371 11 4 271 18 3 2,453 5 3 473 8 9 1,345 12 4 175 17 9 343 3 4 647 8 10 1,75 16 10 1,192 2 5 5,942 14 10 454 17 3 196 15 10 16,047 5 11	10,742 11 10 264 1 7 287 19 7 341 9 8 6,096 18 10 128 8 5 5,001 13 5 291 3 0 1,609 9 8 127 7 1 250 7 6 1,944 1 4 128 16 7 669 11 8 3,606 16 6 535 4 6 320 6 16 41,912 12 9 15 10 9 5,941 9 0 1,009 11 7 131 11 3 24,620 16 1	439 10 4 1,698 10 0 2,102 10 8 2,803 12 10 8,831 11 8 655 14 9 5,655 6 10 861 10 10 3,028 9 3 440 14 5 683 19 9 2,595 11 2 405 6 2 1,911 12 4 7,951 1 3 1,324 9 5 589 11 4 18,897 3 10 6,703 4 8 4,179 6 2 1,772 13 8 277 15 3 7,149 2 4	10,907 19 11 800 4 9 1,151 15 9 1,167 8 6 11,694 7 2 468 9 3 8,355 4 3 618 1 2 3,119 16 6 401 2 8 561 8 3 3,984 5 8 413 11 2 1,310 0 2 5,667 0 7 1,289 14 2 6,101 18 10 47,973 18 4 4,065 16 3 8,934 2 2 1,532 12 9 1,532 12 9 1,532 12 9 1,532 12 9 1,532 12 9 1,532 12 9 1,532 12 9 1,532 12 9 1,532 12 9 1,532 12 9 1,532 12 9 1,532 17 7 6	11,347 10 3 2,498 14 9 3,254 6 3,971 1 4 20,525 18 10 1,124 4 0 14,010 11 1 1,479 12 0 6,148 5 9 841 17 1 1,245 8 0 6,579 16 10 818 17 4 3,221 12 6 13,618 1 10 2,614 3 7 1,200 10 2 66,871 2 2 10,769 0 11 13,113 8 4 3,305 6 5 409 6 6 36,296 9 10
		38,134 19 7	38,328 18 4	42,823 9 4	105,977 18 8	80,958 8 11	144,306 17 0	225,265 5 11
G B	recza urlewis unnedah oggabri arrabri	478 18 8 181 13 2 6,868 16 10 1,680 4 2 2,507 8 3	455 0 2 131 6 7 7,647 9 6 1,903 13 0 2,108 15 ,8	4,167 2 4 1,036 3 9 17,059 7 0 7,027 4 8 6,850 0 0	822 12 4 60 2 7 34,066 5 5 7,845 1 10 10,388 18 9	4,646 I 0 1,217 I6 II 23,928 3 I0 8,707 8 I0 9,357 8 3	1,277 12 6 191 9 2 41,713 14 11 9,748 14 10 12,497 14 5	5,923 13 6 1,409 6 .1 65,641 18 9 18,456 3 8 21,855 2 8
	•	11,717 1 1	12,246 4 11	36,139 17 9	53,183 0 11	47,856 18 10	65,429 5 10	113,286 4 8
G.	aburbanreat Northernorth-Western	43,075 12 2 38,134 19 7 11,717 1 1	42,352 9 7 38,328 18 4 12,246 4 11	197,478 15 11 42,823 9 4 36,139 17 9	117,281 3 5 105,977 18 8 53,183 0 11	240,554 8 1 80,958 8 11 47,856 18 10	159,633 13 0 144,306 17 0 65,429 5 10	400,188 I I 225,265 5 II. II3,286 4 8
		92,927 12 10	92,927 12 10	276,442 3 0	276,442 3 0	369,369 15 10	369,369 15 10	738,739 11 8
				Grand S	UMMARY,			
W	uburban Line	133,781 14 9½ 109,232 4 9	217,962 8 8½ 135,011 4 11 110,872 10 1 9,245 6 10	159,051 168 232,432 15 9	222,185 5 7 284,151 15 0	648,646 1 11 292,833 11 5 ¹ 341,665 0 6 18,692 13 11	529,332 14 6½ 357,196 10 6 395,024 5 1 20,283 17 8	1,177,978 16 5½ 650,030 1 11½ 736,689 5 7 38,976 11 7
	orthernails, &c	473,091 10 6½ 92,927 12 10	473,091 10 6½ 92,927 12 10	828,745 17 3 276,442 3 0	828,745 17 3 276,442 3 0	1,301,837 7 9½ 369,369 15 10 29,808 17 6	1,301,837 7 9½ 369,369 15 10 29,808 17 6	
		566,019 3 42	566,019 3 42	1,105,188 0 3	1,105,188 0 3	1,701,016 I 1½	1,701,016 1 1½	3,402,032 2 3

No. 27.

Return showing Live Stock Earnings for years 1881 and 1882.

	,	,	Year 1881.			*		Year 1882,	<u> </u>	
. Month.	Southern.	Western.	Richmond.	Northern.	Total.	Southern.	Western.	Richmond.	Northern.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
January	3,291 5 11	2,233 5 5	16 2 9	638 6 2	6,179 0 3	4,436 13 5	4,042 0 7	29 15 7	1,250 16 6	9,759 6 I
February	2,603 12 0	1,365 7 7	8 14 3	395 12 9	4,373 6 7	3,689 9 1	3,012 17 8	12 9 5	591 4 7	7,306 0 9
March	3,996 r 4	1,751 13 1	7 13 0	777 0 2	6,532 7 7	4,870 2 0	2,477 6 5	26 4 6	1,359 3 5	8,732 16 4
April	2,591 2 10	1,283 13 7	8 r 9	880 17 6	4,763 15 8	3,283 12 6	3,637 19 11	17 10 6	1,725 9 4	8,664 12 3
May	2,282 8 I	1,717 11 5	12 8 7	855 17 5	4,868 5 6	2,322 6 7	5,050 6 11	20 7 2	3,651 11 3	11,044 11 11
June	2,227 6 4	1,545 16 4	8 0 3	692 111	4,473 4 10	1,696 1 3	4,667 17 8	11 9 5	2,121 15 1	8,497 3 5
July	1,678 4 2	1,416 6 5	7 5 8	887 9 2	3,989 5 5	2,930 0 9	6,559. 9 6	21 0 5	2,037 5 2	11,547 15 10
August	2,789 19 9	4,428 17 6	8 14 6	1,112 7 5	8,339 19 2	2,894 13 9	7,658 11 1	21 18 3	2,560 10 10	13,135 13 11
September	2,745′10 0	4,681 16 0	17 14 10.	542 13 4	7,987 14 2	2,668 4 2	10,992 13 1	26 I9 7	2,248 11 10	15,936 8 8
October	3,898 9 0	4,008 18 5	12 15 2	850 8 5	8,770 11 0	5,442 19 8	8,934 8 0	14 8 11	2,429 15 0	16,821 11 7
November	4,764 I 5	4,499 16 11	13 1 4	451 11 9	9,728 11 5	6,663 6 2	7,452 6 11	33 6 9	1,851 7 4	16,000 7 2
December	4,174 2 1	4,641 9 2	16 o 5	479 12 9	9,311 4 5	4,120 4 7	6,898 16 9	22 9 5	1,591 1 8	12,632 12 5
Totals	37,042 2 11	33,574 11 10	136 12 6	8,563 18 9	79,317 6 0	45,017 13 11	71,384 14 6	257 19 11	· 23,418 12 O	140,079 0. 4

No. 28.

Return of the quantity of Wool carried on the Railways of New South Wales, and the amount of Freight received therefrom, in 1881 and 1882.

					1881.								1882.						
Months.		Bales.	*	,	Weight.			Freight.	•		Bales.			Weight.	•		Freight.		
	s. & w.	North.	Total.	S. & W.	North.	Total.	S. & W.	North.	Total.	S. & W.	North.	Total.	s. & w.	North.	Total.	S. & W.	North.	Total.	
January	No. 13,093	No. 5,282	No. 18,375	Tons. 2,192	Tons. 978	Tons. 3,170	£ 4,295	£ 1,969	£ 6,264	No. 17,038	N o. 8,989	No. 26,027	Tons. 2,834	Tons. 1,620	Tons. 4,454	£ 6,659	£ 3,714	£ · 10,373	
February	5,569	2,338	7,907	890	399	1,289	1,882	922	2,804	8,215	3,826	12,041	1,301	688 ·	1,989	3,052	1,597	4,649	
March	4,346	1,200	5,546	698	178 .	876	1,471	479	1,950	5,898	4,633	10,531	942	843	1,785	2,259	1,939	4,198	
April	2,362	314	2,676	406	49	455	619	124	743	4,741	2,041	6,782	749	338	1,087	1,742	832	2,574	
May	785	292	1,077	136	49	185	136	115	251	3,325	2,967	6,292	547	485	1,032	852	1,124	1,976	
June	960	112	1,072	165	17	182	· 137	44	181	1,452	248	1,700	245	43	288	276	104	380	
July	774	167	941	132	29	161	,112	7 ¹	186	997	75	1,072	166	. 9	175	194	27	-221	
August	2,106	432	2,538	- 375	81	456	745	175	920	3,036	782	3,818	528	143	671	1,209	315	1,524	
September	16,708	4,886	21,594	3,033	918	3,951	8,181	1,979	10,160	18,627	7,620	26,247	3,310	1,425	4,735	8,889	3,104	11,993	
October	33,663	10,820	44,483	6,147	2,236	8,383	15,674	4,587	20,261	27,355	13,720	41,075	5,098	2,609	7,707	12,431	5,672	18,103	
November	45,964	14,044	60,008	8,232	2,761	, 10,993	19,693	5,517	25,210	41,387	15,560	56,947	7,354	3,009	10,363	17,700	6,599	24,299	
December	42,182	15,988	58,170	7,328	3,039	10,367	17,737	6,516	24,253	30,513	12,873	43,386	5,326	2,471	7,797	12,527	5,685	18,212	
Total	168,512	55,875	224,387	29,734	10,734	40,468	70,685	22,498	93,183	162,584	73,334	235,918	28,400	13,683	42,083	67,790	30,712	98,502	
Increase in 1882				<i>,</i>		•···•					17,459	11,531	•••••	2,949	1,615		8,214	5,319	
Decrease in 1882					• • • • • • • • • • • • • • • • • • • •			····••	••••	5,928	•••••	•••••	1,334		•••••	2,895	•••••	•••••	

No. 29.

GREAT SOUTHERN AND WESTERN RAILWAY.

RETURN of the number of Bales of Wool forwarded from the undermentioned Stations, from 1st September, 1881, to 30th April, 1882, and from 1st September, 1882, to 30th April, 1883.

- Stations.	1881-1882.	1882-1883.	Stations.	1881-1882.	1882-1883
	Bales.	Bales.		Bales.	Bales.
Sydney	8,925	9,265	Kooroongal		1,642
Darling Harbour	1,148	1,344	Carrathool		2,194
Burwood	I		Warradgery	******	15
Homebush	. 7		Hay		8,312
Auburn		279	Narellan		4
Granville,	944	1,513	Camden		28
Cabramatta		ı	Total S. and S.W. Line	Q	
Liverpool	5,421	5,688	,	81,552	91,873
Campbelltown		26	Parramatta	65	150
Menangle		8	Blacktown		- 5
Douglas Park		28	Rooty Hill	3	2
Mittagong		17	South Creek .:	2	
Bowral			Penrith	17	13
Moss Vale	161	58	Emu Plains	I	•••••
Badgery's		15	Mount Victoria	62	37
Towrang	•	32	Esk Bank	10	7
Marulan		530	Bowenfels	17	13
Foulburn		9,152	Wallerawang	4,632	121
Breadalbane	153	196	Rydal	18	55
Gunning.	2,090	1,927	Tarana	440	382
Jerrawa	31	23	Locksley	16	17
Yass	2,678	2,412	Brewongle	244	183
Bowning	3,648	2,865	Raglan	76	62
Binalong		2,563	Kelso	223	243
along		-,5 5	Bathurst	1,567	1,380
Cunningar		479	Perth	627	677
Harden		6,634	George's Plains	50	64
Cootamundra	2.21	3,903	Wimbledon	98	57
Wallendbeen	819	806	Newbridge	632	572
Bethungra	494	452	Blayney	5,104	3,514
Cungegong		36	Spring Grove	430	394
Illabo		. 1,015	Spring Hill	55	20
Junee Junction	1,569	620	Orange	17,490	10,744
Harefield	.311	500	Mullion Creek	4	2
Bomen	1,273	1,304	Warne	553	. 219
South Wagga	3,759	3,960	Ironbarks	405	228
Sandy Creek	39	40	Springs	10	. 607
Hanging Rock	2,050	1,789	Wellington	4,509	2,422
Yerong Creek	337	291	Murrumbidgerie	351	151
Culcairn	893	980	Dubbo	54,177	24,226
Bowna	. 2	545	Mary Vale		3
Albury	6	42	Narramine		2,319
Old Junee	862	1,665	Nevertire		21,881
Coolaman	1,596	2,234	Piper's Flat		10
Devlin's Siding	566	858	Capertee	•••••	3,334
Frong Grong	583	527	Riverstone	2	25
Narrandera	5,487	4,745	Mulgrave		2
Yanko	1,266	960	Windsor		3
Hulong	4,832	5,196	Clarendon	5	
Darlington	2,137 ·	705	Richmond	5	
Benerembah	•••••	989	Total Western Line	91,969	74,150
Bringagee	******	460	Grand total	173,521	166,023

No. 29-continued.

GREAT NORTHERN RAILWAY.

RETURN of the number of Bales of Wool forwarded from the undermentioned Stations from 1st September, 1881, to 30th April, 1882, and from 1st September, 1882, to 30th April, 1883.

Stations.	1881-1882.	1882-1893.	Stations.	1881-1882.	1882-1883.
	Bales.	Bales.		Bales.	Bales.
Waratah	•••••	1.	Currabubula	600	142
West Maitland	82	122	West Tamworth	18,800	12,997
Lochinvar	*******	3	Moonbi	167	339
Greta	19	5	Walcha Road		2,984
Branxton	184	170	Kentucky		57 ¹
Singleton	274	247	Uralla		6,163
Ravensworth	237	253	Armidale		1,612
,Musclebrook	4,106	3,687	Breeza	526	618
Aberdeen	65	63	Curlewis	. 20	196
Scone	1,860	1,907	Gunnedah	30,798	11,021
Wingen	. 153	198	Boggabri		6,251
Blandford	751	745	Narrabri	••••••	29,066
Murrurundi	268	157	Morpeth	· · · · · · · · · · · · · · · · · · ·	98
Doughboy Hollow	252	442	Wallsend		9
Willow Tree	1,592	1,152			
Quirindi	4,196	5,387	,	65,153	86,836
Werris Creek	: 203	230			-

SUMMARY.

	1881-1882.	1882-1883.
Southern and Western Railway Northern	Bales. 173,521 65,153	Bales: 166,023 86,836
Total	238,674	252,859

No. 30.

STATEMENT of the Value of Live Stock and Wool and other Exports and Imports across the Border during the year 1882.

			Value of	Live Stock.			Qua	antity and Value of	Wool.	Other Exports.	Exports—	Imports—
	Goats.	Horses.	Cattle.	'Sheep.	Pigs.	Total.	Bales.	lbs.	Value.	Value.	Exports— Total Value.	Imports— Total Value.
	£	£	£	£	£	£	No.		£	£	£	£
Albury to Victoria		11,904	65,558	17,283	93	. 94,838	12,242	4,222,278	232,253	16,419	343,510	386,523
Corowa do	:	2,678	19,374	36,992		59,044	13,162	4,831,746	236,919	15,467	311,430	106,427
Moama do	4	7,750	113,400	233,066	278	354,498	26,935	10,021,019	538,894	62,673	956,065	522,051
Hay do		·				, 	28,139	10,719,300	486,127	2,954	489,081	32,650
Swan Hill (Crossing) do	•••	1,380	10,931	15,539	•••••	27,850	23,484	8,933,637	463,314	3,352	494,516	36,482
Euston to Victoria		488	24,038	3,380	•…••••	27,906	2,376	771,043	52,322	240	80,468	11,214
Wentworth to Victoria			•••••				7,828	2,477,475	149,273	748	7 077 448	400.212
South Australia		•••••	6,825	11,200	•••••	18,025	50,798	17,139,728	898,615	4,787	5 1,071,448	499,212
Tocumwall to Victoria		260	1,985	13,178	•••••	15,423	1,314	. 308,465	15,700	245	31,368	25,747
Howlong do		1,163	3,989	742	81.	5,975	104	33,911	1,476	3,900	11,351	6,017
Stanthorpe to Queensland	•••••	••••••					204	87,506	5,590	45,319	50,909	9,965
Boggabilla do	•••••	•••••					523	229,207	15,613	141	15,754	1,421
Mungindi do	•••••		••••••		•••		•••••		•••••	12,873	12,873	40,412
Curriwillinghi do		860	13,723	31,931	•••••	46,514			• • • • • • • • • • • • • • • • • • • •	3,401	49,915	6,507
Hungerford do		700	2,800	21,500		25,000	••••••	·····	••••••	11,818	36,818	. 11,032
Barringun do	•••••		•••••		•••••	,				13,481	13,481	18,478
Tenterfield do	•••••		······	•••••			334	171,445	8,572	47,930	56,502	8,142
Wilcannia do	•••••	•	•••••	•••••			***********		•••••	9,762	9,762	
Total in 1882	4	27,183	262,623	384,811	452	675,073	167,443	59,946,760	3,104,668	255,510	4,035,251	1,722,280
Total in 1881	5	23,527	240,347	447,470	1,121	712,470	141,402	52,942,993	2,823,085	228,604	3,764,159	1,530,962
Increase in 1882		3,656	22,276				26,041	7,003,767	281,583	. 26,906	271,092	. 191,318
Decrease in 1882	I			62,659	669	37,397					•••••	••••

No. 31. CENTRAL RAILWAY OFFICE.

STATEMENT of the Business transacted and Revenue received at the Central Railway Office, during the year 1882.

		rths.	cs.	Cattle s.			Pa	ircels.					Pass	engers.			Value	, Ti	ramway.			Parcels.			Amount	
Da	te.	ng-be	Horse-boxes.	and (rucks	Nor	thern.	South	ern & W	vestern.	Total		Northern.		Sout	thern and V	Vestern.	of Time-table Books.			Nor	thern.	Sout	thern and W	Vestern.	received for	Total Amounts.
_		Sleeping-borths	Hor	Sheep and (Trucks	In.	Out.	Cloak.	In.	Out.	numbers.	1st Class.	2nd Class.	Amount.	1st Class.	2nd Class.	Amount.	sold.	Number of Tickets.	Amount.	Inwards.	Outwards,	Cloaked.	Inwards.	Outwards.	Sleeping- berths.	
188	2.	.							 		No.	No.	£s.d.	No.	No.	£ s. d.	£s. d.		£ s. d.	£s.d.	£ s. d,	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. o
Jan		322	5	70	327	1,362	317	527	6,119	8,652	4	6	14 18 6	790	392	2,184 0 11	2 7 1	519,258	4,327 3 0	46 9 8	104 5 4	i	20 12 11	447 8 5	161 0 0	7,312 15
Feb).	307	2	54	436	1,126	360	1,016	7,015	9,953	5	12	26 17 11	778	281	1,941 7 11	2 16 5	463,814	3,865 2 0	37 5 6	107 6 2		38 10 0	431 5 10	153 10 0	6,614 3
Mai	r. "	290	6	20	. 398	1,425	355	1,217	7,322	10,717	5	23	43 0 9	1,087	546	2,588 16 4	3 11 3	495,702	4,130 17 0	34 4 6	129 5 2	6 14 0	47 0 3	484 6 4	145 0 0	7,612 15
Apr	il .	301	15	130	356	1,233	381	1,125	7,143	10,238	25	11	35 0 1	1,128	437	2,603 10 5	1 9 3	535,566	4,463 1 0	25 0 6	103 0 8	6 11 10	42 11 5	446 0 11	150 10 0	7,876 16
May	7	288	4	60	383	1,671	377	1,398	7,698	11,527	7	8	18 10 9	688	357	2,038 3 8	4 13 4	550,881	4,590 13 6	28 12 7	150 0 6	6 14 0	55 15 2	498 7 8	144 0 0	7,535 11
Jun	e :	201	3	75	367	1,635	427	1,287	7,181	.10,397	42	4	57 10 1	653	319	2,086 14 4	1 8 11	587,001	4,891 13 6	29 14 4	130 16 1	4 6 0	54 0 0	455 16 6	100 10 0	7,812 9
Jul	y	286	2	37	421	1,428	487	1,371	8,227	11,934	23	15	41 10 8	611	337	2,004 14 0	0 14 8	591,185	4,926 10 10	31 6 5	103 10 0	5 16 0	56 11 3	480 17 8	143 0 0	7,794 11
Aug	ŗ. :	300	3	29	463	1,362	451	1,428	7,779	11,483	14	9	40 4 0	701	403	2,012 15 10	4 11 6	696,081	5,800 13 6	34 1 7	130 19 0	5 8 0	60 9 9	520 9 6	150 0 0	8,759 12
Sep	t. :	310	1	5	`516	1,583	615	1,387	8,704	12,805	47	13	101 14 0	776	359	2,107 17 0	1 10 3	965,387	8,044 17 10	34 18 7	135 9 8	8 19 10	60 15 5	495 17 10	155 0 0	11,147 0
Oct.	. '	797	0	122	498	1,426	520	1,223	8,368	12,035	9	18	35 5 1	1,277	. 379	4,031 13 8	4 7 11	1,024,108	8,534 4 8	34 1 8	153 10 5	7 1 0	52 9 0	540 1 3	398 10 0	13,791 4
Nov	. 1	624	2	62	536	1,897	618	1,727	8,897	13,675	17	15	42 15 1	953	478	2,020 4 7	2 15 6	1,144,386	9,536 11 0	35 7 2	162 1 3	6 14 0	66 15 6	554 18 0	312 0 0	12,740 2
Dec	. '	778	3	109	639	1,853	715	1,876	9,005	14,088	127	44	169 6 3	1,632	714	4,031 13 9	5 9 8	1,280,763	10,673 0 6	38 14 6	163 0 5	7 15 0	79 7 11	568 16 5	i	16,126 4
	4,	804	46	773	5,340	18,001	5,623	15,582	93,458	138,004	325	178	626 13 2	11,074	5,002	29,651, 12 5	35 15 9	8,854,132	73,784 8 4	409 17 0	1,573 4 8	80 11 2	634 18 .7	5,924 6 4	2,402 0 0	115,123 7
	•			. '	1							<u> </u>			<u> </u>	•			. 1	1 (<u> </u>	<u> </u>	· · ·	<u>. </u>
			•	<i>,</i> .			·				•				ST	MMARY	7						•		•	
4								•				1882	2.	1881		MIMIATI	•					1882.	188	T		
					•							æ	s. d.	£	s. d.	Num	ber of Pa	rcels boo	ked			.38,004		.604 -		i
														£	s. a.	ł					,	-	•			
			•			Fre	ight, &	cc., Ra	ilway	Departr	nent	41,338	19 1	36,297	8 5	1			booked			16,579	15,	979		
						Val	ue of !	Tramw	ra y Tic	kets		73,784	8 4	25,735	3 4				ickets sold .			54,132	3,092,	120		
								٠			_				· .				ks ordered .			773		409	•	
					· ·						-								······			46	•	53		
						•					4	3115,123	7 5	62,032	11 9	Sleep	ing-berths	s ordered	٠			4,804	3,	7 75		

No. 32.

Return of the quantity of Coal exported from Newcastle to Intercolonial and Foreign Ports in 1880 and 1881, showing the increase and decrease in each.

Countries.	1882.	1881.	Increase.	Decrease.
·	Tons.	Tons.	Tons.	Tons.
Victoria	403,510	368,417	35,093	***************************************
New Zealand	142,582	128,240	14,342	•••••
South Australia	134,099	103,961	30,138	·····
Tasmania	29,280	23,807	5,473 °	
Western Australia	4,384	891	3,493	
Fiji	6,725	3,100	3,625	
Queensland	18,747	11,167	7,580	
Total, Intercolonial	739,327	639,583	99,744	
Foreign—			•	
Pahiti	. 1,175		1,175	
South Sea Islands	394		394	
Callao	1,035		1,035	
New Caledonia	4,106	3,306	800	
ndia	36,153	11,645	24,508	
United States	3,004	9,190	•••••	6,186
San Francisco	100,769	79,337	21,432	· · · · · · · · · · · · · · · · · · ·
Hong Kong	57,996	87,853		. 29,857
China	9,631	4,960	4,671	
Mauritius	19,688	5,870	13,818	
Japan	16,414	15,218	. 1,196	
Manila	21,030	17,969	3,061	
Valparaiso	18,557	7,104	11,453	
Honolulu	12,038	8,169	3,869	
Java	31,107	5,513	25,594	
Cormto	650		650	
Africa	/	292		292
Bankok	· · · · · · · · · · · · · · · · · · ·	460		460
Guam	3,265	2,900	365	
Ilo Ilo				
Iquique	1,595		1,595	
Mexico	1,724		1,724	
San' Diego	788		788	
Total, Foreign	341,119	259,786	118,128	36,795
Grand Total	1,080,446	899,369	217,872	36,795

No. 32-continued.

PORT OF NEWCASTLE.

Foreign and Intercolonial Trade.

	1	882.	18:	81.	· Incr	ease.
	No. of Vessels.	Tonnage.	No. of Vessels.	Tonnage.	No. of Vessels.	Tonnage. :
Inwards		559,228	833	481,695 645,543	6	77,533 92,229

Number of Tons and Value of COAL Exported.

Foreign and Intercolonial.

1	1882.	1	381.	Increase.	Increase.	
Tons.	Value.	Tons.	Value.	Tons.	Value.	
	£		£		£	
1,080,446	527,575	899,369	343,931	181,077	183,644	

Coastwise.

		1882.	1881.		
	No. of Vessels.	Tons.	No. of Vessels.	Tons.	
Outwards	1,170	289,779	1,188	362,987	

No. 33.

GREAT NORTHERN RAILWAY.

MONTHLY RETURN OF COAL hauled for the year 1882.

	Newcastle Colliery.	A. A. Co.	Lambton Colliery.	New Lambton Colliery.	Ferndale Colliery.	Co-operative Colliery.	Wallsend Tunnels.	Wallsend Pit.	Purified Coke Colliery.*
1382.	T. c. q. £ s. d.	T. c. q. £ s. d.	T. c. q. £ s. d.	Т. с. ц. £ s. d.	T. c. q. £ s. d	. T. c. q. lbs. £ s. d.	T. c. q. & s. d.	T. c. q. £ s. d.	T. c. q. £ s. d.
January	11055 0 0 459 1 1		15486 9 2 645 5 3	2459 5 2 80 11 10	3801 19 0 158 19 4	9712 7 3 0 615 0 7	24156 5 2 1034 4 11		171 18 1 7 3 3
February	10363 10 2 431 0 2		16500 18 0 687 10 8	4804 6 2 167 16 1	4837 2 1 228 9 1	1 13210 4 0 0 775 9 5	25540 5 3 1132 15 7		194 1 1 8 1 8
March	20933 16 2 871 2 3		21786 19 0 907 15 9	6075 9 0 223 4 4	125 1 0 28 16 1	1 17476 3 3 10 954 6 6	38968 12 1 1739 18 6		184 13 2 7 13 11
April	11903 13 2 494 18 1		15948 19 3 664 10 8	5649 5 1 202 9 8	4096 15 1 201 10. 3	3 14113 6 2 0 855 10 6	29275 0 0 1283 19 8		432 7 1 18 0 4
May	14831 10 1 615 19 4		22540 11 2 939 3 9	6836 1 1 241 19 3	5527 4 0 231 16 11	1 18895 9 3 0 1206 17 9	39692 2 3 1689 15 5		336 1 1 16 1 9
June	15114 5 3 626 19 3		22079 17 2 919 19 11	6902 3 1 252 15 4	4881 3 0 204 8 10	19371 15 3 0 1215 10 8	40593 8 2. 1740 17 10		391 14 0 16 6 5
July	13054 3 2 541 16 2	808 17 0 37 15 0	21944 19 3 914 7 4	6730 10 1 268 17 8	3391 0 1 142 9 1	1 19067 15 3 0 1195 16 9	34430 5 0 1438 10 11		291 14 3 12 3 1
August	13549 3 2 562 1 6	630 6 2 26 5 3	23665 12 2 986 1 3	7095 12 1 264 2 11	4142 15 1 176 5 2	2 20321 1 3 0 1212 13 11	43934 6 0 1918 11 9	335 0 0 8 7 6	365 16 2 15 4 10
September	12058 3 0 500 1 9	960 17 0 40 0 8	21767 18 1 910 13 3	5727 12 1 205 11 7	3816 1 0 160 1 0	0 19504 17 1 0 1085 1 0	40,669 7 2 1761 10 5		165 19 2 6 18 4
October	11462 16 3 479 7 2	5 4 0 0 12 1	20770 12 1 865 8 9	7049 3 3 252 15 3	4190 3 2 174 11 9	9 16556 18 0 0 931 15 5	32200 17 2 1419 13 9		
November	11213 18 2 470 10 2		20168 6 3 840 6 10	6407 18 0 231 13 4	3887 3 1 161 19 3	3 17056 7 1 0 951 17 0	28686 19 1 1258 18 10		124 11 2 5 3 10
December	9023 14 1 375 8 9		15856 10 0 660 13 8	6339 2 3 231 15 0	3124 1 2 130 3 4	4 14916 1 3 0 938 10 0	29675 14 0 1244 9 6		183 17 3 7 13 3
Total					<u> </u>	- -			
	154563 16 0 6428 5 8	2405 4 2 104 13 0	238517 14 3 9941 17 1	72076 10 0 2623 12 3	45820 9 1 1999 10 1	1 200202 9 1 10 11938 9 6	407823 4 0 17663 7 1	335 0 0 8 7 6	2892 15 2 120 10 8
			<u>'</u>	<u>' </u>	·				1
	Minmi Colliery.	Woodford Colliery.	Greta Colliery.	Goose Colliery.	Rix's Colliery.	Waratah Colliery. Sno	eddon's Colliery. Bricks	field Colliery.	Total.
	T. c. q. £ s. d.	T. c. q. £ s. d.	T. c. q. £ s. d.	T. c. q. £ s. d.	T. c. q. £ s. d.	T. c. q. £ s. d. T.	c. q. £ s. d. T. c	. q. & s. d.	r. c. q. lbs. £ s. d.
January	7995 4 2 399 15 1	176 9 0 11 4 7	3416 4 1 324 8 3	30 0 0 1 5 0	26 6 0 12 9 9	668	5 0 27 16 11 336 16	3 3 14 0 9 794	92 11 0 0 3791 6 7
February	9996 5 3 499 16 4	46 16 1 2 19 9	2108 16 1 179 19 4	18 0 0 0 15 0		634	7 0 26 8 6 607 16	4 2 25 6 5 888	62 8 0 0 4166 8 0
March	12806 7 3 640 6 5	394 9 0 25 16 8	2815 18 1 252 15 9	29 0 0 1 4 2	10 10 0 2 3 1	856	10 1. 32 8 9 1261 15	2 0 152 7 4 1237	25 2 1 10 5839 19 6
April	9272 1 3 464 1 6	471 5 2 29 18 3	3675 8 3 348 1 2	42 0 0 1 15 0	4 15 2 2 14 2	293 16 2 12 4 10 817	10 1 28 19 0 1283	3 2 106 7 5 972	79 9 1 0 4715 0 6
May	8002 2 0 400 9 1	786 13 2 49 3 4	4116 7 3 394 14 7	30 0 0 1 5 0	9 10 0 2 2 11	1538 5 2 64 1 10 931	14 1 32 1 8 1646 8	3 2 153 13 10 1257	702 1 0 6039 6 5
June	8287 12 2 414 7 7	1460 11 2 91 5 10	4156 10 0 409 16 6	30 0 0 1 5 0	26 18 1 13 13 4	58 18 0 2 9 1 811	14 2 27 1 1 1463 7	7 3 116 4 5 1256	30 0 1 0 6053 1 1
July	8150 3 1 407 10 1	1813 6 1 113 12 4	4605 2 3 422 17 8	14 0 0 2 0 4	13 0 0 6 0 10	1391 10 2 57 19 7 147	19 0 5 7 4 1154 9	0 0 48 2 0 1170	08 17 0 0 5615 6 2
August	11855 13 0 592 15 7	2062 7 0 128 17 11	4408 6 0 396 4 0	18 0 0 0 15 0	400 184	2495 8 0 103 19 6 416	17 0 13 17 11 1404 16	3 1 142 8 0 1367	05 1 2 0 6550 0 4
September	8473 16 3 423 13 11	1983 17 0 123 19 9	3621 13 3 332 10 7	42 0 0 1 15 0		835 13 1 38 18 0 37	0 1 1 4 8 1273 5	2 2 102 4 7 1209	37 19 1 0 5694 4 6
October	9865 11 1 493 13 4	1496 7 0 93 10 6	4459 12 3 400 8 0	42 0 0 1 15 0	5 10 0 0 13 9	827 12 3 34 14 11 36	0 2 1 4 0 858 10	0 2 98 3 3 1098	27 0 2 0 5248 6 11
November	11510 2 0 575 9 11	1533 4 2 95 19 4	4325 17 3 384 12 4	54 0 0 2-5 0		211 17 0 8 16 6 223	19 3 8 19 8 615 16	3 2 61 17 9 1060	20 2 0 0 5058 9 9
December	9387 0 2 469 7 0	753 7 3 47 1 8	3133 0 3 272 1 0	48 0 0 2 0 0	17 14 0 15 5 0	2276 18 1 94 17 4 412	8 2 16 17 6 654 5	2 3 27 5 1 958	01 14 2 0 4533 8 1
Total	115602 1 0 5781 5 10	12978 14 1 813 9 11	44842 19 0 4118 9 2	397 0 0 17 19 6	118 3 3 56 11 2	9929 19 3 418 1 7 5994	6 1 222 7 0 12560	0 2 1048 0 10 13270	60 7 3 10 63304 17 10

* Output of Wallsend Tunnel.

No. 34.

Monthly Return of Coal forwarded from Western Collieries during the year 1882.

Months.	Vale of Clw;	ydd.	Esk Ban	k.	Lithgow Valley C	ompany.	Bowenfels Compar	ny.	·Total.	
	T. c. q. lbs.	£ s. d.	T. c. q. lbs.	£ s. d.	T. c. q. lbs.	£ s. d.	T. c. q. lbs.	£ s. d.	T. c. q. lbs.	£ s. d.
January	2,368 6 0 0	. 834 2 2	1,803 12 0 0	700 .8 11	1,947 9 0 0	689 15 0	683 16 0 0	244 17 3	6,803 3 0 0	2,469 3 4
February	2,445 I O O	863 3 2	2,083 12 0 0	873 2 1	1,434 2 0 0	509 16 8	781 5 0 0	275 5 I	6,744 0 0 0	2,521 .7 0
March	2,660 4 0 0	944 2 4	2,175 18 0 0	913 9 8	1,839 8 0 0	627 18 7	674 6 0 0	238 9 6	7,349 16 0 0	2,724 0 1
April	1,996 4 0 0	695 17 5	1,962 3 0 0	918 8 8	1,631 5 0 0	591 1 9	626 3 0 0	223 6 2	6,215 15 0 0	2,428 14 0
May	3,262 3 0 0	1,147 4 8	2,679 14 0 0	1,118 9 7	2,158 16 0 0	760 13 3	1,022 14 0 0	362 15 11	9,123 7 0 0	3,3 ⁸ 9 3 5
June	3,004 5 0 0	1,049 16 1	3,178 4 0 0	1,441 17 9	3,094 I O O	1,131 5 5	1,477 8 0 0	552 5 7	10,753 18 0 0	4,175 4 10
July	3,374 17 0 0	1,256 0 1	2,879 I O O	1,216 3 0	2,942 5 0 0	1,094 6 8	1,135 15 0 0	415 6 3	10,331 18 0 0	3,98í 16 o
August	3,981 17 O O	1,465 3 10	2,798 3 0 0	1,278 18 9	3,161 11 0 0	1,183.17 7	1,024 5 0 0	371 2 3	10,965 16 0 0	4,299 2 5
September	3,108 5 o o	1,094 1 3		1,067 10 9	2,447 9 0 0	904 11 4	694 17 0 0	253 3 8	8,524 10 0 0	3,319 7 0
October	2,144 9 0 0	771 17 11	3,274 18 0 0	1,439 12 5	2,326 3 0 0	8 ₇₇ 1 9	838 11 0 0	299 2 3	8,584 r o o	3,387 14 4
November	953 15 - 0 0	353 19 5	3,814 3 1 0	1,352 14 11	2,444 10 0 0	855 13 6	364 2 0 0	127 12 3	7,576 10 1 0	2,690 o 1
December	2,725 8 0 0	960 16 1	2,335 15 0 0	870 14 4	2,392 1 0 0	835 14 3	252 14 0 0	80 14 9	7,705 18 0 0	2,747 ¹ 9 5
Total	32,024 14 0, 0	i1,436 4 5	31,259 2 1 0	13,191 10 10	27,819 0 0 0	10,061 15 9	9,575 16 0 0	3,444 0 11	100,678 12 1 0	38,133 11 11
10(81	32,024 14 0, 0	11,430 4 5	31,239 2 1 0	13,191 10 10	27,0-9	,3 9	7,3,3			

No. 35.

Monthly Return of Shale carried on the Great Southern and Western Lines during the year 1882.

Months.	Mittag	gong.	Joadja Siding.				Hai	rtley Valc.	Total.			
January February March April May June July September October November December	Tons cwt. qrs, 6 0 0 6 0 0 6 0 0	1 12 6 1 12 6 1 12 6	1,476 1,302 1,500 1,073 1,673 1,859 1,676 1,686 1,818 2,214 1,818	0 0 0 0 0 3 16 3 15 0 6 2 0 0 0 2 1 0 0 0	492 434 500 356 563 627 556 558 605	0 0 0 0 0 0 10 6 14 6 11 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2,134 7 2,148 4 1,619 14 1,900 5 2,582 18 2,868 10 2,598 0	1 176 0 0 1 194 0 0 3 689 0 0 0 702 0 0 0 700 15 6 3 724 0 0 2 554 7 9 2 650 15 3 1 865 4 7 1 962 8 9 0 885 9 10	1 ''' -	669 12 6 629 12 6 1,190 12 6 1,058 10 6 1,264 10 0 1,351 11 0 1,110 12 9 1,208 15 3 1,470 1 9 1,481 12 7		
Total	18 0 0	4 17 6	1,555 19,652	1 I	6,530		23,119 12	0 7,760 16 9	3,478 5 2 42,789 13 1	1,167 13 7		

No. 36.

Return of O.H.M.S. Coal forwarded from the Western Collieries during the year 1882.

Months.		Val	e of	Clwydd.					Eskb	ank.					Lith	gow.				٠	To	tal.		
April May	1,632 1,357 1,330 1,908 2,217 1,494 1,793 2,033 1,512 757	14 16 18 19 14 15 7 0	qrs. 0 0 0 0 0 0 0 0 0 0 0	939 555 573 836 931 870 678 624 1,033 720	11 18 8 0 14 16 7 11 17 5	10 1 2 5 6 10	Tons 1,394 1,412 1,456 1,846 2,014 1,933 2,205 2,307 2,422 3,074 2,475	10 9 12 19 14 2	. 000000	£ 695 631 605 728 1,214 718 981 681 596 897 1,162	13 10 10 6 10 7 10 9 7	2 0 2 6 7 3	Tons 2,047 1,542 1,541 1,271 1,795 2,161 1,974 2,087 2,074 2,598 3,336 2,449	3 16 5 14 16 6 19 18 16 15	00000000	£ 1,029 579 826 291 578 663 875 800 925 1,322 1,512 852	19 15 14 1 0 19 16 2 19 2	5 7 3 5 10 8 9	Tons 3,853 4,570 4,311 4,059 5,550 6,394 5,401 6,086 6,416 6,533 7,168 7,042	17 2 12 5 14 5 15 14 3 2	0 0 0 0 0 0 0	£ 1,969 1,831 2,032 1,733 2,237 2,749 2,273 2,406 2,641 2,639 2,630 2,761	0 2 0 7 4 0 0 I 7 I4	
Total		. 1	0	8,731		<u> </u>	22,543		•	8,913		4			0	10,258	<u> </u>	-	67,389			27,903		

No. 37. GREAT NORTHERN RAILWAY.

Abstract of the Tonnage and Amount received for carriage of Coal shipped at the Government Cranes and Staiths, Newcastle, during 1881 and 1882.

Companies.	188	t.	1881	32.	Increas	e, 1881.	Decreas	e, 1882:
Companies.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.
		£		£		£		£
Newcastle	142,537	6,261	154,564	6,428	12,027	- 167		
A. A. Company	8,555	368	2,405	105			6,150	263
Lambton	120,501	5,024	238,518	9,942	118,017	4,918		
New Lambton	43,926	1,497	72,077	2,624	28,151	1,127		
Ferndale	39,909	1,659	45,820	2,000	5,911	341		********
Co-operative	175,314	9,352	200,202	11,938	24,888	2,586		•••••
Wallsend Tunnels	337,751	14,348	407,823	17,663	70,072	3,315		
Wallsend Pit			335	8	335	8		
Purified Coke			2,893	121	2,893	121		
Minmi	137,947	6,892	115,602	5,781			22,345	1,111
Woodford	168	9	12,979	814	12,811	805		
Greta	19,777	1,650	44,843	4,118	25,066	2,468		
Goose	1,086	32	397	18			689	14
Rix Creek	638	333	118	57			520	276
Tighe's Hill	8	4			• • • • • • • • • • • • • • • • • • • •		8	. 4
Anvil Creek	424	39					424	39
Rathluba	5	1					5	ī
Tulip's Pit		12		••••			5 18	12
Waratah	692	29	9,930	418	. 9,238	389	,,,	
Sneddon's			5,994	222	5,994	222		*******
Brickfield	•••••	*******	12,560	1,048	12,560	1,048		`
Total	1,029,256	47,510	1,327,060	63,305	327,963	17,515	30,159	1,720
Local consumption	60,869	2,963	56,132	2,493			4,737	. 470

^{*} Output of Wallsend Co

No. 38.

Abstract of the Tonnage and amount received for the carriage of Coal and Shale on the Great Southern and Western Railways in 1881 and 1882.

	1881	3r. ·	i88	32.	Increase	e, 1882.	Decreas	е, 1882.
-	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.
Lithgow Valley—	No.	£	No.	£	No.	£	No.	£
Lithgow	25,505	9,481	27,819	10,062	2,314	581		
Esk Bank	18,337	6,972	31,259	13,192	12,922	6,220		
Bowenfels Company	4,325	1,583	9,576	3,444	5,251	1,861	•••	
Vale of Clwydd	29,065	10,748	32,025	11,436	2,960	688		
Wallerawang			5	1	5	1		•
Hartley Vale—							;	
Shale Company	12,436	4,079	23,120	7,761	10,684	3,682	·····	
Mittagong	1,117	482	210	97		,	907	385
Joadja Siding	14,589	4,748	23,398	7,715	8,809	. 2,967		
Austermere			4,468	2,099	4,468	2,099		·
Bundanoon	32	7		• • • • • • • • • • • • • • • • • • • •			32	7
Baker's Siding	54	11	825	. 117	771	106		
Morrice's Siding	64	10	•••••	·			64	10
Total	105,524	38,121	152,705	55,924	. 48,184	18,205	1,003	. 402

No. 39.

Abstract of the total quantity of Coal and Shale carried on Great Southern, Western, and Northern Railways during 1881 and 1882, and the amounts of Freight received therefrom.

	186	Вт.	1881	32.	Increas	e, 1882.	Decreas	se, 1882.
	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.
COAL.	No.	£	No.	£	No.	£	No.	£
Newcastle Lines	1,029,256	47,510	1,327,061	63,305	297,805	15,795	••••••	
Great Western Railway —								
Lithgow Valley Mines	77,232	28,784	100,679	38,134	23,447	9,350	*******	
Wallcrawang		*******	5	1	5	ı		·
Great Southern Railway—			i	•				
Mittagong	985	420	192	· . 92			. 793	- 328
Joadja	1,587	419	3,746	1,185	2,159	766	••••	•••••
Austermere			4,468	´ 2,099	4,468	2,099		••••••
Bundanoon	32	7			********	·	32	7
Baker's Siding	54	11	825	117	77 I	106		
Morrice's Siding	64	10					64	10
SHALE.						-		
Great Western Railway-								
Hartley Vale	12,436	4,079	23,120	. 7,761	10,684	3,682		
Great Southern Railway-		,						
Mittagong,	132	62	18	5			114	. 57
Jondja	13,002	4,329	19,652	6,530	6,650	2,201		······
Total	1,134,780	85,631	1,479,766	1 1.9,229	345,989	34,000	1,003	402

No. 40.*

RETURN of the number and percentage proportion of FIRST and SECOND CLASS PASSENGERS on the Great Southern, Western, and Richmond, and Northern Lines, and the amount received from that source during 1882.

			· · · · · · · · · · · · · · · · · · ·
•	First Class.	Second Class.	Total.
Number— South and West—	No.	No.	No.
Passengers	1,336,076	3,708,146	5,044,222
Season Tickets	1,359,436	1,005,476	2,364,912
Workmen's Tickets		972,360	972,360
Northern— Passengers	105,788	434,849	540,637
Season Tickets	37,220	. 52,100	89,320
All Lines	2,838,520	6,172,931	9,011,451
Amount received— South and West— Passengers	£ 181,098	£ 221,392	£ 402,490
Season Tickets	13,407	13,490	26,897
Workmen's Tickets		6,463	6,463
Northern— Passengers	28,018	50,698	78,716
Season Tickets	550	485	1,035
All Lines	223,073	292,528	515,601
Percentage number— South and West	No. 32 ⁻ 16	No. 67 [.] 84	No. 100'00
Northern	22'70	77.30	100,00
All Lines	31.20	68.20	100.00
Percentage amount received—	£	· £	£
South and West	4 ^{4.} 63	55.37	100.00
Northern	35.82	64.18	100,00
All Lines	43'26	. 56.74	100.00

^{*} Includes Camden traffic.

 ${
m No.~41.}$ Return of the Mileage of Suburban Passengers during the years 1881 and 1882.

Description.		1881.	1882.
No. of Passengers	No.	3,111,795	3,943,581
" Workmen's journeys	»· "	450,216 1,780,312*	972,360 2,250,536
Total Passenger journeys		5,342,323	, 7,166,477
No. of miles travelled	Miles.	34,743,519	34,987,807
Average mileage per passenger	"	6.20	4 [.] 88
Amount received for passengers	£	76,322 12 5	93,311 2 7
Average receipts per mile per passenger	d.,	o·53	0.64

						Down												Up.			•	
64			Numbe	r issued.		Total)		Amolint.				Numbe	r issued.		Total			Amount.,			Total
Ū	Stations.	Sin	gle.	Ret	urn.	number issued— Down.	Sir	ıgle.	Ret	turn.	Total.	Sin	gle.	Ret	urn.	number issued— Up.	Sin	gle.	Ret	urn.	Total.	number of Passengers— Down and
•	·	1	2	1	2		1	2	1	2	10001	1	2	1	2		1	2	1	2		Up.
	Sydney. Eveleigh M'Donald Town Newtown Stanmore. Petersham Summer Hill Ashfield Croydon Burwood Redmyre Homebush Rookwood Auburn Granville Parramatta	125,985 1,830 1,870 13,872 2,614 7,190 1,385 4,522 2,574 2,476 356 452 1,791	5,662 81,721 2,950 21,599 5,558 12,875 8,432 10,741 1,946 3,142 5,841	77,047 426 178 3,104 859 2,416 272 1,427 713 891 164 83 58 124 479	242,066 7,223 800 16,747 455 5,433 861 2,631 1,258 2,375 423 565 1,987 7,987 7,103	\$27,062 33,971 8,510 115,444 6,\$78 36,638 8,076 21,455 12,977 16,483 2,907 3,956 8,242 5,361 19,055	£ s. d. 3,007 11 9 33 0 0 38 5 9 265 13 0 64 5 7 160 11 3 28 14 4 100 12 5 36 7 8 57 18 57 18 57 18 57 18 57 18 57 18	£ s. d. 6,529 2 0 330 12 9 77 16 1 947 0 5 43 17 11 347 18 2 71 13 7 168 12 3 68 1 3 128 11 1 36 2 5 57 11 5 88 1 1 25 15 1 65 6 10	£ s. d. 4,966 16 6 14 13 3 7 3 7 140 13 10 42 2 7 106 15 6 10 6 8 66 10 1 20 19 10 38 15 7 11 1 3 13 7 1 17 8 2 10 4 5 19 2	£ s. d. 9,656 18, 6 167 9 6 20 2 1 478 8 9 1 161 18 7 22 3 4 4 6 5 67 12 14 9 0 39 14 7 9 17 5 0 3 1	£ s. d. 24,160 8 9 545 15 6 143 7 6 1,832 1 0 0 168 15 2 777 3 6 132 17 11 408 0 8 149 15 2 292 16 7 68 3 7 80 16 11 137 10 9 43 10 2 95 7 2	371 13,237 34,151 10,406 23,058 6,918 17,361 6,383 16,331 4,884 2,961 1,426 1,426 1,597 18,653	4,050 46,781 86,711 12,804 109,519 28,792 47,677 22,433 50,025 9,041 16,795 15,248 1,795 11,521 69,705	28 1,937 15,401 10,727 31,356 7,658 22,933 6,165 15,630 3,258 1,019 365 326 559 13,879	\$\$ 24,102 51,650 5,151 63,780 18,213 42,596 17,669 42,450 5,183 5,157 11,309 1,552 4,720 36,448	187,913 39,088 227,713 61,581 129,667 52,650 124,436 22,371 25,932 28,348 4,028 18,397	£ s. d	£ s. d	305 15 10 1,102 4 7 377 16 5 1,059 4 1 234 10 3 78 9 8 31 17 3 39 16 9 58 10 5	£ s. d	£ s. d	827,062 38,508 94,567 303,357 45,966 264,351 69,657 151,122 65,627 140,919 25,278 29,888 36,590 9,389 37,452 138,685
	Total Return Tickets—Return	167,457	586,595	88,241	284,722	1127015	3,839 14 5	8,986 2 4	5,436 14 1	10768 19 6	29,031 10 4	158,092	532,897	130,341	330,073	1,151,403	3,873 5 4	8,579 16 0	6,736 9 4	10565 2 9	29,754 13 5	2,278,418
	Journey		• • • • •	130,341	330,073	460,414								88,241	284,722	372,963	• • • • • • • • • • • • • • • • • • • •					833,377
	Total			218,582	614,795	1587429	•••••					···· ,	• • • • •	218,582	614,795	1,524,366						3,111,795

										1882.											
					Down	1.											Up.				
,		Number	issued.		Total			Amount.				Number	issued.	1	Total			Amount.			Total
Stations.	Sin	gle.	Ŗet	urn.	number issued— Down.	Sing	gle.	Ret	urn.	Total.	Sin	gle.	Reti	ırn.	number issued— Up.	Sin	gle.	Ret	um.	Total.	number of Passengers- Down and
	1	2	-1	2		1	2 .	1	2	20	. 1	2	1	2		1	2	1	2		Up.
Sydney. Eveleigh M'Donald Town Newtown. Stanmore Petersham Summer Hill Ashfield Croydon Burwood Redmyre Homebush Rookwood Auburn Granville Parramatta.	3,012 2,457 19,574 3,328 10,118 2,573 5,720 3,693	418,330 26,561 6,613 87,652 3,369 27,417 10,103 14,381 10,566 15,967 3,005 4,012 7,936 4,439 20,579	115,196 786 409 5,089 1,423 3,384 878 1,900 1,082 1,086 335 88 87 119	273,690 6,898 1,528 18,945 655 6,848 2,097 3,055 1,498 2,556 642 588 2,838 947 1,685	972,792 37,257 11,007 131,260 15,755 47,767 15,651 25,056 16,839 23,333 4,662 4,984 11,372 5,968 25,058	.£ s. d. 3,482 13 1 46 17 2 49 10 6 333 0 7 73 4 8 208 19 8 50 3 2 111 8 5 50 17 3 74 71 19 0 11 7 18 9 5 10 1 1 18 10 6	£ s. d. 6,695 11 9 285 19 11 92 3 7 982 1 6 42 19 10 5 127 18 3 182 15 0 87 13 3 164 18 8 11 64 19 4 108 18 3 29 18 5 51 4 11	£ s. d. 6,469 4 7 22 5 11 17 3 2 197 18 1 62 3 9 147 11 4 31 14 6 6 78 18 4 30 15 11 43 4 0 13 14 6 2 10 2 2 4 7 7 2 0	£ s. d. 10,393 19 0 144 0 7 44 16 0 559 13 2 17 3 7 205 0 10 881 5 3 31 18 0 68 19 4 15 3 1 13 14 2 52 4 0 11 14 5 14 0 10	£ s. d. 27,041 8 5 499 3 7 203 13 3 2,072 13 4 195 11 10 074 2 3 268 1 9 454 7 0 201 4 5 531 9 6 92 13 3 90 6 9 174 3 2 49 7 6 125 8 3	273 16,717 55,492 13,243 31,199 10,627 19,827 8,666 19,928 5,946 4,491 1,612 374 2,319 21,633	4,483 56,836 103,642 122,266 32,239 45,290 22,610 54,736 9,890 19,142 18,861 19,305 87,259	7,476 31,636 16,975 46,978 14,582 26,458 8,358 21,702 4,720 1,640 685 886 846 18,484	32 29,436 76,494 91,372 29,657 50,129 22,862 59,457 5,955 9,434 13,456 1,992 9,836 49,014	4,809 110,465 270,389 53,019 290,915 87,105 141,704 62,496 155,823 26,511 34,707 34,614 5,333 32,306 176,390	£ s. d. 2 4 6 208 10 2 681 0 5 174 19 0 465 10 9 175 9 9 415 9 8 213 19 5 505 19 3 148 3 11 118 10 0 61 8 4 17 2 1 141 0 11 1,233 18 7	£ s. d	£ s. d. 0 5 1 166 4 3 697 4 3 430 6 7 1,229 9 5 524 14 5 1,232 14 7 467 19 8 1,295 15 4 317 3 1 102 6 4 60 1 1 39 6 0 79 15 5,170 13 6	£ s. d	£ s. d	972,792 42,066 121,472 401,649 61,794 338,682 102,756 166,760 79,335 179,156 31,173 39,691 45,986 11,301 57,364 176,390
Total Return Tickets—Return	վ ՜	660,930		'		•	9,409 11 7	7,129 11 2	11,711 18 1	32,793 14 3	212,347	615,927	200,027	458,285		4,563 6 9	9,074 16 11	8,813 19 0	13,342 11 1	35,794 13 9	2,828,367
Journey	 				658,312 2000093							• • • •	<u> </u>	324,470 782,755		••••••	•••••		•••••	•••••	3,943,581

No. 42-continued.

RETURN of the number of Season Tickets issued, and Amounts received for same, by each Suburban Station during the year 1882.

Stations.	Mon	ithly.	Quar	terly.	Half-y	early.	Yes	arly	То	tal.	Amo	ounts.
	r.	2	1.	2.	1.	2.	ì.	2.	ī.	2.	1st Class.	2nd Clas .
188Î.						-					£ s. d.	£ s. d.
Sydne y			: 3	•••	2	·	2	{	45		} 155 7 10	••••••
Newtown	357	1,002	206	492	58	62	9	3	1,431 630	2,886 1,559	555 13 5	696 16 2
Petersham	605	1,305	620	610	215	97	30	19 }	4,115 1,470	3,945 2,031	1,68313 5	1,205 3 3
Summer Hill	161	370	62	188	32	38	6	1	611 261	1,174 597	312 18 6	491 7 5
Ashfield	354	781	301	302	157	83	36	14	2,631 848	2,353 1,180	 } 1,432 9 3	1,020 14 0
Croydon	213	140	136	115	48	20	17	2 }	1,113 414	629 277	699 6 I	289 9 7
Burwood	2 4 5	607	259	- 274	139	54	31 ,	5 }	2,228 674	1,813	1,398 9 10	1,010 5 8
Redmyre	. I22	54	99	46	46	9	5		755 272	246 100	$\begin{cases} 5^25 & 4 & 4 \end{cases}$	138 2 6
Ĥomebush	16	55	37	8	18	4	7	7 }	319 78	187 74	250 5 8	•
Rookwood	3	67	10	39	2	7		4	45	274	35 7 9	168 19 3
Auburn	14	2	28	3	4			. _; ,	12Ž	11	66 8 7	2 10 0
Granville	3	37	8	28	5	3		}	57 16	139 68	140 14 7	129 1 1
Parramatta	130	528	97	185	72	26	7	1 {	9 37 306	1,251 740	920 3 0	1,052 18 6
	2,223	4,948	1,866	2,290	798	. 403	150	56 {	14,409* 5,037	14,908 7,697	8,176 2 3	6,308 8 11
1882.												
Sydney	6		12		2		4	{	102		} 330 10 4	
Newtown	565	1,039	313	322	109	51	8	8	2,254 995	2,407 1,420	838 12 5	569 0 3
Stanmore	101	75	26	14	31	6		{	365 158	153 95	} 173 10 2	45 0 7
Petersham	862	1,441	481	564	353	160	80	23 {	5,383 1,776	4,369 2,188	2,198 15 4	1,299 0 3
, Summer Hill	180	395	133	250	76	54	14	2 {	1,203	1,493	575 15 1	616 16 9
Ashfield	470	499	273	285	258	100	86	21 {	3,869 1,087	2,206	2,040 18 6	912 2 9
Croydon	279	181	142	137	54	36	35	5 {	1,449 510	868	898 r 7	413 10 10
Burwood	360	439	283	243	184	75	65	2 {	3,093 892	359 1,642 759	 } 1,989 8 6	. 900 II 3
Redmyre	133	62	137	57	91	12	38	{	1,546	759 305 131	1,003 15 5	152 14 5
Ĥomebush	21	25	28	. 11	39	8	20	1	. 579	118 118 45	} 407 19 6	65 7 3
Rookwood	Ìġ	105	28	84	7	6	2	_. 5{	163 5°	453 200		213 19 1
Aûburn	14		31	3	4		1	r {	143	21 4	83 13 2	965
Granville	12	27	17	38	5	2		1 {	93 34	165 68	£ 212 16 5	118 8 7
Parrámatta	118	441	132	140	69	36	22	1 {	1,192 341	1,089 618	1,183 14 0	934 2 4
,	3,134	4,729	2,036	2,148	1,282	546	375	70 {	21,434* 6,827	15,289 7,493	} 12,009 18 0	6,250 0 9

*All tickets brought into months.

No. 42—continued.

RETURN of the number of Workmen's Weekly Tickets issued, and Amounts received for same, by each Suburban Station during the year 1882.

	Weekly Tickets issued. 2nd Class.	Ameunts.
		£ s. d.
Sydney	26,176	2,340 19 6
Eveleigh	5,957	565 3 10
Macdonald Town:	10,291	446 13 11
Newtown	15,443	945 5 11
Stanmore	. 1,140	72 8 3
Petersham	8,314	643 9 3
Summer Hill	2,625	218 2 4
Ashfield	2,215	202 16 3
Croydon	1,427	129, 5 5
Burwood	2,617	251 4 10
Redmyre	258	26 12 0
Homebush	290	31 O I
Rookwood	1,059	123 10 2
Auburn	89	12 8 6
Granville	897	136 17 5
Parramatta	2,232	316 18 2
	81,030	6,462 15 10

No. 43.

Detailed Statement of Mileage of Engines, for the 12 months ending 31st December, 1882.

Train Miles.	Southern.	Suburban.	Western.	Richmond.	Northern.	Total.
Passenger	684,272	339,136	414,150	22,676	294,514	1,754,748
" Special	32,501	6,017	18,539	1,241	11,292	69,590
Goods	893,618	. 10,402	1,218,230	29,399	458,377	2,610,026
,, Special	117,408	6,217.	107,725	212	41,101	272,663
Funeral	•••••	12,883			2,002	14,885
Coal	•••••	••••••		***************************************	129,215	129,215
Total Train Mileage	1,727,799	374,655	1,758,644	53,528	936,501	4,851,127
OTHER MILEAGE.						
Shunting	366,014	48,848	201,520	14,799	368,595	999,776
Coal	17,732	15		• • • • • • • • • • • • • • • • • • • •	•••••	17,747
Ballasting	63,888	311	50,281	6,320	49,804	170,604
Empty	8,063	2,266	3,514	· 233	21,642	. 35,718
Water	2,773		281	***************************************	888	3,942
Total other Mileage	458,470	51,440	255,596	21,352	440,929	1,227,787
			<u> </u>			
· Grand Total	2,186,269	426,095	2,014,240	74,880	1,377,430	6,078,914
Increase for 1882	359,094	40,053	470,217	5,808	317,049	1,192,221

No. 44.

Statement of Mileage, Passenger and Goods Trains, for the years 1881 and 1882.

Lines and Trains—Train miles.	1881.	1882.
Great Southern, Western, and Richmond Railways—Passenger Great Northern Railway—Passenger Great Southern, Western, and Richmond Railways—Goods Great Northern Railway—Goods	1,340,047 263,848 1,845,390 474,644	1,531,4 ¹ 5 307,808 - 2,383,211 628,693
Total Train Miles	3,923,929	4,851,127
OTHER MILEAGE.	•	
Great Southern, Western, and Richmond Railways—Ballasting, Shunting, &c	640,875 321,889	786,858 440,929
Total other Mileage	962,764	1,227,787
TOTAL MILES	4,886,693	6,078,914

No. 45.

Annual and Daily Mileage of Trains, including Sundays, 1881 and 1882.

	188	81.	188	2.
·	Annual.	Daily.	Annual.	Daily.
Train Miles.		-		
Suburban Southern Western Richmond Northern	345,496 1,435,108 1,354,049 50,784 738,492	947 3,931 3,709 139 2,024	374,655 1,727,799 1,758,644 53,528 936,501	1,026 4,734 4,818 147 2,566
Total Train Miles	3,923,929	10,750	4,851,127	13,291
CLASS OF ENGINE.				
Passenger	1,603,895 2,320,034	4,394 6,356	1,839,223 3,011,904	5,039 8,252
Total	3,923,929	10,750	4,851,127	13,291
OTHER MILEAGE.				
Suburban Southern Western Richmond Northern	40,546 392,067 189,974 18,288 321,889	111 1,075 520 50 882	51,440 458,470 255,596 21,352 440,929	1,257 700 58 1,208
Total other Mileage	962,764	2,638	1,227,787	3,364
CLASS OF WORK.				
Ballasting Shunting Empty Water Fuel	- 131,437 789,318 26,112 15,897	360 2,163 71 44	170,604 999,776 35,718 3,942 17,747	467 2,739 98 11 49
. Total	962,764	2,638	1,227,787	3,364
Total with shunting, &c	4,886,693	13,388	6,078,914	16,655
Average daily work per engine		46.14		49.59
Do. including shunting	,	57.46		62.14
Number of engines	23	3	268	8

No. 46.

Total Mileage of each Engine for the year ending 31st December, 1882.

o.	(Class of Engine.	Total Mileage of each Engine.	No.		Class of Engine.	Total Mileage of ea Engine.
,	·	GREAT SOUTE	IERN, WESTE	RN, AND	RICHMO	ND LINES.	
1	Goods	· ·	9,341	1 83	Passenger		28,508
2	,,		25,685	84	,,		23,595
3	,,		34,478	85	,,		36,701
4	_ "		25,910	86	,,		25,227
5	Passenger		3,523	87	,,		25,450
	,,	•••	1,643	88	, ,,	••••••	17,061
7 8	,,	••••••	Nil.	89	,,		33,600
	,,,	***************************************	Nil. Nil.	90	,,		32,472 28,241
9	"	***************************************	_	91	,, .		12,306
IO II	"	***************************************	6,799 Nil.	92	Goods		24,873
12	,,		144	93 94	1		30,316
13	,,,		16,847	95	"		22,004
14	"		16,047	96	,,		25,121
15	"		15,439	97] ",		18,235
1Ğ,	,,	***************************************	6,386	98	,,		30,329
17	Goods	*************************	2,729	99	,,		25,778
18	,,		19,752	100	,,		25,359
19	,,		16,575	101	, "	***************************************	26,227
20	,,	•••••	16,771	102	".		25,192
21	,,	***************************************	9,580	103	"	•••••	1 2'''
22	_ ,,		10,116	104	_ ,,		28,740
23	Passenger		16,582	105	Passenger	••••••••	23,654
24	"	•••••	17,926	106	Goods		25,378
25 26	,,	***************************************	20,368	107	"		39,513 25,400
27	"		23,557 13,207	100	"	***************************************	32,168
28	"		17,167	110	"	.,	25,768
29	"		1,228	111	,,		22,339
30	,,		28,941	112	,,		26,853
31	,,		16,589	113	,,		24,713
32	,,	***************************************	28,874	114	,,		29,645
33	,,	•••••	16,712	115	,,		26,788
34	,,		21,660	116	"	•••••	18,819
35	,,		16,319	117	D.,"	***************************************	26,504
36	,,,	***************************************	15,417	118	Passenger	***************************************	26,931 34,820
37	"	***************************************	14,019	119	"	••••••	17,187
38	,,,	***************************************	33,222 22,501	120 121	"	***************************************	27,315
39 40	Goods		19,283	122	,,		30,727
41	,,		15,950	123	2)	***************************************	30,625
42	,,,	**************************	21,443	124	"		18,058
43	,,	•••••	20,825	125	,, ¹		21,916
44	,,		24,053	126	,,	***************************************	23,546
45	,,	•••••	23,056	127	,,	••••••••••••	19,805
46	"	***************************************	22,006	128	"	***************************************	17,354
47	,,		18,003	129	,,	***************************************	20,848 6,532
48	"	***************************************	20,547	130	Goods	***************************************	23,115
49 50	"		23,006	132	,,		17,633
51	"	***************************************	17,492	133	",		30,057
52	"		27,111	134	,,,	***************************************	30,003
53	,,,		17,113	135	,,	***************************************	40,038
54	,,	***************************************	20,441	136	,,	***************************************	23,182
55	,,		21,528	137	,, .		34,047
56	"		22,340	138	"	***************************************	21,542
57	,,	***************************************	18,032	139	"	***************************************	36,792
58	"		20,108	140	,,	***************************************	14,964
59	Passangar	(Goods milesca)	23,597	141	"	* *************************************	29,454
60	1	(Goods mileage)	10,231	142	Passenger	***************************************	27,661
62	,,,	•	18,243	143	1	***************************************	31,938
63	-,,	**	14,537	145	"	***************************************	31,074
64] ",); ·······	07.760	146	"	***************************************	32,704
65	",	,,	14,383	147] ",	***************************************	21,566
66	",		5,238	148	,,	***************************************	26,125
67	,, .		3,736	149	,,	***************************************	28,451
68	,,	•••••	. 23,468	150	,,	***************************************	35,655
69	"	***************************************	8,870	151	"	***************************************	31,014
70	"		3,530	152	,,	***************************************	25,838
71	"		11,677	153	"	***************************************	28,190
72	"	*****************************	6,843	154	"	***************************************	27,744
73	"	***************************************	23,536	155	"		12,575
74 75	"	******************************	22,104	156	"		12,575
75 76	,,,	***************************************	21,408	157	,,	***************************************	25,565
77	,,	***************************************	19,290	159	:,	***************************************	23,059
78	,,	***************************************	14,834	160	"	***************************************	24,324
79	,,	******************************	1	161	,,,	***************************************	23,742
80	",	**********************	0.4 - 0.5	162	,,	***************************************	21,748
81	,,	***************************************	23,974	163	,,,		23,300
82	,,	***************************************	. 22,676	164	Goods		. 38,078

No. 46—continued.

GREAT SOUTHERN, WESTERN, AND RICHMOND LINES—continued.

	Class of Engine.	· Total Mileage of cach Engine.	No.	Class of Engine.	Tota Mileage o Engi
5	Passenger	22,221	275	Goods	28,0
5	2 wastinger	33,221 35,834	215 216	Goods	30,0
,	33	30,933	217		
3	•	32,070	218	**	29,3
5	1	- '	I₹); ····································	28,3
ó	1	25,295	219	1	25,0
ī		37,954			22,6
2	1	29,632	221		
3	33 .	34,546	222	,	
3 4	1 "	20,877	223] } .	1
))	35,448	224	1	ł
5	, ,,	26,302	225	,	ì
5))	22,460	226	!! -	
7	,,	30,317	227	<u> </u>	'
8	,,	24,245	228		<u> </u>
9	,,	8,950	229	11	
	»ii	10,254	230]] '	┨ .
Ţ	· "·	1,072	231	11 •	
2	Goods	431	232	11 •	
3	Goods	28,601	233	II .	
1	23	25,396	234		·
5		32,232	235	I onama nin manazi	
5	22	29,688	. 236	Ordered, but not yet delivered.	}
7	39	28,703	237	11 .	
ś	22	25,778	238		
9				11	
, ř		30,275	239	11	
	1 417 11 1	34,505	240	•	
I	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	20,231	. 241		
2	37	14,924	242		
3	23	11,789	243		
4	,	10,464	244	11	
5	1)		245		
5		•	246	11	
7	11	· 1	247		
3]			248		
•	المستحدة والمستخدمة والمستحدث	i	249		
5 1	Ordered, but not yet delivered.	i	250	j	
ř			251	Passenger	2,6
2	_ 00000 0000	`	252		1,7
3			253		5
1	14		254	, ,	ာ
5	Goods	20.00		Ordered, but not yet delivered.	
5		33,385	255	Ordered, but not yet denvered.	
	***************************************	30,277	256	·	
3.	*** *** *** ***************************	36,297		Contractors	
j · 1	, , , , , , , , , , , , , , , , , , , ,	37,231		Contractors	1,2
5	** ************************************	31,646	1 '		
i	* *************************************	31,137	,		
ż	***************************************	29,252		(n)-4-11	
	3) 0 0000000000000000000000000000000000	32,907		Total mileage	4,701,4
3.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	32,515	,	, ,	•
1))	,. 26,244			
			J	1	•
	.; GRE	AT NORTHER	N RÀIL	WAY	
٠;		. * *			
1	Passenger	, 16,147	30	Passenger	32,6
3	,	10,163	31	Goods,	27,1
, ,	^ ,,	24,735	33	39 10	32,9
? 1	, ,,	30,562	33	39	. 27,7
1	, ,,	15,654	34	39	28,0
1	ii	18,507	35	,,,	28,5
5	• • • • • • • • • • • • • • • • • • • •		1 22	, ,,,, ,,, ,, ,, ,, ,, ,, ,,	27,6
5	33 CCC COMMUNICATION CONTRACTOR C	18,840	30		39,0
5	2 33 CFCC (CENTRES) (IN \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	18,840	36 37		
55.73	32 crc (cremita, in the process of t	18,840 14,075	37	Passenger	
55.78.0	.Goods	18,840 14,075 13,833	37 38	Passenger	38,5
4 55 78 90	Goods Passenger	18,840 14,075 13,833 21,552	37 38 39	Passenger "	38,5 39,4
1 78 9 P	Goods Passenger	18,840 14,075 13,833 21,552 27,216	37 38 39 40	Passenger ,,, Goods	38,5 39,4 32,3
1 55 7 3 9 0 H 2	Goods Passenger	18,840 14,075 13,833 21,552 27,216 23,294	37 38 39 40 41	Passenger ,, Goods	38,5 39,4 3 ² ,3
4 56 7 3 9 9 H 2 3	Goods Passenger	18,840 14,075 13,833 21,552 27,216 23,294 27,861	37 38 39 40 41 42	Passenger ,,, Goods	38,5 39,4 3 ² ,3 3 ² ,7 29,8
1 56.78.99 H 2.34	Goods Passenger	18,840 14,075 13,833 21,552 27,216 23,294 27,861 19,069	37 38 39 40 41 42 43	Passenger Goods """	38,5 39,4 3 ² ,3 3 ² ,7 29,8 28,5
4 56 78 90 4 2 3 4 5	Goods Passenger	18,840 14,075 13,833 27,216 23,294 27,861 19,069 15,664	37 38 39 40 41 42 43	Passenger "Goods "" "" "" "" "" "" "" "" "" "	38,5 39,4 32,3 32,7 29,8 28,5 34,1
# 56: 78: 9 6 H R: 67# 56:	Goods Passenger	18,840 14,075 13,833 21,552 27,216 23,294 27,861 19,069 15,664 26,147	37 38 39 40 41 42 43 44 45	Passenger "Goods "" "" "" "" "" "" "" "" ""	38,5 39,4 32,3 32,7 29,8 28,5 34,1 26,2
# 555.73.90 H 2.33.4 555.7	Goods Passenger	18,840 14,075 13,833 21,552 27,216 23,294 27,861 19,069 15,664 26,147 8,729	37 38 39 40 41 42 43 44 45 46	Passenger "Goods "" "" "" "" "" "" "" "" "" "	38,5 39,4 32,3 32,7 29,8 28,5 34,1 26,2
# 555 78 9 0 H 2: 874 555 78	Goods Passenger "" Goods Goods	18,840 14,075 13,833 21,552 27,216 23,294 27,861 19,069 15,664 26,147 8,729 17,062	37 38 39 40 41 42 43 44 45 46 47	Passenger "Goods "" "" "" "" "" "" "" "" ""	38,5 39,4 32,3 32,7 29,8 28,5 34,1 26,2
4 55: 78: 96 H 2: 84 55: 78 9	Goods Passenger	18,840 14,075 13,833 27,216 23,294 27,861 19,069 15,664 26,147 8,729 17,062 30,578	37 38 39 40 41 42 43 44 45 46	Passenger "Goods "" "" "" "" "" "" "" "" "" "	38,5 39,4 32,3 32,7 29,8 28,5 34,1 26,2
4 56: 78: 90 H 2: 874 56: 78 9 9;	Goods Passenger "" "" "" "" "" "" "" "" "" "" "" "" "	18,840 14,075 13,833 21,552 27,216 23,294 27,861 19,069 15,664 26,147 8,729 17,062	37 38 39 40 41 42 43 44 45 46 47	Passenger "Goods "" "" "" Passenger	38,5 39,4 32,3 32,7 29,8 28,5 34,1 26,2 30,1
4 55: 78: 96 H 2: 84 55: 78 9	Goods Passenger "" "" Goods Passenger "" "" Goods	18,840 14,075 13,833 27,216 23,294 27,861 19,069 15,664 26,147 8,729 17,062 30,578	37 38 39 40 41 42 43 44 45 46 47 48 49	Passenger Goods "" Passenger "" Passenger	38,5 39,4 32,3 32,7 29,8 28,5 34,1 26,2 30,1 34,4 17,1
4 56: 78: 90 H 2: 874 56: 78 9 9;	Goods Passenger "" "" "" Goods	18,840 14,075 13,833 21,552 27,216 23,294 19,069 19,664 26,147 8,729 17,062 19,289 19,289 25,899	37 38 39 40 41 42 43 44 45 46 47 48 49 50	Passenger "Goods "" "" "" Passenger	38,5 39,4 32,3 32,7 29,8 28,5 34,1 26,2 30,1 34,4 17,1 22,4 30,3
4 50: 70: 00 H 2: 00 4 50: 70: 00 4 2	Goods Passenger	18,840 14,075 13,833 21,552 27,216 23,294 27,861 19,069 15,664 26,147 8,729 17,062 30,578 19,289 25,899 31,431	37 38 39 40 41 42 43 44 45 46 47 48 49 50	Passenger "Goods "" "" Passenger "" Passenger	38,5 39,4 32,3 29,8 28,5 34,1 26,2 30,1 17,1 29,3 17,7
4 555 733 9 5 H 2: 55 4 55 7 78 9 6: 4 2 3	Goods Passenger "" "" "" Goods "" "" "" "" "" "" "" "" "" "" "" "" "	18,840 14,075 13,833 21,552 27,216 23,294 27,861 19,069 15,664 26,147 8,729 17,062 30,578 19,289 25,899 31,431	37 38 39 40 41 42 43 44 45 46 47 48 49 50	Passenger "Goods "" Passenger "" Passenger "" Goods	38,5 39,4 32,3 29,8 28,5 34,1 26,2 30,1 22,4 30,3 17,7 18,5
4 555 789 90 H 2 3 3 4 5 5 7 8 9 9 H 2 3 4	Goods Passenger "" "" "" "" "" "" "" "" "" "" "" "" "	18,840 14,075 13,833 21,552 27,216 23,294 19,069 15,664 26,147 8,729 17,062 30,578 19,289 25,899 31,431 21,952 21,853	37 38 39 40 41 42 43 44 45 47 48 49 55 55 53	Passenger "Goods "" "" Passenger "" Goods "" Passenger "" Goods	38,5 39,4 32,3 32,7 28,5 34,1 26,2 30,1 17,1 22,4 30,3 17,5 18,5
	Goods Passenger "" Goods "" Goods "" Goods	18,840 14,075 13,833 21,552 27,216 23,294 19,069 15,664 26,147 8,729 17,062 30,578 19,289 25,899 31,431 21,952 21,853 12,847	37 38 39 40 41 42 43 44 45 46 47 48 49 55 55 55 55	Passenger "Goods "" "" Passenger "" Goods "" Passenger "" Goods	38,5 39,4 32,3 29,8 28,5 34,1 26,2 30,1 17,1 22,4 30,3 17,7 18,5 22,7
	Goods Passenger "" "" "" "" "" "" "" "" "" "" "" "" "	18,840 14,075 13,833 21,552 27,216 23,294 19,069 15,664 15,664 26,147 8,729 17,062 30,578 19,289 31,431 21,853 21,853 12,847 22,219	37 38 39 40 41 42 43 44 45 47 48 49 55 55 53	Passenger "Goods "" "" Passenger "" Goods "" "" Goods	38,5 39,4 32,3 32,7 29,8 28,5 34,1 26,2 30,1 22,4 30,3 17,7 18,5 18,4 22,7 21,8
	Goods Passenger Goods Goods Goods Goods Goods Goods Goods Goods Goods Goods Goods	18,840 14,075 13,833 21,552 27,216 23,294 19,069 15,664 19,069 17,062 30,578 19,289 25,899 31,431 21,952 21,853 12,847 22,219 28,427	37 38 39 40 41 42 43 44 45 46 47 48 49 55 55 55 55	Passenger "Goods "" "" Passenger "" Goods "" Passenger "" Goods	38,5 39,4 32,3 29,8 28,5 34,1 26,2 30,1 34,4 17,1 22,4 317,7 18,5 12,7 21,8
	Goods Passenger "" "" "" "" "" "" "" "" "" "" "" "" "	18,840 14,075 13,833 21,552 27,216 23,294 19,069 15,664 15,664 26,147 8,729 17,062 30,578 19,289 31,431 21,853 21,853 12,847 22,219	37 38 39 40 41 42 43 44 45 46 47 48 49 55 55 55 55	Passenger "Goods "" "" Passenger "" Goods "" "" Goods	38,5 39,4 32,3 22,8 28,5 34,1 26,2 30,1 22,4 30,7 18,5 18,4 22,7 21,8

No. 47.

Tabular Synopsis of the Total Earnings under the different Heads of Traffic, per Mile open and Train Mile for the Year 1882.

Wileson	Train :	Miles.		un, including ng, &c.
Mileage	Passenger.	Goods.	Passenger.	Goods.
South and West	1,531,415 307,808	2,383,211 628,693	1,741,808 430,673	2,959,676 946,757
All Lines	1,839,223	3,011,904	2,172,481	3,906,433
Heads of Traffic.	Miles open for Traffic—average.	Earnings.	Per Mile open.	Per Train mile
Coaching.	N T			,
Passengers, 1st and 2nd Class— South and West	No. 839	£ 407,830	£ 486.00	d. 63 [,] 9î
North	280½	78,716	280.63	61.37
All Lines	1,119½	486,546	434.61	63.49
Season Ticket Holders— South and West North	839 280 1	26,884 - 1,035	32.04 3.69	4,51 0.81
All Lines	1,1191	27,919	24'94	3.64
Horses, Carriages, Dogs, Parcels, &c.— South and West North	839 280 1	37,935	45*21	5'95
All Lines		12,477	44.48	9°73 6°58
Mails—		50,412	45.03	
South and West	839 280 1	9,754 3,255	11.60	1.23 2.24
All Lines	1,1191	13,009	1 Í · 62	1.40
Miscellaneous— South and West	839	7,198	8.58	1,13
North	280½	2,741	9.77	2,14
Total Coaching—	1,119\frac{1}{3}	9,939		1,30
South and West	839 280½	489,601 98,224	5 ⁸ 3.55 350.14	76·59 76·59
All Lines	1,119½	587,825	525.08	76.71
Goods. Live Stock—				
South and West North	839 280 1	116,652 23,418	139'04 83'49	, 11.75 8.94
All Lines	1,119½	140,070	152.15	11.19
Minerals— South and West North	839 280 1	93;188 · 71,313	111.07 254.24	9.38
All Lines	1,119½	164,501	146.04	13.11
Wool— South and West	839	67,786	80.79	6.83
North All Lines	280½	30,712	109.49	11.45
General Merchandise— South and West	839	. 98,498	87.98	7 ^{.8} 5
North	280½	550,255 149,125	655.85	56.93
All Lines Miscellaneous—		699,380	.624'73	55.73
South and West	839 280½	3,845 4,744	4.28 16.31	0.39
All Lines	1,119½	8,589	7.67	0.68
South and West	839 280½	831,726 279,312	991°33 995'77	83.76 106.62
All Lines	1,119½	1,111,038	992'44	88.53
South and West	839 280½	1,321,327	1,574.88 1,345 . 94	81.01 96.75
All Lines	1,1191	1,698,863	1,517'52	84.05

No. 48.

TABULAR ANALYSIS showing Working Expenses, Gross Earnings, and Net Earnings, per Mile open and per Train Mile.

Mileage.	Miles open— Average.	Train miles.	Miles run, including shunting.
9			
South and West	839 280½	3,914,626 936,501	4,701,484 1,377,430
Total	1,119½ .	4,851,127	6,078,914
Heads of Expenditure.	Amount.	Per mile open.	Per train mile.
			<u> </u>
Locomotive Power and Repairing Engines— South and West North	£ 255,501 58,985	£ 304.53 210.28	d. 15 [.] 66
. Total	314,486	280.03	15.26
		 -	-
Carriage and Waggon Repairs— South and West North	35,309	42°09 39°97	2°17 2°87
Total	46,521	41.22	2.30
Maintenance and Renewal of Way— South and West North	215,265 46,724	256 [.] 57 166 [.] 57	13.20
Total	261,989	234.02	12.96
Traffic Charges, Coaching, and Merchandise— South and West North	206,785 71,340	246 [,] 47 254 [,] 33	12.68
Total	278,125	248.44	13.46
Compensation, Personal Injury, &c.— South and West North	3,162 80	3'77 ['] 0'29	0.10
Total	3,242	2.30	0,16
Compensation, Damage to and Loss of Goods— South and West	868 181	0.65	0.02
Miscellancous Working Expenses and General Establishment— South and West North	20,743 8,48o	24'72	1.54
Total	29,223	30.53	- ^{2·17}
Gross Expenditure— South and West	737,633	879'18	45.55
North	197,002	702.32	50.49
Total	934,635	834.87	· 46·24
Gross Earnings— South and West North	. 1,321,327 377,536	1,574 [.] 88 1,345 [.] 94	81.01 96.75
Total	1,698,863	1,517.52	84.02
Net Earnings— South and West North	583,694 180,534	695 [.] 70 643 [.] 62	35*78 46·26
Total	764,228	682:65	37.81

No. 49α.

RETURN of the MILEAGE and WEIGHT of PASSENGERS and Tons of Goods carried during 1882, and the AVERAGE RECEIPTS per mile.

Description	1 .	Southern Westown		<u> </u>
Description.		Southern, Western, and Richmond.	Northern.	Total.
COACHING TRAFFIC.				
Number of 1st and 2nd class passengers	No.	5,017,940	540,637	5,558,577
" season ticket holders' journeys	,,,	2,364,056	89,320	2,453,376
" workmen's ticket "	"	972,360		972,360
,			·	
Total passenger ,,		8,354,356	629,957	8,984,313
		 -		
Total number of miles travelled	Miles.	96,328,995	15,695,247	
Average mileage per passenger	,,	11,23	24;91	112,024,242
Gross amount received from passengers		434,714	79,751	514,465
Average receipts per mile per passenger	d.	1.08	1,51	214,402
•				
Tonnage of passengers carried				
1	Tons.	556,957	41,997	598,954
,, mails and parcels	**	4,175	1,451	5,626
, and parcois		5,309	2,300	7,609
		566,441	4	
		500,441	45,748	612,189
m., 1 11				
Total mileage of tons	Miles.	7,385,480	1,345,747	8,731,227
Average mileage per ton	"	13.04	29.42	14.56
cellaneous receipts				
Average receipts per ton per mile	£	489,60 <u>1</u>	98,224	587,825
2.03 roosipse per son per mne	đ.	15.91	17.22	16.19
Goods Traffic.		ŀ		
Total tonnage of goods	Tons.	1,029,097	1,528,164	2,557,261
" live stock	,,	, 48,323	13,843	62,166
·		,		
		1,077,420	1,542,007	2,619,427
			`	•
Total mileage of tons of goods and live stock	Miles.	98,400,226	26,624,471	125,024,697
Average ,, ,,	,,	91,33	17.27	47.73
Gross amount received for above traffic and mis-			,	
cellaneous receipts	- £	831,726	279,312	1,111,038
Average receipts per ton per mile	d.	2.03	2.25	5,13
64X	<u> </u>	<u> </u>		

No. 49b.

CAMDEN TRAMWAY.

RETURN of the MILEAGE and WEIGHT of PASSENGERS and Tons of Goods carried during 1882, and the Average Receipts per mile.

Description.		Camden Tramway.
COACHING TRAFFIC.	}	
Tumber of 1st and 2nd class passengers	No.	26,282
" season ticket holders' journeys	,,	856
Total passengers		27,138
lotal number of miles travelled	Miles.	162,863
verage mileage per passenger	,,	6.00
Fross amount received from passengers	£	1,136
Verage receipts per mile per ,,	d.	1.67
Connage of passengers carried	Tons.	1,809
,, horses, carriages, and dogs	,,	4
" mäils and parcels	"	64
		1,877
,		
	Milés.	f 1,313
Total mileage of tons		6.03
Average mileage per ton	" £	1,288
Average receipts per ton per mile	d.	27 ⁻ 32
Average receipts per ton per mine		-, 3-
		•
GOODS TRAFFIC.		
Total tonnage of goods	' Tons.	5,621
,, live stock	. 33 ·	. 12
		5,633
Total mileage of tons of goods and live stock	Miles.	35,818
Average ,, ,,	*,,	6.36
Gross amount received for above traffic and miscellaneous receipts	£	865
Average receipts per ton per mile	d.	5.80

No. 50.

Weight of Locomotive Engines and Tenders, empty and loaded, on 31st December, 1882.

					En	gines.				1	Tenders.						
No. of Engines.	No. of Engines of same weight.		Empty.				In Steam.			Empty.				Full.			
	weight.	Leading.	Driving.	Trailing.	Total.	Leading.	Driving.	Trailing.	Total.	Leading.	Middle.	Trailing.	Total.	Leading.	Middle.	Trailing.	Total.
SOUTHERN AND WESTERN. 1 to 4 5 6 and 7 8 9 10 11 12 13 14 to 16 17 to 22 23 to 28 29 to 31 32 to 35 36 to 39 40 to 43 44 to 47 48 to 51 52 53 to 59 60 to 65 66 67 to 74 75 to 78 79 to 92 93 to 102 103 104 105 106 to 117 118 to 126 127 to 129 130 131 to 141	4121111366344441761814011129311	tons cwt qrs. 9	tonsewt. qrs. 10 18 0 5 19 2 6 10 2 7 12 2 9 6 3 6 9 2 7 12 2 10 8 0 10 19 2 11 7 2 11 2 2 4 15 3 10 19 3 8 8 3 11 12 0 10 6 2 11 4 3 4 7 0 10 6 2 11 4 3 4 7 0 10 18 0 10 18 0 10 18 0 10 18 0 10 18 0 10 18 0 11 0 10 12 0 10 12 0	tons cwt. qrs. 10 14 2 3-6 2 3 19 1 7 17 1 4 0 0 12 0 0 4 0 0 7 17 1 8 1 5 3 1 8 1 0 9 12 3 5 5 2 10 4 2 10 16 1 11 6 0 5 10 0 7 8 2 10 16 1 11 8 3 10 14 2 10 14 2 10 14 2 10 14 2 10 14 2 10 14 2 10 14 2 10 14 2 10 14 2 10 14 2 10 14 2 10 14 2 10 14 3 6 2 0 9 19 0 40 18 3	tons cwt. qrs. 30 14 0 16 11 0 19 8 0 24 4 2 18 1 3 28 8 3 18 1 3 24 4 2 22 16 1 26 11 2 28 19 1 14 18 2 28 19 1 14 18 2 26 15 1 32 2 3 33 16 3 14 10 1 27 9 2 26 15 1 32 2 3 33 16 3 14 10 1 22 14 1 34 18 2 30 14 0	tons ewt. qrs. 9 19 2 7 13 0 9 0 0 8 14 0 7 19 0 8 1 1 8 14 0 10 12 0 8 8 2 9 10 0 12 5 0 9 14 0 12 5 0 12 2 1 6 8 0 9 14 0 12 7 3 9 14 0 12 7 3 9 14 0 9 19 2 12 8 0 9 19 2 12 7 3 7 19 0	tons cwt. qrs. 12 0 0 6 0 0 9 4 0 9 14 0 9 14 0 9 14 0 7 17 0 12 0 0 12 6 0 11 4 1 6 6 0 12 0 1 12 12 0 10 17 0 11 11 3 10 17 0 11 11 3 10 17 0 11 11 3 10 17 0 11 11 3 10 17 0 11 11 3 10 17 0 11 11 3 10 17 0 11 11 3 10 17 0 11 11 3 10 17 0 11 11 3 10 17 0 11 11 3 10 17 0 11 11 3 10 17 0 11 11 3 10 17 0 11 11 3 10 17 0 11 11 3 10 17 0 11 10 0 11 10 0	tons cwt. qrs. II 16 2 4 0 0 3 6 1 II 11 3 4 6 3 14 17 0 4 4 0 II 11 3 7 17 2 6 6 0 9 10 2 II 0 0 7 5 0 II 6 3 I2 1 2 I2 18 I 6 18 0 I1 8 0 I1 16 2 I2 4 0 II 16 2 I2 4 0 II 16 2 I2 12 4 0 II 16 2 I2 14 0 7 14 2 I1 1 2	tons ewt. qrs. 33 16 0 17 13 0 .21 10 1 29 19 3 21 8 3 33 14 0 21 4 1 29 19 3 26 5 0 30 5 0 31 12 3 19 12 0 32 16 1 28 0 0 31 17 3 35 18 1 37 5 3 19 5 2 8 0 0 37 11 3 33 16 0 33 17 0 33 16 0 33 17 0 33 16 0 33 17 0 33 16 0 33 17 0 33 16 0 33 17 0 33 16 0 37 11 3 33 16 0 37 11 3 33 16 0 37 11 3 33 16 0 37 11 3 33 16 0 37 11 3 33 16 0 37 11 3 33 16 0 37 11 3	tons cwt. qrs. 4 7 0 3 15 1 3 5 2 4 9 3 4 0 3 4 4 1 4 8 0 4 9 0 4 5 0 3 16 3 4 4 0 0 3 16 3 4 4 0 0 4 9 1 4 5 0 0 4 7 0 0 4 9 2 4 7 0 0 4 9 2 4 7 0 0 4 9 2 6 10 1 6 3 0	tons ewt. qrs. 3 2 1	tons ewt qrs. 4 2 3 3 9 0 3 5 0 3 12 2 6 3 2 3 14 3 4 8 3 4 13 0 4 11 3 4 6 0 4 12 0 3 10 2 4 3 1 4 13 2 4 3 1 4 13 2 4 8 2 4 3 1 4 13 2 4 8 2 6 16 0 6 14 0	tons ewt. qrs. II 12 0 7 4 1 9 10 0	tons cwt. qrs. 7 16 0 6 15 0 5 7 2 6 9 3 7 18 0 6 10 3 6 18 0 7 9 0 6 12 0 7 0 0 7 19 0 8 1 2 7 8 0 8 12 2 9 0 2 8 6 0 7 14 0 7 16 0 7 16 0 7 16 0 7 14 0 7 16 0 7 14 0 7 14 0 7 14 0 7 14 0 7 14 0	tons cwt. qrs. 7 2 0 6 0 0	tons cwt. qrs. 7 13 0 6 3 2 6 5 0 6 5 1 9 12 0 6 5 2 7 12 3 7 6 0 7 12 2 7 4 0 8 1 0 8 13 2 7 12 2 8 5 0 8 9 2 8 5 0 7 12 2 7 13 0 7 13 0 7 13 0 7 13 0 7 13 0 7 13 0 7 13 0	tonscwt. qri 12 11 0 12 18 2 17 12 2

No. 50 (continued)—Weight of Locomotive Engines and Tenders, empty and loaded, on 31st December, 1882.

					Engines.				Ten	ders.	•	
No. of Engines.	No. of Engines of same		Em	epty.		. In Steam	m.	Empty.		Full.		
_	weight.	Leading.	Driving.	Trailing. Total	Leading.	Driving. T	Trailing. Total.	Leading. Middle. T	Frailing. Total.	Leading. Middle.	Trailing. Total.	
SOUTHERN AND WESTERN—contd. 142 143 to 157 158 to 163 164 165 to 182 183 to 194 205 to 220	1	9 1 2 11 9 3 10 11 0 9 1 2 11 9 3 9 1 2 Bogie 7 5 2 Coupled 9 15 2 Front Bogie	10 18 0 11 3 0 10 18 0 10 18 0 10 18 0	11 8 3 34 18 11 1 0 32 15 10 14 2 30 14 11 8 3 34 18 10 14 2 30 14 11 17 0 39 7	9 19 2 12 7 3 10 0 2 9 19 2 12 7 3 9 19 2 Bogie 7 14 0 Coupled 10 11 3 Front Bogie 6 0 0	12 0 0 1 13 0 0 1 15 1 2 1 12 0 0 1 13 0 0 1 12 0 0 1 13 1 2 1 11 1 2 1	11 16 2 33 16 0 12 4 0 37 11 3 14 19 1 40 1 1 11 16 2 33 16 0 12 4 0 37 11 3 11 16 2 33 16 0 13 1 0 42 8 1	4 7 0 3 2 I 4 4 9 2 3 4 2 4 4 7 0 3 2 I 4 4 7 0 3 2 I 4 4 7 0 3 2 I 4 5 I 4 5 I 4	as cwt qrs. tons cwt. qrs. 4 2 3 11 12 0 4 0 2 11 14 2	tons cwt. qrs. tons cwt. qrs. 7 16 0 7 2 0 7 14 0 6 11 0	cons cwt. qrs. ons cwt. qr 7 13 0 22 11 0 7 8 3 21 13 3 1	
255 W 257	3 {	Back Rogie 5 19 0) 11 13 2	11 3 2 34 13	Back Bogic 6 10 0		3, 11 0	4 9 0 4 7 0 2				
NORTHERN. 1 to 3 4 5 and 17 6 and 7 8 9 10 11, 12, 13, 18, 19, 21, and 22. 14 to 16 20 23 to 26 27 to 30 31 to 36 37 to 39 40 to 46 47 to 51	3 1 2 2 1 1 7 7 3 1 4 46 3 7 5	9 1 0 8 0 0 7 12 1 9 4 0 6 8 2 4 5 3 8 0 1 6 13 0 8 7 0 10 0 0 9 14 0 9 1 2 11 9 3 9 1 2 11 9 3	9 0 0 0 0 5 17, 0 0 0 0 10 8 11 0 0 0 0 12 0 0 10 18 0 12 0 0 10 18 0 12 0 0 0 12 0 0 0 12 0 0 10 18 0 12 0 0 0 10 18 0 10 18 0 12 0 0 0 10 18 0 12 0 0 0 10 18 0 12 0 0 0 10 18 0 12 0 0 0 10 18 0 12 0 0 0 10 18 0 12 0 0 0 10 18 0 12 0 0 0 10 18 0 12 0 0 0 10 18 0 12 0 0 0 0 10 18 0 12 0 0 0 0 10 18 0 0 0 0 0 0 0 0 0 0 0 0 0	2 10 0 16 17 4 0 0 18 1 11 12 0 30 12 3 8 2 20 5 4 14 1 13 4 4 8 1 22 16 7 11 0 26 11 9 0 0 27 13 10 0 0 30 0 9 13 0 28 8 11 8 3 34 18 10 14 2 30 14 11 8 3 34 18 10 14 2 30 14 11 8 3 34 18	9 10 0 8 0 0 10 14 0 7 8 2 5 16 3 10 0 2	6 3 0 4 8 12 0 4 11 8 1 1 5 5 3 11 2 0 11 12 6 0 12 13 0	1 4	3 15 0	2 18 3 10 17 0 3 9 0 7 4 0 3 12 2 7 14 2	7 7 2 4 17 0 6 15 0 6 9 3 6 9 3 6 18 0 6 3 0 7 3 0 5 14 0 7 14 0 6 11 0 7 16 0 7 2 0 7 14 0 6 11 0 7 16 0 7 2 0 7 14 0 6 11 0 7 16 0 7 2 0 7 14 0 6 11 0 7 16 0 7 2 0	8 3 2 20 8 6 3 2 12 18 6 5 1 12 15 6 5 1 12 15 6 6 9 0 12 18 7 12 2 20 7 20 4 6 7 8 3 21 13 7 13 0 22 11 6 7 8 3 21 13 7 13 0 22 11 6 7 8 3 21 13 7 13 0 22 11 6 7 8 3 21 13 7 13 0 22 11 6 7 8 3 21 13 7 13 0 22 11 6 7 8 3 21 13 7 13 0 22 11 6 7 8 3 21 13 7 13 0 22 11 6 7 8 3 21 13 7 13 0 22 11 6 7 8 3 21 13 7 13 0 22 11 6 7 8 3 21 13 7 13 0 22 11 6 7 8 3 21 13 7 13 0 22 11 6 7 13	

No. 50 (continued)—Abstract of Total and Average Weights of Rolling Stock, empty.

		Southern and Wes	tern.	Northern.					
	No. of each Class	Total Weight, Empty.	Average Weight.	No. of each Class	Total Weight, empty.	Average Weight			
Passenger Stock.		tons cwt. qrs.	tons cwt. qrs.		tôns cwt. qrs.	tons cwt. qrs.			
Carriages, Dining	ı,	25 11 2	25 11 2	••••	***********				
Do. Sleeping	7	126 10 2	18 1 2	·	18 11 0	18 11 0			
Do. First Class	62	809 o 3	13 1 0	. 19	146 5 0	7 14 0			
Do. Composite	66	757 15 1	II 9 2½	20	212 0 0	10 12 0			
Brake Váns, "	31	345 IO O	11 2 3 ³ 4						
Carriages, 2nd Class	100	873 9 0	8 14 23	l i	320 6 3	6 г о			
Mail Vans	6	35 9 2	5. 18 I	. 4	23 0 0	5 15 0			
Prison "	3	19 4 2	681	2	14 0.2	7 O I			
Hearses	4	18 12 2	· 4 13 0½	. 2	10 15 2	5 7 3			
Workmen's Vans	8	42 16 o	5 7 0						
Horse Boxes.	64	370 13 0	5 15 3½	30	170 2 2	-			
Carriage Trucks	36	150 9 0	4 3 2 4	·	85 3 1	5 13 2 4 5 1			
Brake Vans	15	97 18 0	6 10 2	10		٠			
		——————————————————————————————————————			56 6 3	5 12 3			
Total	403	3,672 19 2	9 2 I	161	1,056 11 1	6 11 1			
Average running during Year	390	3,572 13 3	•••	160	1,052 7 2	6 11 o			
Goods Stock.		·							
Brake Vans	82	074 0 0	÷		100 06				
A Waggons		974 2 2	11 17 24	39	408 16 3	10 9 3			
	72	290 6 0	4 0 2½	70	292 8 0	4 3 2			
B ,, C Vans	156	703 10 1	4 10 1	58	281 13 1	4 17 03			
D Waggons	3,012		5 11 3	72	413 14 0	5 14 3 ³			
E "	192	13,755 16 1	4 11 14	673	3,016 16 2	4 9 3			
Water Trucks	6	797 1 0	4 3 0	84	340 I 3	4 1 0			
F Waggons			4 4 3	-	36 17 3	63,0			
la ·	3	•	7 10 3		***********	************			
Powder Vans	3	25 7 0	. 8 9 0	•••••		**********			
Sheep ,,	10	51 15 0	5 3 2	7	36 10 1	5 4 I			
Cattle Waggons	199	1,333 5 3	6 14 0	114	765 1 0	6 14 1			
Meat Vans	220	1,369 11 3	6 4 2	82	516 16 1	660			
Composite Cattle and Goods Van	10	57 6 0 8 18 0	5 14 2½	3	17 17 3	5 19 1			
*Milk Vans	, I		8 18 0		***************************************	•••••••			
Refrigerating Car	12	85 10 0	7 2 2	•••••	••••••	••••••			
*Oil Vans	8	8 3 0	8 3 0		••••••	••••••			
Ballast Waggons		43 16 0	5 9 2		-40 .0				
Accident Vans	6	143 7 0	3 8 1	43	168 18 0	3 18 2			
	[52 10 0	8 15 0	·	•••••	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
*Coal Waggons				2,311	10,937 9 3	4 14 3			
Total	4,214	20,748 7 3	4 18 2	3,562	17,233 I O	4 16 3			
Average running during Year	3,995	19,642 0 0	·	3,473	16,847 12 0	-			
	l I	* Private vehicles.			!				

* Private vehicles.

No. 50—continued.

Weight of Locomotive Engines and Tenders, and Tonnage carried, on the Great Southern, Western, and Richmond Lines during 1882.

o. of Engine.	Weight of Engine and Tender for whole journey.	Mileage of each Engine and Tender.	Total Tons carried.	No. of Engine.	Weight of Engine and Tender for whole journey.	Mileage of each Engine and Tender.	Total Tons carried
	t. c. q.	,			t. c. q.		
1	52 14 0	9,341	492,271	83	. 55 18 3	28,508	1,594,66
2	52 14 0	25,685	1,353,600	84	55 18 3	23,595	1,319,84
3	52 14 0	34,478	1,816,991	85	55 18 3	36,701	2,052,96
4	52 14 0	25,910	1,365,457	86	55 18 3	25,227	1,411,13
5 6	28 13 2	3,523	101,022	87	. 55 18 3	25,450	1,423,60
0	36 8 2	1,643	59,846	88 80	55 18 3	17,061 33,600	954,35
7 8	36 8 2 28 1 1			89	55 18 ·3 55 18 3	32,472	1,879,50 1,816,40
	28 1 1	1		. 91 . 00	55 18 3 55 18 3	28,241	1,579,73
9 10	52 15 2	6,799	358,817	92	55 18 3	12,306	688,3
11	32 7 0			93	52 14 0	24,873	1,310,80
I 2	28 1 1	144	4,041	94	52 14 0	30,316	1,597,6
13	38 18 o	16,847	655,348	95	52 14 0	22,004	1,159,6
14	42 14 3	16	. 684	96	52 14 0	25,121	1,323,8 960,9
15 16	42 14 3	15,439	659,824 272,665	97 98	52 I4 O 52 I4 O	18,235	1,598,3
17	42 14 3 47 13 2	6,380 j	130,105	99	52 I4 O 52 I4 O	30,329 25,778	1,358,5
18	47 13 2	19,752	941,677	100	52 14 0	25,359	1,336,4
19	47 13 2	16,575	790,213	101	52 14 0	26,227	1,382,1
20	47 13 2	16,771	799,557	102	52 14 0	26,192	1,380,3
21	47 13. 2	9,580	456,727	. 103	49 14 1	19,409	964,8
22	47 13 2 48 5 0	10,116	482,280	104	52 14 0	28,740	1,514,5
23	48 5 0	16,582	800,082	105	50 18 3	23,654	1,204,8
24	48 5 0 48 5 0 48 5 0 48 5 0	17,926	864,930 982,756	106 107	52 14 0	25,378	1,337,4 • 2,082,3
25 26	48 5 0	20,368	1,136,625	107	52 14 0 52 14 0	25,400	1,338,8
27	48 5 0	13,207	637,238	100	52 14 0	32,168	1,695,2
28	48 5 0	17,167	828,308	11o.	52 14 0	25,768	1,357,9
29	18 0 3	1,228	22,150	111	52 14 0	22,339	1,177,2
30	18 0 3	28,941	522,023	112	52 14 0	26,853	1,415,1
31	18 0 3	16,589	299,224	113	52 14 0	24,713	1,302,3
32	51 2 0	28,874	1,475,461	114	52 14 0	29,645	1,562,2 1,411,7
33	51 2 0 51 2 0	16,712	853,983 1,106,826	115	52 14 0 52 14 0	18,819	991,7
34	51 2 0 51 2 0	16,319	833,901	117	52 14 0 52 14 0	26,504	1,396,7
35 36	48 2 1	15,417	741,750	118	55 18 3	26,031	1,506,4
27	48 2 1	14,019	674,489	119	55 18 3	34,820	1,947,7
38	48 2 1	33,222	1,598,393	120	55 18 3	17,187	961,3
39	48 2 1	22,501	1,082,579	121	55 18 3	27,315	1,527,9
40	48 4 0	19,283	929,441	122	55 18 3	30,727	1,718,7
41	48 4 0	15,950	768,790	123	55 18 3	30,625	1,713,0
42	48 4 0	21,443	1,033,553	124 125	55 18 3	21,916	1,225,9
43 44	48 4 0	24,053	1,195,735	126	55 18 3	23,546	1,317,1
45	49 14 1	23,056	1,146,171	127	21 5 0	19,805	420,8
46 ·	49 14 1	22,006	1,093,973	128	21 5 0	17,354	368,7
47 48	49 14 1	18,003	899,974	129	21 5 0	20,848	443,0
48	56 13 0	20,547	1,163,988	130	55 10 I	6,532	362,6 1,639,4
49	56 13 0 56 13 0	21,882 23,006	1,239,615	131 132	70 18 2	17,633	1,250,6
50 51	56 13 0	17,492	990,922	133	70 18 2	30,057	2,131,7
5 ²	49 14 1	27,111	1,347,756	134	70 18 2	30,003	2,127,9
53	49 14 1 56 13 0	17,113	969,451	r35	70 18 2	40,038	2,839,6
54	1 56130		1,157,983	136	70 18 2	23,182	1,644,1
55 56	56 13 0		1,219,561	137	. 70 18 2	31,047	2,419,7 1,527,8
50	56 13 0 56 13 0	1 0	1,265,561	138 139	70 18 2 70 18 2	21,542	2,609,4
57 58	1 56 12 0		1,139,118	140	70 18 2	14,964	1,061,
59	56130		1,336,770	141	70 18 2	29,454	2,089,0
59 60	58 17 1 58 17 1	10,231	602,222	142	52 14 0	27,671	1,458,
61	58 17 1		1920,551	143	55 18 3	27,661	1,547,2
62	58 17 1		1,073,829	144	55 18 3		1,786,5
63 ·	58 17 1 58 17 1	1	855,684 1,516,828	145 146	55 18 3 55 18 3		1,829,
64 65	58 17 1		846,619	147	55 18 3 55 18 3	16	1,206,
63 · 64 65 66	17 16 3	5,238	93,433	148	55 18 3	26,125	1,461,
67 · 68	25 18 3	3,736	96,903	149	55 18 3	28,451	1,591,
68	25 18 3	23,468	608,701	150	55 18 3	35,655	1,994,
69	25 18 3	8,870	230,066	151	55 18 3		1,734,
70	25 18 3 25 18 3		91,559	152	55 18 3 55 18 3		1,445,
71 72			302,872	153 154	55 18 3 55 18 3		1,551,
72 73	25 18 3 25 18 3		610,465	155	55 18 3		1,625,
73 74			573,322	156	55 18 3	12,575	703,
75	48 6 0	22,260	1,075,158	157	55 18 3	19,655	1,099,
75 76 77 78	25 18 3 48 6 0 48 6 0 48 6 0	21,408	1,034,006	158	37 16 1	25,565	966,
77 .	48 6 0			159	37 16 1		871,
78	48 6 o	,, ,,	716,482	160 161	37 16 1 37 16 1		919, 897,
79. 80	55 18 3 55 18 3		1,443,132	162	37 16 1 37 16 1		822,
-				163	37 16 1 37 16 1		881,
81	55 18 3	2.1.9/4	1,341,040	,	3/	38,078	1,006,

No. 50—continued. Weight of Locomotive Engines and Tenders, and Tonnage-continued.

No. of Eng	weight of Engine and Tender for whole journey	Engine and	Total Tons carried.	No. of Engine.	Weight of Engine and Tender for whole journey.	Mileage of each Engine and Tender.	Total Tons carried.
	t. c. q.				t. c. q.		
165	55 18 3	33,221	1,858,300	192	52 14 0	14,924	786,495
166	55 18 3	35,834	2,064,464	193	52 14 0	11,789	621,280
167	55 18 3	30,933	1,730,315	194	52 14 0	10,464	551,453
168	55 18 3	32,070	1,793,916	205	62 17 0	33,385	2,098,247
169	55 18 3	25,295	1,414,939	206	62 17 0	36,277	2,280,000
170	55 18 3	37,954	2,123,052	207	62 17 0	36,297	2,281,266
171	55 18 3	29,632	1,657,540	208	62 17 0	37,231	2,339,968
172	. 55 18 3	34,546	1,932,417	209	62 17 0	31,646	1,988,951
173	55 18 3	20,877	1,167,807	210	62 17 0	31,137	1,956,960
174	55 18 3	35,448	1,982,873	211	62 17 0	29,252	1,838,488
175	55 18 3	26,302	1,471,268	212	62 17 0	32,907	2,068,205
176	55 18 3	22,460	1,256,356	213	62 17 0	32,515	2,043,568
177	55 18 3	30,317	1,695,857	214	62 17 0	26,244	1,649,435
178	55 18 3	24,245	1,356,205	215	62 17 0	28,002	1,759,926
179	55 18 3	8,950	500,641	216	62 17 0	30,040	1,888,014
180	55 18 3	10,254	573,583	217	62 17 0	29,306	1,841,882
181	55 18 3	.1,072	59,965	218	62 17 0	28,383	1,783,872
182	55 18 3	431	24,109	219	62 17 0	25,037	1,573,575
183	52 14 0	28,601	1,507,273	220	62 17 0	22,609	1,420,976
184	52 14 0	25,396	1,338,264	255	55 11 0	2,665	148,041
185	52 14 0	32,232	1,698,626	256	58 5 3	1,718	100,138
186	52 14 0	29,688	1,564,558	² 57	58 5 3	564	32,874
187	52 14 0	28,703	1,512,648				
r88	52 14 0	25,778	1,358,501	Totals	10,970 10 1	*4,700,221	222 822 282
189	52 14 0	30,275	1,595,493	AUtom	10,9/0 10 1	4,700,221	251,833,783
190	52 14 0	34,505	1,818,414				
191	52 14 0	20,231	1,066,174	Averages	51 1 0	†22,488½	1,204,946

* Contractor's Engine is not included. Mileage ...

4,701,484

† The average of 209 only, the number running.

GREAT NORTHERN RAILWAY.

No. of Engine.	Weight of Engine and Tender for whole journey.	Mileage of each Engine and Tender.	Total Tons carried.	No. of Engine.	Weight of Engine and Tender for whole journey.	Mileage of each Engine and Tender.	Total Tons carried
	t. c. q.				t. c. q.		
I	42 14 1	16,147	689,679	31	52 14 0	27,103	1,428,32
2	42 14 1	10,163	434,087	32	52 14 0	32,991	1,738,62
3	42 14 1	24,735	1,056,494	33	52 14 0	27,760	1,462,95
4	30 15 1	30,562	940,164	34	52 14 0	28,052	1,478,34
5 6	31 13 2	15,654	495,840	35	52 14 0	28,520	1,503,00
	33 10 2	18,507	620,313	35 36	52 14 0	27,678	1,458,63
7 8	33 10 2	18,840	631,611	37	55 19 0	39,030	2,183,72
	33 19 2	14,075	478,198	37 38	55 19 0	38,550	2,156,87
9	15 13 2	13,833	216,832	39	55 19 0	39,405	2,204,71
10	38 18 o	21,552	838,373	40	52 14 0	32,301	1,702,26
11	47 13 1	27,216	1,297,183	41	52 14 0	32,731	1,724,92
12	47 13 1	23,294	1,110,250	42	52 14 0	29,896	1,575,51
13	47 13 -1	27,861	1,327,925	43	52 14 0	28,547	1,504,42
14 .	47 O I	19,069	896,481	44	52 14 0	34,184	1,801,40
15 16	47 0 1	15,664	736,404	45	52 14 0	26,241	1,382,90
	47 O I	26,147	1,229,236	46	52 14 0	30,152	1,589,01
17	31 13 2	8,729	276,491	47 48	55 19 0	34,485	1,929,43
, 1Š	47 I3 I	17,062	813,218	48	55 19 0	17,135	958,70
19	47 I3 I	30,578	1,457,424	49	55 19 0	22,416	1,254,17
20	33 6 2	19,289	642,806	50 .	55 19 0	30,393	1,700,48
21 .	47 I3 I	25,899	1,234,411	51	55 19 0	17,775	994,51
22	47 13 1	31,431	1,498,080	52	60 13 3	18,519	1,123,87
23	48 6 I	21,952	. 1,060,556	53	60 13 3	18,437	1,118,80
24 .	48 6 I	21,853	1,055,773	54	60 13 3	22,727	1,379,24
25 26	48 6 I	12,847	620,671	55	60 13 3	21,871	1,327,29
	48 6 I	22,219	1,073,855				
27 28	55 7 I	28,427	1,573,790	Totals	2,676 0 0	*1,376,419	68 850 0
	55 7 I	31,093	1,721,386		2,0/0 0 0	. *13751419	68,852,21
29	55 7 I	42,190	2,335,744				
30	55 7 I	32,632	1,806,589	Averages	48 13 0	25,026	1,251,85

* Contractors' engines are not included.
Mileage 1,011
... 1,376,419

.. 1,377,430 miles.

No. 50—continued.

From the figures in the foregoing tables the following results are derived:—

			South and West.	North:	Totals.
	Locomotives.	· .			
					-
Muulan of anais	nes and tenders—				
Number of engil	(running)	No.	108	28	136
Goods	do.	,,	101	. 27	128
0.0000		"			
	Total	,,	209	55	264
~					
dross weight of	engines and tenders—	tono	: ; , , , ,	1,316	6,229
Passenger	(Average)	\$	4,913	1,278	6,731
Goods,	uo.	".	5,453		
•	Total	,,	10,366	2,594	12,960
		"	7,5	,,,,,	,
Mileage of engir	nes and tenders—	<i>.</i>			_
Passenger			1,741,808	430,673	2,172,481
Goods	······	۰,	2,958,413	945,746	3,905,746
	Total	1	4 700 000	1,376,419	6,076,640
	10081	,,	4,700,221	1,3/0,419	0,070,040
Gross tonnage					
Passenger	·	tons	93,324,570	21,543,434	114,868,00
Goods		"	158,509,213	47,308,785	205,817,998
	M-4-1		277 822 782	68,852,219	320,686,00
•	Total	,,	251,833,783	00,052,219	320,080,00
		1	1		
			ļ		i
	•				
				_	
Passe	ENGER AND GOODS STOCK.				
Number of vehi	icles running during the year—				
Number of vehi	icles running during the year—	No.	390	. 160	5.5/
Number of vehi		No.	390 31995	160 3,473	55 7,46
Number of vehi	icles running during the year—	i		J	7,46
Number of vehi	cles running during the year—	İ	3,995	3,473	7,46
Number of vehi Passenger * Goods	cles running during the year— Total	İ	3,995	3,473	7,46
Number of vehi Passenger * Goods	cles running during the year— Total	,,	3,995 4,385	3,473	8,or
Number of vehi Passenger * Goods Weight of Do.— Passenger	cles running during the year— Total	, tons	3,995 4,385 3,573	3,473	8,01 4,62
Number of vehi Passenger * Goods Weight of Do.— Passenger	cles running during the year— Total	, tons	3,995 4,385	3,473	8,01 4,62
Number of vehi Passenger * Goods Weight of Do.— Passenger	cles running during the year— Total	tons	3,995 4,385 3,573	3,473	7,46° 8,01° 4,62 36,49
Number of vehi Passenger * Goods Weight of Do.— Passenger	cles running during the year— Total	tons	3,995 4,385 3,573 19,642	3,473 , 3,633 , 1,052 16,848	7,46° 8,01° 4,62 36,49
Number of vehi Passenger * Goods Weight of Do.– Passenger * Goods	Total Total Total	tons	3,995 4,385 3,573 19,642	3,473 , 3,633 , 1,052 16,848	7,46° 8,01° 4,62 36,49
Number of vehi Passenger * Goods Weight of Do.— Passenger * Goods	Total Total Total Total Total	tons	3,995 4,385 3,573 19,642 23,215	3,473 , 3,633 , 1,052 16,848	7,46° 8,01° 4,62 36,49 41,11
Number of vehi Passenger * Goods Weight of Do.— Passenger * Goods * Total mileage Passenger	Total Total Total	tons	3,995 4,385 3,573 19,642 23,215	3,473 , 3,633 , 1,052 16,848	7,46° 8,01° 4,62 36,49 41,11
Number of vehi Passenger * Goods Weight of Do.— Passenger * Goods * Total mileage Passenger	Total Total Total of vehicles—	tons	3,995 4,385 3,573 19,642 23,215 9,779,527 40,352,890	3,473 , 3,633 , 1,052 16,848 17,900 2,079,172 9,279,138	7,46 ² 8,01 4,6 ² 36,49 41,11 11,858,69 49,63 ² ,02
Number of vehi Passenger * Goods Weight of Do.— Passenger * Goods * Total mileage Passenger	Total	tons	3,995 4,385 3,573 19,642 23,215	3,473 , 3,633 , 1,052 16,848 17,900	7,46 ² 8,01 4,62 36,49 41,11 11,858,69 49,632,02
Number of vehi Passenger * Goods Weight of Do.— Passenger * Goods * Total mileage Passenger	Total Total Total of vehicles—	tons	3,995 4,385 3,573 19,642 23,215 9,779,527 40,352,890	3,473 , 3,633 , 1,052 16,848 17,900 2,079,172 9,279,138	7,46 ² 8,01 4,62 36,49 41,11 11,858,69 49,632,02
Number of vehi Passenger * Goods Weight of Do.— Passenger * Goods * Total mileage Passenger Goods	Total Total Total Total of vehicles—	tons	3,995 4,385 3,573 19,642 23,215 9,779,527 40,352,890	3,473 · 1,052 · 16,848 · 17,900 · 2,079,172 · 9,279,138 · 11,358,310 · .	555 7,466 8,013 4,62 36,49 41,11 11,858,69 49,632,02 61,490,72
Number of vehi Passenger * Goods Weight of Do.— Passenger * Goods * Total mileage Passenger Goods Gross dead weig Passenger	Total Total Total Total of vehicles—	tons ,, , miles ,, tons	3,995 4,385 3,573 19,642 23,215 9,779,527 40,352,890 50,132,417	3,473 - 1,052 - 16,848 - 17,900 - 2,079,172 - 9,279,138 - 11,358,310 - 14,321,537	7,46 ³ 8,01 ³ 4,62 36,49 41,11 11,858,69 49,632,02 61,490,72
Number of vehi Passenger * Goods Weight of Do.— Passenger * Goods * Total mileage Passenger Goods Gross dead weig Passenger	Total Total Total Total of vehicles—	tons ,, , miles ,, tons	3,995 4,385 3,573 19,642 23,215 9,779,527 40,352,890 50,132,417	3,473 · 1,052 · 16,848 · 17,900 · 2,079,172 · 9,279,138 · 11,358,310 · .	7,46 8,01 4,62 36,49 41,11 11,858,69 49,632,02 61,490,72
Number of vehi Passenger * Goods Weight of Do.— Passenger * Goods * Total mileage Passenger Goods	Total Total Total Total of vehicles—	tons " " tons " tons	3,995 4,385 3,573 19,642 23,215 9,779,527 40,352,890 50,132,417	3,473 - 1,052 - 16,848 - 17,900 - 2,079,172 - 9,279,138 - 11,358,310 - 14,321,537	7,46 8,01 4,62 36,49 41,11 11,858,69 49,632,02 61,490,72

^{*}The mileage does not include ballast waggons, but merely vehicles used for traffic purposes; and as many of them

No. 50-continued.

Total ton mileage of load— Passenger Goods Total tonnage of vehicles empty and loaded—	No " " " tons "	566,441 1,077,420 1,643,861 7,385,480 98,400,226 105,785,706	45,748 1,542,007 1,587,855 1,345,747 26,624,471 27,970,218	612,189 2,619,427 3,231,616 8,731,227 125,024,697 133,755,924
Tonnage of load carried in vehicles— Passenger Goods Total Total ton mileage of load— Passenger Goods Total Total Total tonnage of vehicles empty and loaded— Passenger Goods	" " tons	1,077,420 1,643,861 7,385,480 98,400,226 105,785,706	1,542,007 1,587,855 1,345,747 26,624,471 27,970,218	2,619,427 3,231,616 8,731,227 125,024,697 133,755,924
Passenger Goods Total Total ton mileage of load— Passenger Goods Total Total Total tonnage of vehicles empty and loaded— Passenger Goods	" " tons	1,077,420 1,643,861 7,385,480 98,400,226 105,785,706	1,542,007 1,587,855 1,345,747 26,624,471 27,970,218	2,619,427 3,231,616 8,731,227 125,024,697 133,755,924
Total ton mileage of load— Passenger	" " tons	7,385,480 98,400,226 105,785,706	1,587,855 1,345,747 26,624,471 27,970,218	3,231,616 8,731,227 125,024,697 133,755,924
Passenger Goods Total Total tonnage of vehicles empty and loaded— Passenger Goods	" tons "	98,400,226 105,785,706 104,928,987	26,624,471 27,970,218	125,024,697
Passenger	" tons "	98,400,226 105,785,706 104,928,987	26,624,471 27,970,218	125,024,697
Total tonnage of vehicles empty and loaded— Passenger Goods	tons	104,928,987	. 15,667,284	120,596,271
Passenger	,,	104,928,987 318,369,971		120,596,271
Passenger	,,	104,928,987 318,369,971		120,596,271
Total	,,		ノレンハファンフグ	392,919,810
·		423,298,958	90,217,123	513,516,081
Total tonnage of engines and vehicles loaded— Passenger	"	198,253,557 476,879,184	37,210,718 121,858,624	235,464,275 598,737,808
Total	,,	675,132,741	159,069,342	834,202,083
Gross earnings— Passenger and Coaching	£	489,601 831,726	98,224 279,312	587,825 1,111,038
Total	,,	1,321,327	377,536	1,698,863
	,			· ·
Total working expenses	"	737,633	197,002	934,635
Net earnings		583,694	180,534	764,228
				•
Results :—				•
AVERAGE EARNINGS PER TON PER MILE— PASSENGER	d.	1400		
Goods	u. "	.2593 .419	·633 ·550	*599 *445
	•			
ALL TRAFFIC.	,,	•470	•569	•489
WORKING EXPENSES PER TON PER MILE	,,	*262	· *297	•269
NET EARNINGS PER TON PER MILE	"	*208	*272	. '220

No. 51.

Merchandise Traffic Rates, 1878 to 1882, showing rates per ton.

Articles of Traffic.		F	*1881. EBRUARY 3.	*1882.a October 4.			
Articles of Traine.	Class.	miles.	Exceeding 15 miles.	Class.	15 miles.	Exceeding 15 miles.	
Acids—in cases and carboys	4 2 3 A	s. d. 12 0 7 0 9 0 2 0	per mile. s. d. o 9 o 5 o 7 o 14		s. d.	per mile. s. d. o 1½ to 75 miles.	
Ale and Porter—in bulk Ammunition Bark	†3 4 A	9 0 12 0 2 0	0 7 0 9 0 1½	• A	2 0	o 1 over 75 ,,	
Battens	B A	3 .0	o 1½ Fordistances over o 1¼ 40 miles, mini-		2 0 25%	o rover 75 "	
Beet-root	A	2 0	mum 2s. 6d. 0 1½	A	2 0	× 25% o 18 to 75 ,, o 1 over 75 ,,	
Bicycles	D D	5 0	0 9	A	2 0 × 50%		
Boats—80 cubic feet per ton Boilers Do. Plates Bones—in bags	2 2 2 A	7 0 7 0 7 0 2 0	0 5 0 5 0 5 0 14	A	2 0	o 11 to 75 . "	
Do. loose	B C A	3 0 4 0 2 0	0 I ¹ / ₂ 0 2 ¹ / ₄	B A	3 0 2 0	O 2 O 18 to 75 ,	
Bricks—4 ton lots	ľ	2 0	O I¼	A A	2 0	o 1 to 75 ,,	
Cabbages		5 0	0 1½ 0 2½ 0 7	В	3 0	O I to 75 ,, O I over 75 ,, O 2	
Carrots	G C	4 0 4 0 6 0	0 1½	A B B	3 0 3 0 3 0	o 1 to 75 ,, o 1 over 75 ,, o 2 o 2	
Chaff. (See page 131) Charcoal and coke—in bags Chicory Root	D	5 0 3 0	O 2½ O 1½	B A	3 0 2 0	0 2 0 1½ to 75 ,,	
Clay—4 ton lots	Mis.	1 б	o 1½ to 35 miles; over 35 miles, 1d per ton per mile.	Mis.	1 б	o i over 75 ,, o i 1 i 5 to 35 ,, o i 35 to 150 ,, o o 1 i 50 to 250 ,,	
Coal. (See page 130.) Do. Waggons—new on wheels to collieries	ŀ		4d. per mile each; minimum, 5s.			o o½ over 250 ,,	
Coke Do. in pags Colonial Wine Up		4 ° 5 ° 5 °	0 2½ 0 2½ 0 2½ over 300 miles 20 per cent. discount, minimum	ВВ	3 0	0 2	
Copper Ingots Do. Ore—4 ton lots		4 0 2 0	£2 118. 1d.	B Mis.	3 ° 1 6	0 2 : 0 1\frac{1}{4} 15 to 35 ,, 0 1 35 to 150 ,, 0 0\frac{3}{4} 150 to 250 ,, 0 0\frac{1}{2} 0 ver 250 ,,	
Dairy Produce Drain Pipes Dynamite—owners' risk, in casks or cases	В	7 0	0 5 0 1½	A	2 0		
Felloes	3	9 0 3 0 2 0	0 7 0 1½ For distances over 0 1¼ 40 miles, mini-		2 0	o 1½ to 75 ,,	
Fireclay Blocks	ĺ	2 0	mum 6s. 2d.		2 0	o 18 to 75 ,, o 1 over 75 ,,	
Firewood	Mis.	1 6	o 1¼ to 35 miles; over 35 miles, 1d. per ton per mile.		1 6	o 1\frac{1}{4} 15 to 35 ,, o 1 35 to 150 ,, o 0\frac{2}{4} 150 to 250 ,, o 0\frac{1}{2} over 250 ,,	
Fireworks Fish		12 0	o 9 Not less than 2 cwt., 3d. per ton per mile.				
Flour	1	2 0				o 1½ to 75 ,, o 1 over 75 ,,	
Flower-pots Fruit—Orchard		4 0 2 0	O 2½ O 1½	В А	$\frac{3}{2} - \hat{0}$	0 2 0 1\frac{1}{8} to 75 ,, 0 1 over 75 ,,	

Marked thus * subject to the following allowances:—10 per cent. on the rate per mile for every mile beyond 150; 40 per cent. on the rate per mile for every mile beyond 150; 40 per cent. on the rate per mile for every mile beyond 200.

Over 340 miles, 2nd class.

No. 51—continued.

MERCHANDIZE Traffic Rates—continued.

Articles of Traffic.		F	*1881. EBRUARY 3.	*1882.a October 4.			
	Class.	15 miles.	Exceeding 15 miles.	Class.	15 miles.	Exceeding 15 miles.	
Furniture—in cases Do. loose	3 · 4 A	s. d. 9. 0 12 0 2 0	per mile. s: d. o 7 o 9 o 1 ¹ / ₄	A	s. d.	per mile. s. d. o 1½ to 75 miles. o 1 over 75 ,,	
Glue Pieces—wet	C B	4 ° 3 °	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		3 0 2 0	0 2 0 11 to 75 ,,	
Grain—all kinds	A	2 0	O I ¹ / ₄	A	2 0	O I over 75 ,, O I to 75 ,, O I over 75 ,,	
Green Fodder	A ~~	2 0	O I ¹ / ₄		2 0	O 18 to 75 ,, O 1 over 75 ,,	
Guano and Artificial Manures	В	3 0	0 1½	A	2.0.	o 1 to 75 ,,	
Gunpowder (owner's risk)—in casks Hats—in cases Hardware Hay. (See page 131.) Hides (wet)	4 ·3	12 0	o per ton per mile.				
,, (dry) Hoofs—in bags ,, loose Horns—in bags ,, loose Iron—Bar, Rod, Angle, and T Boiler Plate	D A ·· B A B	3 0 5 0 2 0 3 0 2 0 3 0 7 0	O I½ O 2½ O I¼ O I½ O I½ O I½ O O I½	·· B }· A · } A	2 0 2 0 2 0	o 1 to 75 ,, o 1 over 75 ,, o 2 , o 1 to 75 ,, o 1 over 75 ,, o 1 to 75 ,, o 1 over 75 ,,	
Corrugated—in cases Girders Pig and Scrap to smelting works	<i>b</i> 2 2 Mis.	7 0 7 0 1 6	o 5 o 5 o 14 to 35 miles; over	I Mie	6 o	o 4 max. £18 per · truck, 6 tons.	
Pig and Scrap		5 0	35 miles, 1d.			0 1½ to 35 miles. 0 1 to 150 ,, 0 0¾ to 250 · ,,	
Do.—Tanks, 160 c. ft. per ton—Galvanized		7 0	o 5			o 0½ over 250 ,,	
iron. Do.—Wire in bundles	b 2	7 0	o 5 £22 10s. pertruck, 6 tons, over 300 miles.		6 o	o 4 max. £18 per truck.	
Do.—Wheels and Axles—Railway Do.—Rails and Chairs Do.—Castings Do. Do. from the manufactory	I 2	7 0 6 0 7 0 1 6	0 5 0 4 0 5 0 14 to 35 miles; over 35 miles, 1d.	Mis.		o 1¼ to 35 miles. o 1 to 150 ,, o 0¾ to 250 ,,	
Do.—Screws and Washers—Galvanized Iron Nails Ironmongery Ironstone	<i>b</i> 2	7 0 7 0 9 0 1 6	0 5 0 5		7 ° 1 6	0 0½ over 250,, 0 5 0 1½ to 35 ,, 0 1 to 150 ,, 0 0½ to 250 ,,	
Jams Joinery Kerosene Oil Lead—Pig or Sheet Leather Do. loose Lamps—Street, Door, or Hall	3 D 2 1	5 0 0 5 0 7 0 7 0 0 7 0 0 0 0 0 0 0 0 0	o 2½ to Sydney only. o 7 o 2½ to Sydney only. o 5 o 4 o 5 } to Sydney only	В	3 ° 6 ° 0	o oł over 250 ,, o 2	
Laths	3 B	9 0	O 7 O I ¹ / ₂	A	2 0	o 1 to 75 ,,	
Lick Blocks	C	4 0	o 2½ max. £2 10s. 5d. per ton.		3 0	0 2	
Lime—4-ton lots Limestone	B Mis.	3 ° 1 6	o 1½ to 35 miles; over 35 miles, 1d.	A Mis.	2 O 1 6	o 1½ to 75 ,, o 1 over 75 ,, o 1¼ to 35 ,, o 1 to 150 ,,	
Lithofracteur or other explosives—owner's risk—in casks or cases. Lucerne—Seed	1 3	6 0	o per ton per mile.			o o¼ to 250 ,, o o½ over 250 ,,	
Malt Do. iji tanks Malt Tanks—Square and empty Mangold Wurzel		6 o 9 o 2 o	0 4 0 7	2 A	7 0	o 5	
Manure, loose (4-ton lots)		ı 6	•		ı 6	o 1 over 75 ,, o 1 to 35 ,, o 1 to 150 ,, o 0 to 250 ,, o 0 to 250 ,,	

Marked thus*, subject to the following allowances:—10 per cent on the rate per mile for every mile beyond 100; 20 per cent on the rate per mile for every mile beyond 200.

The A reduction of 20 per cent on all goods carried over 340 miles from Sydney.

The Over 340 miles, 1st class

Cover 380 miles, 1st class.

No. 51—continued. MERCHANDISE Traffic Rates—continued.

Articles of Traffic.		*	F		1881 BUAI	RY 3.		*1882.a October 4.			
	Class.	mi	5 les.		Exc	eeding 15 miles.	Class.	mi	i5 les.	Exceeding 15 miles.	
Manure—in bags Marble—Undressed (4-ton lots) Meal	B B	8. 3	0	s. 0	1 }	le.	A	2	d. o	per mile. s. d. o 1½ to 75 miles. o 1 over 75 ,, o 1½ to 75 ,, o 1 over 75 ,, o 1½ to 75 ,, o 1 over 75 ,,	
Measurement Goods, 80 cubic feet to ton Melons	A	6 2	0	0	4 1 1	-	, A	2	0	o 1½ to 75 ,,	
Millinery—in cases. Mirrors Muriate of Lime. Musical Instruments Naphtha Offal	4 4 4 B	12 6 12 12	0 0 0	0 0	9 1½				6	o 1½ to 35 ,, o 1 to 150 ,, o 0½ to 250 ,, o 0½ over 250 ,,	
Opium	Å	12	0	0	9		l	ľ	6	o 1 to 35 ,, o 1 to 150 ,, o 0 to 250 ,, o 0 to 250 ,,	
Palings	B A	3 2			1 ½	per ton per mile. For distances over 40 miles, min. 6s. 2d.		2	o	o 1½ to 75 ,, o 1 over 75 ,,	
Papier-maché Goods Perambulators Perfumery Picture Frames Pier Glasses Pipes—iron Up journey Pitch	3 4 3 4 4 From t Mis.	7 9 12 9 12 12 he m	o o o anu 6	fact o o	5 7 9 7 9 9 9 9 11 1	to 35 miles.	B Mis.	•	6	o 1½ to 35 ,, o 1 to 150 ,, o 0½ to 250 ,, o 0½ over 250 ,,	
Plants (in pots and cases) Plated Goods Plate Glass Pollard Portable Engines	3 4 A B	9 12 2	0000 00	0 0 0 0	7	For distances over	A A		0	o 1½ to 75 ,, o 1 over 75 ,, o 1½ to 75 ,,	
Posts and Rails	A	3	0	0	11	40 miles, min. 6s. 2d.	A	.2	0	O 1 over 75 ,,	
Poultry—Living (in crates)	A 2	7	0	0	-	In flocks, 6d. per truck per mile to 100 miles; over	A	0	2	o 1 to 75 ,, o 1 over 75 ,,	
Preserved MeatUp Pumpkins	B A	2	0 0	o		100, 4d.	to Syd.	onl	о у. О	o 1½ to 75 ,, o 1 over 75 ,, o 1½ to 75 ,, o 1 over 75 ,,	
Railway Materials Rags and Materials for making paper (not chemicals).	I	6	0	0	4	less than 50 per cent. copper.	A Mis.		6	o 1½ to 75 ,, o 1 over 75 ,, Less than 33 per cent. of copper. o 1½ to 35 miles.	
Regulus	В		0	o	I ½	containing over 50 per cent.	Ą	2	0	o 1 to 150 ,, o 0\frac{3}{4} to 250 ,, o 0\frac{1}{2} over 250 ,, Containing over 33 per cent. of copper. o 1\frac{1}{4} to 75 miles. o 1 over 75 ,,	
Resin	Mis.	6	6	0		To 35 miles; over 35 miles, 1d.	Mis.	ı	6	o 1½ to 35 miles.	
Salt—Rock and Calcutta	c ·	4	0	0	21/4	Max. £2 108. 5d. per ton.	В	3	o	o olyover 250 ,, o 2	

Marked thus * subject to the following allowances:—To per cent. on the rate per mile for every mile beyond 150; 20 per cent. on the rate per mile for every mile beyond 150; 40 per cent. on the rate per mile for every mile beyond 200.

a A reduction of 20 per cent. on all 1st and 2nd Class goods carried over 340 miles from Sydney.

No. 51—continued. MERCHANDISE Traffic Rates—continued.

,				#:	Rates—continues 1881. UARY 3.	<u> </u>	*1882. <i>а</i> Остовев 4.			
Articles of Traffic.	Class.	mil	5 les.		Exceeding 15 miles.	Class.	mi	ı5 iles.		Exceeding 15 miles.
Salt—Dairy and Meat-curing	D Mis.	5	d. o 6	s. 0	mile. d. 2½ 1¼ to 35 miles; over 35 miles, 1d.	B Mis.	3	d. o 6		mile. d. 2 1½ to 35 miles. 1 to 150 ,, 0¾ to 250 ,,
Sawdust		2	0	0	1½	A	2	o	0	old over 250 ,, Ill to 75 ,, I over 75 ,,
Sewing-Machines Seed Grass	4	12 5	, 0	0	9	unpd.3	9	0	0	9 7
Shale—Kerosene			•	М	om Hartley Siding & littagong to Sydney, 2 per truck.	Mis.	I	6	0 0 0	1 to 35 ,, 1 to 150 ,, 0 to 250 ,, 0 to 250 ,,
Sheepskins Shingles Silk Goods	, B	3	0	٥	•			0	0	2 1½ to 75 miles.
Slate Slabs Slates	4 C	9 12 4	0	0	7 9 2 ¹ / ₄		2	0	0	11 to 75 ,, 1 over ,,
Sleepers—Railway	D	4 7 5	0 0 0	0	21	В	3	0	0	2
Spokes and Shafts—Undressed	A B	3	0		14 For distances over 40 miles, min. 6s. 2d.	A .	2	0	0	118 to 75 ,, 1 over 75 ,,
Stocks	A	2			14 For distances over 40 miles, min. 6s. 2d.	A	2	0	0	1½ to 75 ,, 1 over 75 ,,
Stone undressed—4-ton lots		ı	6	0	1½ to 35 miles; over 35 miles, 1d.	Mis.	1	6	0 0 0	1½ to 35 miles. 1 to 150 ,, 0¾ to 250 ,, 0½ over 250 ,,
Do. carved and Gravestones	D D	5	0	0	5 2½	Mis.	1	6	0 0 0	1½ to 35 ,, 1 to 150 ,, 0½ to 250 ,, 0½ over 250 ,,
Straw (See page 131.) Sugar	2	7	0	0	5 In truck loads (6 tons), 2s. per truck per mile.		•			
Sulphuric Acid Tallow Tar Terra-cotta	I I A	6 6 2	0000	0 0 0	4 4 4 11	B A	-	0	0	1 to 75 ,, I over 75 ,,
Threshing Machines Tiles—Tesselated and Ornamental Tiles, Earthenware	В В	9 5 3	0 0 0	0	7 2½ 	B A		0	0 0	2 18 to 75 ,, 1 over 75 ,,
Timber—Undressed	В	3		For	1½ urdwood, 30 ft. to ton. her than hardwood, 40 ft. to ton. r distances over 40 miles, min. 6s. 2d	· A	2	0	0	13 to 75 ,,
Do. Sawn	A D	5	0	0	1 1 1 2 1	A	X 2	。 5 %		1½ to 75 ,, 1 over 75 ,,
Tin Ore Tin-plates Tin Smelted Tobacco—Colonial Leaf	C C B	4 7 4 3	0 0 0		2 ¹ / ₄ 5 2 ¹ / ₄ 1 ¹ / ₂	B B A	3	0	0 0 0	
Toys in cases Tricycles Turnips Velocipedes Whiting Wire-netting Woolpacks	3 4 A 4 D	9 12 2 12 5 9	0000000	000000	7 9 14 9 2½ 7 4 max. £4 10s. 8d.	 B	-	0	o	1 over 75. "
Zine	2	7	0	0	per ton.	a l	3	0		•
Note—All articles not enumerated above are carried as follows.		9	٥	٥	7					

Marked thus * subject to the following allowances:—Io per cent. on the rate per mile for every mile beyond 150; 40 per cent. on the rate per mile for every mile beyond 250; 40 per cent. on the rate per mile for every mile beyond 250.

a A reduction of 20 per cent. on all 1st and 2nd Class goods carried over 340 miles from Sydney.
† If loose or insecure, D rates.

3 October, 1881-Live Stock Rates and Conditions.

SMALL CONSIGNMENTS.

1 Truck, i.e., 4 Cows or Oxen, or 10 Calves, or 40 Sheep; or 30 Pigs.	1 Truck, i.e., 2 Cows or Oxen, or 5 Calves, or 20 Sheep, or 15 pigs.	Single Cow or Ox.	Sheep or Pigs, when less than 1 Truck.	Calves, when less than \ Truck.
 6d. per mile	4d. per mile:	3d. per mile	½d. each per mile	id. each per mile.
Miṇimum, 10s	Minimum, 7s. 6d	Min., 7s. 6d. each	Min., 1s. 6d. each	Minimum, 2s. each.

When the number of animals or the space occupied exceeds the limit for \(\frac{1}{4}\) or \(\frac{1}{2}\) truck, each one in excess will be charged at the mileage rates enumerated above for single animals until the \(\frac{1}{2}\) or full truck rate, as the case may be, is reached.

.. In ascertaining what portion of a truck is to be charged for, i.e., \(\frac{1}{4}\), \(\frac{1}{4}\), or full truck, regard will be had to the space actually occupied more than to the number of animals; but in no case must the number of animals stated above be exceeded.

Mixed stock will be carried together in the same truck, provided the whole consignment belongs to one person, and the Commissioner is relieved of all responsibility. When mixed stock cannot be loaded together, each kind will be charged for separately.

When the charge per head for Live Stock exceeds that for 1 truck, or when the charge for a part truck exceeds that for a full one, only the lesser amount will be collected.

Buils.

The charge for Bulls is 7d. each per mile; if more than one in a truck, 4½d. each per mile for ½ truck and upwards, Cattle rates. Minimum, 12s. 6d.

VALUABLE RAMS AND EWES.

If less than 1 a truck load, will be charged 2d. each per mile; for 1 a truck and upwards, Sheep rates. Minimum, 5s.

Horses.

See full truck rates. No less charge than for a full truck load will be made for any number.

When Live Stock is returned from Sydney or Homebush to Country Stations, in those neighbourhoods to which Cattle Trucks and Sheep Vans are being sent empty, half the above rates will be charged, provided the owners wait the requirements of the Department, but not otherwise.

Herds, Flocks, &c., when in consignments of not less than one full Truck load.

GREAT SOUTHERN, WESTERN, AND RICHMOND LINES.

CATTLE

Will be conveyed from the undermentioned Stations to Homebush, at the following rates per Truck:-

Darlington Hulong	£ s. d.		£s.d
Coolaman Albury Ettamogah Bowna Gerogery Hanging Rock Wagga Wagga Junee Cootamundra Harden Binalong Bowning Yass	7 17 4 9 2 8 9 1 0 9 0 0 8 16 8	Gunning Breadalbane Goulburn Marulan Moss Vale Bowral Mittagong Picton Dubbo Wellington Orange Blayney Bathurst Wallerawang Mount Victoria	5 1 10 4 13 10 4 6 4 3 16 8 8 2 14 8 8 2 12 18 8 7 6 16 8 8 5 15 5 5 5 5 5 11 4 8 2 12 12 8

Other distances to be charged—For the first 40 miles, 10d. per truck per mile; for every mile exceeding 40 and not exceeding 100, 8d. per truck per mile; for every mile exceeding 100 and not exceeding 200, 6d. per truck per mile; for every mile over 200, 4d. per truck per mile; Minimum charge, 15s. per truck,

Live Stock Rates and Conditions-continued.

SHEEP

Will be conveyed from the undermentioned Stations to Homebush, at the following rates per Truck:-

Stations.	Rate.	Stations.	Rate.
Darlington Hulong Narrandera Coolaman Albury Ettamogah Bowna Gerogery Hanging Rock Wagga Wagga Junee Cootamundra Harden Binalong Bowning Yass	£ s. d. 7 10 5 7 7 6 6 19 4 6 8 8 7 10 8 7 7 5 5 6 13 6 6 6 1 10 5 11 11 5 4 18 9 4 14 1 9	Gunning Breadalbane Goulburn Marulan Moss Vale Bowral Mittagong Picton Dubbo Wellington Orange Blayney Bathurst Wallerawang Mount Victoria	3 13 1 3 5 7 2 12 4 2 9 4 2 7 10 1 15 10 5 19 2 5 10 5 4 13 5 4 6 9

Other distances to be charged—For the first 40 miles, 10d. per truck per mile; for every mile exceeding 100, 6d. per truck per mile; for every mile exceeding 100 and not exceeding 150, 4½d. per truck per mile; for every mile exceeding 150, 4½d. per truck per mile; for every mile exceeding 150 and not exceeding 200, 4d. per truck per mile; for every mile exceeding 200, 3½d. per truck per mile. For single-decked truck, only two-thirds of these rates will be charged. Minimum charge, 15s. per truck.

GREAT NORTHERN LINE.

CATTLE

Will be conveyed between the undermentioned Stations, at the following rates per Truck:-

From	Newcastle.	East Maitland.	West Maitland.	Wollombi Road.	Lochinvar.
Gunnedah Breeza Tamworth Werris Creek Quirindi. Willow-tree Scone Musclebrook	£ s. d. 6 1 4 5 8 4 5 14 4 5 0 10 4 15 4 4 10 4 3 10 8 3 0 0	£ s. d. 5 12 4 4 19 4 4 11 10 4 6 4 4 1 4 2 18 8 2 8 0	£ s. d. 5 11 4 4 5 4 4 4 4 0 4 4 2 17 4 2 6 8	£ s. d. 5 10 4 4 17 4 5 3 4 4 9 10 4 4 4 3 19 4 2 16 0 2 5 4	\$ s. d. 5 8 4 4 15 4 4 7 10 4 2 4 3 17 4 2 13 8

Other distances to be charged—For the first 40 miles, 10d. per truck per mile; for every mile exceeding 100, 8d. per truck per mile; for every mile exceeding 100 and not exceeding 200, 6d. per truck per mile; for every mile over 200, 4d, per truck per mile. Minimum charge, 15s. per truck.

SHEEP

Will be conveyed between the undermentioned Stations at the following rates per Truck:-

Stations from	Newcastle.	East Ņāitlāpd.	West Maitland. Wollombi Road.	Lochinvar.
Funnedah Breeza Famworth Werris Creek Quirindi. Willow-tree Scone Musclebrook	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	£ s. d. 5 4 11 5 4 2 9 3 17 3 1 3 9 4 2 12 4 2	£ s. d. £ s. d. 4 10 1 4 10 1 4 15 5 5 3 16 6 3 15 9 3 12 4 3 11 7 3 8 7 3 7 10 2 11 4 2 10 4 2 3 4 2 2 4	£ s. d. 4 8 9 3 19 5 3 14 3 3 10 1 3 6 4 2 8 4 2 0 4

Other distances to be charged—For the first 40 miles, 10d per truck per mile; for every mile exceeding 40 and not exceeding 100, 6d. per truck per mile; for every mile exceeding 100 and not exceeding 150, 4½d, per truck per mile; for every mile exceeding 150 and not exceeding 200, 4d. per truck per mile; for every mile over 200, 3½d. per truck per mile. For single-decked truck only two-thirds of these rates will be charged. Minimum charge, 15s. per truck.

GREAT SOUTHERN, WESTERN, AND RICHMOND, AND NORTHERN LINES.

HORSES.

The Commissioner will carry Horses in Cattle Trucks if requested to do so, but only under special contract, relieving him of all responsibility. The charge for horses so carried will be the same as for cattle in full truck loads.

Pigs-Same as Cattle. Minimum, 15s.

Under the foregoing Herd and Flock Rates for Cattle, Sheep, Horses, and Pigs, no less charge than for one full truck will be made for each and every truck used.

4th October, 1882.

Mixed stock will be carried together in the same truck, provided the whole consignment belongs to one person, and the Commissioner is relieved of all responsibility. When mixed stock cannot be loaded together each kind will be charged for separately with the following exception:

On Thursdays single animals conveyed to Sydney in the same trucks, although belonging to different owners, will be charged at a proportion of \(\frac{1}{4}\), or full truck rate, plus 25 per cent.; for example, should there be two cows, each owner will be charged half of the \(\frac{1}{4}\) truck rate, plus 25 per cent. and should there be three animals, the owners will be charged the \(\frac{1}{2}\) truck rate equally between them, plus 25 per cent. It is absolutely necessary that each animal be legibly addressed.

When the charge per head for live stock exceeds that for a quarter truck, or when the charge for a part truck on market days exceeds that for a full one, only the lesser amount will be collected.

Herds, Flocks, &c., when in consignments of not less than one full truck load.

GREAT SOUTHERN, WESTERN, AND RICHMOND LINES.

CATTLE

Will be conveyed from the undermentioned Stations to Homebush, at the following rates per Truck:-

Stations.	Rate.	Stations.	Rate.	
Hay Carrathool Darlington Hulong Narrandera Coolaman Albury Ettamogah Bowna Gerogery Hanging Rock Bomen Junee Junction Cootamundra Harden Binalong Bowning	9 14 0 9 2 4 8 19 8 7 17 4 9 2 8 9 1 0 9 0 0 8 16 8 8 3 0 7 15 4 7 9 8 6 18 4 6 10 0	Yass Gunning Breadalbane Goulburn Marulan Moss Vale Bowral Mittagong Picton Dubbo Wellington Orange Blayney Bathurst Capertee Wallerawang Mount Victoria	5 1 10 4 13 10 4 4 0 3 10 8 2 12 0 2 8 0 2 6 0 1 10 0 7 6 8 5 15 4 5 5 4 4 11 4 3 19 4 3 4 8	

Other distances to be charged—For the first 140 miles, 8d. per truck per mile; from 140 to 200 miles, 6d. per truck per mile; every additional mile, 4d.

SHEEP

Will be conveyed from the undermentioned Stations to Homebush, at the following rates per truck :-

Stations.	Rate.	Rate. Stations.	
Hay Carrathool Darlington Hulong Narrandera Coolaman Albury Ettamogah Bowna Gerogery Hanging Rock Bomen Junee Junction Cootamundra Harden Binalong Bowning	8 0 7 7 10 5 7 7 6 4 6 8 6 7 10 8 7 9 3 7 8 4 6 13 6 6 6 9 6 1 10 5 11 11 5 14 7 4 18 9	Yass Gunning Breadalbane Goulburn Marulan Moss Vale Bowral Mittagong Picton Dubbo Wellington Orange Blayney Bathurst Capertee Wallerawang Mount Victoria	£ s. d. 4 11 9 4 4 5 3 18 9 3 13 1 3 5 7 2 12 0 2 8 0 1 10 0 5 19 2 5 10 5 4 13 5 4 6 9 3 17 3 3 10 6 3 1 10 2 6 0

Other distances to be charged—For the first 80 miles, 8d. per truck per mile; from 80 to 100, 6d.; from 100 to 150, 4½d.; and from 150 to 200, 4d. per mile. Every additional mile, 3½d.

GREAT NORTHERN LINE.

CATTLE

Will be conveyed between the undermentioned Stations, at the following rates per truck :-

From	Newcastle.	East Maitland.	West Maitland.	Wollombi Road.	Lochinvar.
Gunnedah Breeza Tamworth Werris Creek Quirindi Willow-tree Scone Muswellbrook	£ s. d. 6 1 4 5 8 4 5 14 4 5 0 10 4 15 4 3 4 0 2 13 4	£ s. d. 5 12 4 4 19 4 5 5 4 4 11 4 4 4 0 3 17 4 2 12 0 2 1 4	£ s. d. 5 11 4 4 18 4 5 4 4 4 10 0 4 2 8 3 16 0 2 10 8 2 0 0	£ s. d. 5 10 4 4 17 4 5 3 4 4 8 8 4 1 4 3 14 8 2 9 4 1 18 8	£ s. d. 5 8 4 4 15 4 5 1 4 4 6 0 3 18 8 3 12 0 2 6 8 1 16 0

Other distances to be charged—For the first 140 miles, 8d. per truck per mile; from 140 to 200 miles, 6d. per truck per mile; évery additional mile, 4d. Minimum charge, 15s. per truck.

STERRE

Will be conveyed between the undermentioned Stations, at the following rates per Truck:-

Stations from	, Newcastle.	East Maitland.	West Maitland.	Wollombi Road.	Lochinvar.
Gunnedah	4 12 9 4 3 9 3 19 10 3 16 1	£ s. d. 4 11 5 4 2 9 8 17 3 8 12 10 8 9 4 2 12 0 2 1 4	£ s. d. 4 10 9 4 2 1 4 6 1 3 16 6 3 12 4 3 8 7 2 10 8 2 0 0	£ s. d. 4 10 1 4 1 4 4 5 5 3 15 9 3 11 7 3 7 10 2 9 0 1 18 8	£ s. d. 4 8 9 3 19 10 4 7 5 3 15 3 3 10 1 3 6 4 2 6 4 1 16 0

Other distances to be charged—For the first 80 miles, 8d. per truck per mile; from 80 to 100 miles, 6d. per truck per mile; from 100 to 150 miles, 4½d. per truck per mile; from 150 to 200 miles 4d. per truck per mile; every additional mile, 3½.

Minimum charge, 15s. per truck.

Rates for Carriage of Wool. 3rd February, 1881. GREAT SOUTHERN RAILWAY.

	To Sydney.		To Sydney.
From Darlington Albury Hulong Ettamogah Bowna Narrandera Gerogery Culcairn Coolaman Yerong Creek Sandy Creek and Hanging Rock	Per bule not over 4 evet. s. d. 10 6 10 3 10 3 10 3 10 0 10 0 9 9 9 6 9 6	From Cootamundra Harden (Murrumburrah) Binalong Bowning Yass Gunning Goulburn Marulan Moss Vale Mittagong Picton	Per bale not over 4 cwt. s. d. 8 6 8 3 8 0 7 9 7 6 7 3 7 0 6 0 5 0
Wagga Wagga	9 0	Menangle	3 0
Junee	9 0	Campbelltown	
Bethungra	8 9	,	
1		<u> </u>	l

GREAT WESTERN RAILWAY.

	To Sydney.	` .	To Sydney.
From Dubbo	10 6 9 0 8 6 7 6	From Brewongle Tarana Wallerawang Bowenfels Penrith Richmond	7 0 6 6 6 3 2 6

GREAT NORTHERN RAILWAY.

			it .	l	To Morpeth.
From Gunnedah	8 6 8 0 7 6 7 0	Per bale not over 4 cwt. s. d. 8 6 8 0 7 6 7 0 6 6 6 3	From Scone Aberdeen Musclebrook Ravensworth Singleton Branxton Maitland	6 0 5 0 4 6 4 0	Per bale not over 4 cwt. s. d. 5 9 5 6 4 6 4 0 3 6 2 6 1 6

Bales over 4 cwt. to be charged 15 per cent. on above charges for every cwt. or portion of cwt. in excess of 4 cwt. Wool in bags and pockets charged actual weight at first class rates.

DUMPED WOOL.

An allowance of 15 per cent. will be made on above rates for all wool properly dumped and hooped with iron, and for all bales not exceeding 250 lbs. in weight.

The rates to washing establishments will be, for distances not exceeding 15 miles, 10d. per bale; exceeding 15 but not exceeding 22 miles, 1s. 1d. per bale. From washing establishments the rates for similar distances will be 1s. and 1s. 3d. per bale respectively.

No. 51-continued.

Rates for Carriage of Wool-continued.

4th October, 1882.

No alteration except the following:-

GREAT SOUTHERN RAILWAY.

	To Sydney.		To Sydney.
From Darlington Hulong	Per bale not over 4 cwt. s. d. 11 0 10 9	From Narrandera Cowabbie	

GREAT WESTERN LINE.

	To Sydney.		To Sydney.
From Nyngan	11 0	From Wellington	Per bale not over 4 cwt. s. d. 10 3 7 3

GREAT NORTHERN RAILWAY.

	To Newcastle.	To Morpeth.		To Newcastle.	To Morpeth.
From Narrabri	Per bale not over 4 cwt. s. d. 10 0 9 3 10 0	Per bale not over 4 cwt. s. d. 9 6 8 9 9 6	From Walcha Road	Per bale not over 4 cwt. s. d. 9 3 9 0	Per bale not over 4 cwt. s. d. 8 9 8 6

Rates for Carriage of Coal.

SOUTH AND WEST LINES.	· northern line.
3 February, 1881. Owners' Trucks.	3 February, 1881. Owner's Trucks.
Under 50 miles, 1d. per ton per mile. Minimum charge, 2/- Over 50 ,, \(\frac{3}{4}d. \) ,, ,, with a terminal charge of 3d. per ton. Minimum charge, 4/3. Lots under 5 tons to be charged as 5 tons, or First-class rates. **Commissioner's Trucks.** First 50 miles, 1\(\frac{1}{2}d. \) per ton per mile. 50 to 150 ,, 1d. ,, ,, 150 ,, 250 ,, \(\frac{3}{4}d. \) ,, ,, Over 250 ,, \(\frac{3}{4}d. \) ,, ,,	Under 7 miles
4 October, 1882. *No alteration except the following:— *Commissioner's Trucks. First 15 miles, 1s. 6d. per ton. 15 to 35 , 1\frac{1}{2}d. , per mile. 35 ,, 150 ,, 1d. , , , , 150 ,, 250 ,, \frac{3}{4}d. ,, , , Over 250 ,, \frac{1}{2}d. ,, , ,	The above rates include the use of cranes and staiths for shipment at Newcastle. **Commissioner's Trucks.** Same as South and West. 4 October, 1882. No alteration except in Commissioner's Trucks, as on South and West.

Hay, Straw, and Chaff per Truck. 3 FEBRUARY, 1881.

										•			.,													
		Hay	•			Straw d Cha						Нау	•			traw Chaff	.					Нау.			Strag	
Not excee	ding—	£s.	d.		£	s.	d.	Not e	xcee	ding—	£	s.	d.		£	s. d	l.	Not e	xceed	ing—	£	s.	d.		£ s.	d.
` 16 mile	8	0 10	0		0	10	0	180	mile	8	-2	17	5		2	10 9) I		miles		4	2	1		3 12	7
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35 ,,		0 18	Ŏ				ō	190	"		3	ō	2			13 2	- 1	305	"		4	4	3	• • • •	3 14	6
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54 ,,		1 5	ŏ		ī		ŏΙ	205	"		3	_	11			16	- 1	320	"		4	7	3	•••	3 17	$\bar{2}$
60 ,,	*****	$\bar{1}$ 6	6		ī	-	ŏΙ	210	"		3	4	9	•••		17 a	. 1	325	"		4	8	4	•••	3 18	ī
70 ,,		1 7	6		ī		6	215	"		3		10			18 3	. 1	330	"		4	9	$\tilde{2}$		3 18	10
80 ,,	1	1 8	9	•••	ī	7	6	220	"		3	-	11	•••		19 2	. 1	335	"		4	10	$\bar{2}$		3 19	9
90 ,,	1	1 12	Ō		ī	8	š	225	"		3	8	0		3	o i		340	"			īĭ	3		4 0	9
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110 ,,		1 17	1		ī	12 1	ا ا	235	"		3	10	2		3	2 0	٠,	350	"			13	2		4 2	5
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135 ,		2 4	9		1	19	6	250	"		3	12	11		3	4 5	.	365	"		4	16	5	*	4 5	4
140 ,		2 6	5		2	1	0	255	"		3	14	0		3	5 5	5	370	"		4	17	3		4 6	ō
145 ,,		2 7	8		2	2	2	260	"		3	15	0	•••	3	6 5	5	375	**		_	18	4	•	4 7	Ō
150 ,,		2 9	3		2	3	6	265	"		3	16	ĺ		3	7 4	,	380	"		4	19	5		4 7	11
155 "		2 10	8		2	4	9	270	"		3	16	11		3	8 (5	385	"		5	0	6		4 8	11
160 ,,	••••	2 12	0	·	2	6	0	275	"		3	18	0		3	9 (390	"		5	ĭ	4	•••	4 9	7
165 ,,		2 13	4		2	7	3	280	"		3	19	1			lo d		395	"		5	2	5		4 10	6
170 ,,	••••	2 14	9	•••	2	8	3	285	,,		4	0	$\tilde{2}$	•••		io 11		400	"		5	3	6		4 11	6
175 ,,		2 16	ĺ		2	9	7	290	"	•••••	4	1	ō			11 8	- 1	_30	,,		•	•	•			J

Smaller quantities charged actual weight at First-class rates.

Hay, Straw, and Chaff per Truck.

4 OCTOBER, 1882.

	Hay.	Straw		Hay.	Straw	Hay.	Straw
37.4	0 - 1	and Chaff.	37.4 32.		and Chaff.		and Chaff.
Not exceeding—	£ s. d.	£ s. d.	Not exceeding-	£ s. d.	£ s. d. Not exceedi		£ s. d.
16 miles	0 10 0	0 10 0	215 miles	2 17 2	2 10 7 365 miles	4 1 7	3 12 1
26 ,,	0 14 0	0 14 0	220 "	2 18 0	2 11 4 370 ,,	4 2 4	3 12 10
35 "	0 17 0	0 17 0	225 ,,	2 18 10	2 12 0 375 ,	4 3 2	3.13 7
41 ,,	0 19 6	0 19 6	230 ,,	2 19 7	2 12 9 380 ,,	44 44 0	3 14 4
46 ,,	1 1 6	1 1 6	235 ,,	3 0 5	2 13 6 385 ,,	4 4 10	3 15 0
54 ,,	1 4 0	1 4 0	240 ,,	3 1 3	2 14 2 390 ",	4 5 7	3 15 9
60 ,,	1 5 6	146	245 ,,	3 2 1	2 14 11 395 ",	4 6 5	3 16 6
70	1 7 0	1 5 6	250 ,,	3 2 10	2.15 7 400 "	4 7 3	3 17 2
80 °	1 8 6	1 7 ŏ	955	3 3 8	9 16 4 405 75	4 8 1	3 17 11
90 "	1 10 0	$\tilde{1}$ $\tilde{7}$ $\tilde{6}$	960	3 4 6	9 17 1 410 "	4 9 10	9 10 7
100 "	1 11 9	1 8 1	DOF	9 5 4	9 17 10 415 "	4 0 9	9 10 4
110	1 14 2	1 9 0	970 "	9 C 1	9 19 7 490	4 10 6	4 0 1
190 "	1 16 7	1 12 5	975	9 6 11	9 10 9 495 "	4 11 4	4 0 1
190 ′′	3 10 0	1 14 6	990	9 7 0	9 10 11 490 "	4 10 1	A 1 C
195 "	9 0 1	1 15 7	995	9 9 77	9 0 7 495	4 19 11	4 9 9
140	0 1 0	1 16 8	900	2 0 1	9 1 4 440 "	4 10 0	4 2 11
145	2 1 6	1 17 9	905	2 10 2	2 9 1 445 "	4 14 7	4 9 8
150 "	2 3 11	1 18 10	900 "	3 11 0	9 9 11 450 "	4 15 4	4 4 4
155 "	2 5 0	1 19 11	905	9 11 10	3 3 8 455	4 16 9	4 5 1
160 "	2 6 1	9 0 0	910	9 19 7	3 4 4 460 "	4 17 0	· 4 5 10
165	2 7 2	$\begin{bmatrix} \bar{2} & \check{1} & \check{9} \end{bmatrix}$	215 "	3 13 5	3 5 0 465	4 17 10	1 6 7
170 · "	2 8 3	ا م م م	290	3 14 3	3 5 9 470 "	4 10 h	4 7 3
175	2 9 4	0 0 0	995	3 15 1	9 6 6 475	4 10 5	4 8 0
180 ~	2 10 5	0 4 77	`aan	3 15 10	2 7 2 490 "	£ 0 2	4 8 8
195	9 11 6	2 5 7	995	9 16 9	9 7 11 485 "	F 1 1	4 9 4
100	0 10 7	0 0 0	940	9 17 6	9 9 7 400 "	£ 1.10	4 10 1
105 "	2 13 8	2 7 6	945	9 10 4	9 0 1 105	5 9 9	4 10 10
900 "	9 14 0	2 8 5	250 "	3 19 1	9 10 0 500 "	5 9 C	4 10 10
905	2 14 9	2 9 2	955 "	3 19 11	3 10 0 300 .,	5 5 6	
210 ,	2 16 4	2 9 10	360 ,,	4 0 9	3-11 5		

Smaller quantities charged actual weight at First-class rates.

The charge per truck for distances not shown in this table will be one-fifth of the difference in rate between every 5 miles.

Special Class A Traffic.

In Truck Loads (not exceeding 6 Tons).
3 February, 1881.

		•	o reducant, 1001.		
	Rate per Truck.		Rate per Truck. £ s. d.	Rate per Truck. £ s. d.	Rate per Truck.
	£ s. d.				£ s. d.
10 0 miles	3 5 6	180 miles	4 12 8 260 miles	6 0 6 340 miles	7 3 2
105 ,,	3 6 0	185 ,,	4 14 6 265 ,,	6 1 11 345 ,,	7 4 7
110 ,,	3 7 9	190 "	4 16 3 270 ,	6 3 4 350 ,,	7 6 0
115 "	3 9 6	195 ,,		6 4 9 355 ,,	7 7 3
120 ,,	3 11 3	200 ,,		6 6 2 360 "	7 8 6
125 ,,	3 13 0	205' ,, '	5 1 8 285 ,,	6 7 7 365 ,,	7 9 9
130 ,,	3 14 9	210 "	5 3 5 290 ,,	6 9 0 370 ,,	7 11 0
135 ,,	3 16 7	215 ,,	5 5 3 295 ,,	6 10 5 375 ,,	7 12 3
140 ,,	3 18 4	220 ,,	5 7 0 300 ,,	6 11 10 380 ,,	7 13 6
145 ,,	4 0 2	225 ,,	5 8 10 305 ,,	6 13 3 385 ,,	7 14 9
150 "	4 1 11	230 ,,	5 10 7 310 ,,	6 14 8 390 ,,	7 16 0
155 ,,	4 3 9	235 ,,	5 12 5 315 ,,	6 16 1 395 ,,	7 17 3
160 ,,	4 5 6	240 ,,	5 14 2 320 ,	6 17 6 400 ,,	7 18 4
165 ,,	4 7 4	245 ,,	5 15 11 325 ,,	6 18 11	
170 ,	4 9 1	250 "	5 17 8 330 ,,	7 0 4	
175	4 10 11	255 ,,	5 19 1 335	7 1 9	

Trucks marked to carry more than 6 tons will be charged pro rata,

No. 51—continued.

Special Class A Traffic.

In Truck Loads (not exceeding 6 Tons).

4 OCTOBER, 1882.

	Rate per Truck.	Ras	te per Truck.		Rate per Tru		Rate per Truck.
	£ s. d.		£ s. d.		£ s. d	. 1	£ s. d.
$100 \mathrm{\ miles}$	2 18 6	205 miles	4 .8 10	310 miles	5 15 (415 miles	6 17 0
105 "	3 0 0	210 ,,	4 10 3	315 "	5 16 2	420 ,,	6 18 0
110 "	3 1 5	215 ,,	4 11 8	320 ,,	5 17 8		6 19 0
115 "	3 2 10	220 ,,	4 13 1	325 ,,	5 18 8	430 ,,	7 0 0
120 ,,	3 4 3	225 ,,	4 14 5	330 ,,	5 19	435 ,,	7 1 0
125 ,,	3 5 8	230 ,,	4 15 11	335 ,,	6 0 8	440 ,	7 2 0
130 "	3 7 2	235 ,,	4 17 4	340 ,	6 1 9	445 ,,	7 3 0
135 "	3 8 7	240 " ·	.4 18 9	345 ,	6 2 1	450 ,,	7 4 0
140 ,,	3 10 0	245 ,,	5 0 2	350 ,;	· 6 • 4 (455 ,,	7 5 0
145 ,,	3 11 5	250 ,,	5 1 6	355 ,,	6 5 (460 ,,	7 6 0
150 "	3 13 0	255 ,,	5 2 8	360 ,,	6 6 0	465 ,,	7 7 0
155 "	3 14 6	260 "	5 3 9	365 ,,	6 7 (470 ,,	7 8 0
160 "	3 15 11	265 ,, 	5 4 11	370 ,,	6 8 (475 ,,	7 9 0
165 "	3 17 4	270 ,,	5 6 0	375 ,	6 9 (7 10 0
170 ',,	3 18 9	275 ,,	5 7 2	380 ,,	6 10 (485 ,,	7 11 0
175 ,	4 0 2	280 "	5 8 3	385 ,,	6 11 (7 12 0
180 "	4 1 8	285 ,,	5 9 5	390 ,,	6 12 (495 ,,	7 13 0
185 "	4.3 1	290 "	5 10 6	395 ,,	6 13 (500 ,	7 14 0
190.,,	4 4 6	295 ,,	5 11 8	400 ,,	6 14 () "	•
195 "	4 5 11	300 ,,	5 12 9	405 ,,	6 15 ()	
200 "	4 7 4	305 ,, '	5 13 11	410 ,,	6 16 () [

Any quantity over 6 tons in one truck will be charged pro rata.

The charge per truck for distances not shown in this table will be one-fifth of the distance in rate between every 5 miles.

Miscellaneous in Truck Loads.

(Not exceeding 6 Tons.)

4 OCTOBER, 1882.

	Rate per Truc	k.	Ra	te per Truck.)	•	Ra	te per Truck.		Rate per Truck.
	£ s. d.			£ s. d.			£ s. d.		£ s. d.
$120 \mathrm{\ miles}$	2 17 10	· 220 miles		4 3 10	320 miles		5 5 7	420 miles	6 4 3
	······ 2 19 2	225 ,,		4 5 0	325 ,,		5 6 7	425 ,,	6 5 2
130 ,,	3 0 6	230 ,,		4 6 4	330 (,		5 7 7	490 "	6 6 0
135 ,	3 1 9	995	*****	4 7 8	995 "		5 8 7	495 "	C C 11
140 " '	3 3 0	940 "		4 8 11	340 .,		5 9 7	440	C 7 10
145 ,,			• • • • • •						,,,,,,,,
	3 4 4	245 ,,	• • • • • •	4 10 2	345 ,,		5 10 8	445 ,,	6 8 9
150 ,,	3 5 9	250 ,,		4 11 5	350 ,,		5 11 8	450 ,,	6 9 8
15 5 ,,	3 7 1	255 ,,		4 12 5	355 ,		5 12 7	455 ,,	6 10 7
160 ,,	: 3 8 4	260 ,,		4 13 5	360 ,,		5 13 5	460 ,,	6 11 5
165 ,,	3 9 8	265 ,,		4 14 5	365 ,,		5 14 4	465 ,,	6 12 4
170.,,	3 10 11	270 ,,		4 15 5	370 ,		5 15 3	470 "	6 13 3
175 ,,	3 12 2	275 ,,		4 16 6	975		5 16 2	475	6 14 2
100 "	3 13 6	990		4.17 6	380 ,,		5 17. 0	480	C 15 A
185 ,,						• • • • • •			6 15 0
	3 14 10	285 ,,	• • • • • •	4 18 6	385 ,,		5 17 11	485 ,,	6 15 11
190 ' ,,	3 16 1	290 ,,		4 19 6	390 ,		5 18 10	490 ,,	6 16 10
1 95 ,,	3 17 4	295 ,		5 0 6	395 ,,		5 19 9	495 ,,	6 17 9
200 "	3 18 8	300 ,,	•••	5 1 6	400		6 0 8	KAA " .	6 10 0
205	4 0 0	205 "		5 2 6	405 "		6 1 7	300 ,,	6 16 6
210 "	4 1 0				,,	• • • • • •	1		•
		310 ,,	• • • • • •	5 3 6	410 ,,		6 2 5		
215 ,,	4 2 6	315 "		5 4 6	415 ,,		6 3 4		

The charge per truck for distances not shown in this table will be one-fifth of the difference in rate between every 5 miles.

4 October, 1882-Parcel Rates.

			JO1, 1000	1,001 100				•
Miles.	3 lbs. and -under.	Over 3 lbs. to 7 lbs.	Over 7 lbs. to 14 lbs.	Over 14 lbs. to 28 lbs.	Over 28 lbs. to 56 lbs.	Over 56 lbs. to 84 lbs.	Over 84 lbs. to 112 lbs.	Every 28 lbs. or part thereof.
Distances not over— 15 30 45 60 75 90 105 120 135 150 165 180 195 210 225 240 255 270	s. d. 0 3 0 3 0 3 0 4 0 5 0 6 0 6 0 7 0 8 0 9 0 10 0 11 1 0 1 1 1 1 2 1 3	s. d. 0 4 0 5 0 6 0 8 0 9 0 11 1 0 1 2 1 3 1 5 6 1 8 1 9 1 11 2 0 2 2 4 2 6	s. d. 0 6 0 7 0 9 0 11 1 2 1 4 1 6 1 8 1 11 2 1 2 3 2 5 2 8 2 10 3 0 3 2 3 4 3 6	s. d. 0 8 0 9 1 0 1 3 1 6 1 9 2 0 2 3 2 6 2 9 3 0 3 6 3 9 4 0 4 3 4 6 4 9	s. d. 0 10 0 11 1 3 1 7 1 11 2 2 2 6 2 10 3 2 3 5 3 9 4 1 4 5 4 8 5 0 0 5 4 8 6 0 0	s. d. 1 0 1 2 1 6 1 11 2 3 2 8 3 0 3 5 3 9 4 2 4 6 4 11 5 8 6 0 6 5 6 10 7 3	s. d. 1 2 1 4 1 9 2 2 8 3 5 4 6 6 0 6 5 6 10 7 3 7 6 8 0 8 5 8 10	
285 300 315 And respectively for every additional, or part of additional, 15 miles	1 6	2 8 2 10 3 0	3 8 3 10 4 0	5 0 5 3 5 6	6 4 6 8 7 0	7 8 8 1 8 6	9 3 9 8 10 1	2 3 2 4 2 5

No. 51-continued.

Parcels Rates-continued.

Sce general regulations relating to insured parcels.

Fresh meat, fish, poultry (dead), dairy produce, eggs, fruit, vegetables, ice, and game, under 1 cwt., 25 per cent. reduction on parcel rates; minimum charge, 3d.

Musical instruments, packed in cases, 25 per cent. added to above rates.

Pictures in frames, packed or unpacked, double rates. Mirrors, double rates.

Furniture and sewing-machines, packed in cases, ordinary rates, but when unpacked double rates will be charged.

Bath chairs, perambulators, velocipedes, and bicyles, requiring a carriage truck for their conveyance, will be charged as for a two-wheeled carriage—see page 39. Bath chairs and perambulators (adults) carried in Break Vans will be charged double the rate for children's perambulators.

Corpses. 1s. per mile: minimum charge, 5s.

Corpses, 1s. per mile; minimum charge, 5s.

Newspaper parcels, one-quarter parcels rates; minimum charge, 3d.

Passengers' excess luggage, parcel rates.

Commercial travellers' excess luggage, parcels rates on down journey and free on up journey, on production of Railway receipts certifying that full trainage has been paid on down journey.

Gunpowder and other explosives will not be conveyed by Passenger Trains.

Perambulators (children's) and velocipedes will be conveyed in Guard's Vans, at the following rates:

When conveyed as passengers' luggage—

Not exceeding 125 miles Not exceeding 15 miles ... 150 200 ,, 50 6 250 2 100 300 When conveyed as parcels 50 per cent. additional will be charged.

Rates for conveyance of Library Exchanges.

Books forwarded for exchange to and from subscribers to recognized Circulating Libraries only will be carried at one fourth parcels rates, under the following conditions, viz.:—

1. The sender's name must be legibly inscribed on each parcel.

2. Each parcel must be open at both ends.

3. Each parcel must be declared on the consignment-note to contain books only.

Gold Dust and Bullion, and Gold and Silver Coin.

The Commissioner for Railways will not be responsible for the safe conveyance of Gold Dust and Bullion, Bank-notes and Bills, Orders, Notes, and Sccuritics for the payment of Money, and Gold and Silver Coin, or any of the other articles mentioned above, as the following charges are made, and the Gold Dust and Bullion and Coin carried, on condition of its being in charge of owners and at their risk.

	Distance	Distance	Distance	Distance	Distance	Distance
	not over	not over	not over	not over	not over	not over
	55 miles.	100 miles.	150 miles.	200 miles.	250 miles.	350 miles.
Gold Dust and Bullion, per 100 ozs	0 6	s. d. 3 6 0 10 1 9	s. d. 4 3 1 3 2 6	s. A. 5 0 1 8 3 3	s. d. 5 6 2 0 3 6	s. d. 6 0 2 3 3 9

Fractions over 100 and under 50 will not be charged, but fractions of 50 and over will be charged as 100.

If conveyed at Commissioner's risk the following Insurance Rates will be charged in addition

1 to 100 r	ailes	1s. 6d. per cent.	on declared va
101 to 200	do	1s. 9d.	· do.
	do		do.
301 to 400	do	2s. 3d.	do.
	do.		do.

No. 52.

Comparative Statement of the Rates charged for Goods in New South Wales, Victoria, Queensland, and South Australia, 31st December, 1882.

Articles of Traffic.	New Son	New South Wales.			Victoria	.	- 2	Q	ueenslan	ıd.	South A	ustrali a	
3.1.0.0	Class.	50 miles.	150 miles.	Class.	50 miles.		150 miles.	Class.	50 miles.	150 miles.	Class.	50 miles.	150 miles.
Acids (in cases and carboys)	4	s. d. 38 3	s. d. 109 6	4	s. d. 58 0	s. 175		Gunpow- Cases	s. d.	s. d. 120 0	4	s. d. 39 ,6	s. d.
Aerated Waters	2	21 7	61 2	Miscellaneous	13 6	38	6	der Rate Carboys	30 3	240 0 104 0	1	14 6	33 11
Agricultural Machines	3	29 5	84 10	· 4	. 29 0	87	6	1	20 6	69 0	1½d. to 1s. 4d. 1	per mile a of machin	
Ale and Porter (in bulk)	3	29 5	84 10	∫ Miscellaneous	13 6	38		1	20 6	69 0	1	14 6	38 11
Ammunition	4	38 3	109 6	In cases 3	25 0 29 0	75 87	0 } 6	Gunpowder Rate		120 - 0			
Bags	В	8 10	24 8	1	16 6	50	0	2 .	30 3	104 0	1	14 6	38 11
Bark (in sheets, bundles, or bags)	A	5 4	13 6	fin truck loads, Special in less than truck loads, Miscellaneous.	7 6	20 38		Agricultural 1	12 3	39 6	{ Loose 2	14 6 20 9	38 11 57 4
Battens	A plus 25 %	6 8	16 11	Soft wood 1	13 6 16 6	50	,	Timber Rates	12 6	37 6	1	14 6	38 11
Beet-root	A.	5 4	13 6	Agricultural	5 6	15	0	Agricultural 2	9 0	24 8	A	8 4	17 9
Bicycles	4	38 3	109 6	4	58 0	175	0	2	30 3	104 0	4	39 6	112 8
Boards	A plus 50 %	8 0	20 3	1	16 6	50	0 30 do. do.	Timber rates	12 6	37 6	1	14 6	38 11
Boats	2, ,,	21 7	61 2	6d. per truck	'	1	imum 20s.	2	30 3	104 0	1 60 cub. ft.	14 6	38 11
Boilers	2	21 7	61 2	4	29 0	87	6	2	30 3	104 0	not ex. 2 tons 1		38 11
Bones	_ A	5 4	13 6	Special	7 6	20		Excep.	7 6	22 6	ex. 2 tons 2 Special	20 9	57 4 31 3
Bottles (empty, in cases and crates)	В	8 10	24 8	Miscellaneous	13 6	38	6	1	20 6	69 0	Loose 1 Special	14 6 10 5	38 11
Bran	A	5 4	13 6	Agricultural	5 6	15	0	Agricultural 2	9 0	24 8	A	8 4	.17 9
Bricks-	M	4 10	12 6	Special	7 6	20	_	Excep.	7 6	22 6	Special .	10 5	31 3
Cabbages	A	5 4	13 6	Miscellaneous	13 6			Agricultural 2	9 0	24 8	A	8 4	17 .9
Candied Fruits. to Sydney	. В	8 10	24 8	3	25 0.	75	0	Agricultural 2	30 3	104 0	2	20 9	57 4
Carpentry	3	29 5	84 10	. 4	29 0	87	6	2	30 3	104 0	2	20 9	57 4
Carrots				_				1					17 9
Cases (new, empty)	A B	5 4 8 10	13 6 24 8	Agricultural ,	5 6 21 0	15 62		Agricultural 2	9 0	24 8 104 0	A .	8 4 27 0	75 9
Casks do	В	8 10	24 8	. - 2	21 0	62		2	30 3	104 0	3	27 0	75 9
Cement	. B	8 10	24 8	1	16 6	50		Special	15 0	46 8	1	14 6	38 11
Chaff (pressed)	See page 142			Special	7 6	20	0	Agricultural 2	9 0	24 8	Special (4-ton lots)	10 5	31 3

					. ~							_		_						
	Charcoal (in bags)	B ·	8 10	24 8	Special .	7	3 2	0 ()	1.	20	6	69	0	•	•2	. 20	9	57	7 4
	Chicory Root	, A	5 4	13 6	Agric.	5	5 1	5 (Agricultural 2	9	. 0	24	,8		Not	nam	ed		
	Clay	Miscellaneous	4 10	12 6	Special	7	5 2	0 (Excep.	-	6	l	6		Excep. (5 ton lots)	1	. 3	18	8 9
	Coal	Commisnr's Trucks Owner's Trucks	4 10 4 2	12 6 8 8	} · Special	7	3 2	0 0		Government Trucks Owner's Trucks	4 3		10 7		}	Special	10	5	3.	1 3
	Coke (in bags)	В	8 10	24 8	Miscellaneous	13	3	8 €	3					••.	•	2	20	9	5'	7 4
	Do	A	5 4	13 6		N.	ot na	med		Excep.	7	6	22	6						
	Colonial Wine	В,	8 10	24 8	Bulk misc. Cases 2 up	13 (21 (8 6		. 2	30	3	104	0	.{	In bottles 3 In bulk 2	27 20			5 9 7 4
	Copper ore	Miscellaneous	4 10	12 6	Special	7	- 1	0 0	•	2	30	3	104	0	Ì	Special (5 ton lots)		0		84
	Do (Smelted)	В	8 10	24 8	Upjourney misc.	13 (25 (2	-		39	2 1	40 mile	1	14	6	38	8 11
	Drain Pipes	A . •	5 4	13 6	Special	1		0 0	•	Excep.	7	6	22	6		Special	10	5	31	1. 3
	Dairy produce	2	21 7	61 2	Cheese in cases 1 Butter, &c. 2	16 21	5 5	0 0		Agricultural 1	12	3	39	6		2	20	9	57	7 4
	Dynamite (in casks, packed in secure bags)	Excep.	50 0	150 0	4	29	•		•	Gunpowder rate			120	0						
	Feathers	3	29 5	84 10	4	29 () 8	7 6	;	. 21	30	3	104	0		4	7 9	0	225	5 4
	Felloes—undressed	A	5 4	13 6	Firewood	4 2	2 1	1 3	;	Timber rates	12	6	37	6		1	14	6	38	8 11
	Fireclay Blocks	A	' 5 4	13 6	1	16	5 5	0 0	,	Excep.	8	4	25	0		Special	10	5	31	1 3
	Firewood	Miscellaneous	4 10	12 6	Firewood	4 2	2 1	1 3	3	Timber rates	4	2	12	6	{	Special (Between 1 April and 31 Oct., per truck)	10 29			1 3 8 0
	Fireworks	4	38 3	109 -6	4	29 (8	7 6	;	Gunpowder rate	•••		240	0		or Occ., per truck)	۔ ا	Ū		, ,
	Fish—fresh or shell (quantities not less than 2 cwt.)	 Miscellaneous	12 6	37 6	$\begin{cases} 2\\ 3 \end{cases}$	21 (25 (Fresh Dried	Excep.	12 20		37 69	6 0		2 Preserved 1	. 20 14			7 4 8 11
	:	Billoonanoous		0, 0	(ž	21	6	2 6	In brine	I From	20	6	69		}	A	8	_		7 9
	Flour	A	5 4	. 13 6	Agricultural	5 (3 1	5 C	, .{	From Colonial wheat. Excep.	8	4	25	0		·	·			
	Flower-pots	В	8 10	24 8	, 3	25 (7	5 0	•	2	30	3	104	0	•	3	27	0	75	5 9
	Fruit	A	5 4	13 6	M iscellaneous	13 (3 3	8 6	}	Agricultural 1	12	3	39	6		` A	8	4	17	79
	Furniture	4	38 3	109 6	4	29 (8	7 6	;	2	30	3	104	0		4,	39	6	112	2 8
,	Do. (in cases)	3	29 5	84 10	3	25 (7	5 0	,	2	. 30	3	104	0		3	27	0	75	5 9
	Garden Produce	. A .	5 4	13 6	Special	7 (20	0 0)	Agricultural 2	9	0	24	8		A	8	4	17	7 9
	Glue pieces	` B	8 10	24 8	, 2	21 (62	2 6	, .	2	30	3	104	0	:	2	20	9	57	7 4
٠	Do. (wet)	· A	5 4	13 6															۰	٥
	Grain	A .	5 4	13 6	Agricultural	5 6	15	5 0)	Agricultural 2	9	0	24	8		A	8	4	17	7 9
	Green Fodder	` `A	5 4	13 6	Not mentioned	•••••	\ \ ··	••••	.	Agricultural 2	9	0	24	8		A	8	4	17	7 9
	Guano and Artificial Manures	A	5 4	13 6	Artificial Manures (Col.) Agricultural.	5 6	15	5 0	, .	Excep.	7	6	22	6		Special	10	5	31	1 3
	Gunpowder (in casks)	Excep.	50 0	150 0	4	29 (82	7 6	i	Gunpowder rate			120	0						4
	Hardware	3	29 5	84 10	3 .	25 (1 .	5 0		2	30	3	104			3 (27		1	5 9
	Hats	4	38 3	109 6	In cases 4	·58 (178	5 0	'	2	30	3	104	0		· 4 ·	79	0	225	5 4

			. *.	No.	52—cont	inued.	
Articles of Traffic.	New Son	uth Wal	es.	·	Victoria	•	
·	Class.	50 miles.	150 miles.	Class.	50 miles.	150 miles.	Class.
	•	s. d.	s. d.		s. d.	s. d.	
(ay	See p	page 142.		s	ee page 14	2.	Agricultural 2
ides—(Green and Wet Salted)	. A B	5 4 8 10	13 6 24 8	} Miscellaneous	13 6	38 6	Tied Special
oofs	Α .	5 4	13 . 6	Miscellaneous	13 6	38 6	From

	Articles of Traffic.	New Son	uth Wal	es.		Victoria	,.		Q	ueenslai	ıd.	South A	ustralia.	
		Class.	50 miles.	150 miles.	Class.	50 miles.		150 miles.	Class.	50 miles.	150 miles	Class.	50 miles.	150 miles.
			s. d.	s. d.	•	s. d.	8.	d.		s. d.	s. d.	•	e. d.	ś. d.
-	Нау	. See I	page 142 .			See page 14	2.		Agricultural 2	9 0	24 8	Special	10 5	31 3
	Hides—(Green and Wet Salted) Do. Dry	В	5 4 8 10	13 6 24 8	Miscellaneous	13 6	38	6	Tied Special	15 0	46 8	Bales Special Loose 1	10 5 14 6	31 3 38 11
	Hoofs	A	5 4	13 · 6	Miscellaneous	13 6	38	6	Excep.	7 6	22 6	Special 1	10 5 14 6	31 3 38 11
	Horns	A .	5 4	13 6	Miscellaneous	13 6	38	6	Excep.	7 6	22 6	Special 1	10 5 14 6	31 3 38 11
	Iron—Bar, Rod, Angle, and T				(Miscellaneous	13 6	38		1	20 6	69 0	1	14 6	38 11
	Do. Boiler-plate or Sheet	2 .}	21 7	61 2	Sheet 2 Plate Miscell.	21 0 13 6		6) 6}	1	20 6	69 0	1	14 6	38 11
1.	Do. Castings (if over 3 tons, owner's risk only)	.2			1 .	16 6	50 .	0	1	20 6	69 0	in cases 1 Loose 2	14 6 20 9	38 11 57 4
	Do. Corrugated (in cases)	1	17 8	49 4	2	21 0	62	6 .	1	20 6	69 0	Loose 3	27 0 14 6	75 9 38 11
ļ	Do. Girders	} 2	21 7	61 2	3	25 0	75	0 .	1	20 6	69 0	in cases 1	14 6	38 11
ł	Do. Tanks-Galvanized (160 feet to ton)	} . 2	21 /	01 2	\{ 4	29 0	87	6	2	30 3	104 0	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	14 6	38 11
	Do. Tanks (Malt, Square, and Empty)	3	29 5	84 10	. 4	29 0	87	6	2	30 3	104 0	1	14 6	38 11
1	Do. Wire (in bundles) per truck, max. 18 ton	1	17 8	49 4	1	16 6	50	0	Special	15 0	46 8	Fencing Special	10 5 20 9	31 3 57 4
	Do. Wheels and Axles (Railway)	} 2	21 7	61 2	S 2	21 0		6	2	30 3	104 0	Wheels 2 Axles 1	14 6	38 11
. [Do. Nails)	•	-	2	21 0	62	6			•••••••••••••••••••••••••••••••••••••••	1	14 6	38 11
	Manufactory)	Miscellancous	4 10	12 6	No	t mention	ed.	•	Not	mentio	n ed.	Not		
	Do. Pig and Scrap	M	4 10	12 6	Special	7 6	20	0	Excep.	7 .6	22 6	{ Pig 1 Scrap Special	14 6 10 5	38 11 31 3
	Ironmongery	3 .	29 5	84 10	3	25 0	75	0 ,	2	30 3	104 0	Cases 1 Loose 3	14 6 27 0	38 11 75 9
	Ironstone	Miscellaneous	4 10	12 6	Special	7 6	20	0			,			/.
	Jams	(to Sydney) B	8 10	24 8	· 3	25 0	75	0 .	2	30 3	104 0	1	14 6	38 11
	Joinery	3	29 5	84. 10	4	29 0	87	6	2	80 3	104 0	2	20 9	5 7 4
	Kerosene Oil	(to Sydney) 1	17 8	49 4	3	25 0	75	0	2	30 3	104 0	2	20 9	57 4
	Lamps—(Street, Door, or Hall)		29 5	84 10	Loose 4 in cases	58 0 29 0	175 87	0 } 6 }	. 2	30 3	104 0	4	39 6	112 8
	Laths	A	5 4	- 13 6	2	21 0	62	6	Timber	12 6	37 6	1	14 6	38 11
İ	Lead (Pig)	} 2	21 7	61 .2	$\left\{\begin{array}{cc} 2\\ 3 \end{array}\right.$	21 0 25 0	.62 75	6 0	Special 2	15 0 30 3		1 2	14 6 20 9	38 11 57 4
1	Leather (in bales or secured bundles)		17 8	49 4	Fancy 4 Miscellaneous	29 0 13 6	87		2	30 3		1	14 6	38 11
}	Do. (loose)		21 7	61 2	(miscellaneous	13 6		••••••	l		1			J

]	Lime	A	5 4	13 6	Special For manure, ag.	7 6 5 6	20 15	0 }	Excep.	76	22	6		Special	10	5	31 3	;
	Limestone	Mis.	4 10	12 6	Not	named.	10	0)	Excep.	76	22	6		Special	10	5	31 3	,
	Lithofracteur	Except	50 0	150 0	4.	29 0	87	6	Gunpowder		120	0			l			
	Lucerne Seeds	. `1	17 8	49 4.	2	21 0	62	6	Agric. 1	12 3	39	6			l			
	Machinery (of all kinds)	3 -	29 5	84 10	heavy 2	21 0	62	6	1	20 6	69	0		{ 2 Unspecified }	20	9	57 4	
	Malt	1	17 8	49 4	Mis.	13 6	38	6 Up jour.	1 1	20 6	69	0		1	14	6	38 11	
စ္	Do. (in tanks)	2	21 7	61 2	4	29 0	87	6	1	20 6	69	0		1	14	- 1	38 11	
٦	Mangold Wurzel	A	5 4	13 6	Agric.	5 6	15	0	Agric. 2	9 0	24	8		A	8	4	17 9	,
2.	Manure (loose)	Mis.	4 10	12 6	· Agric.	5 6	15	0 .	Excep.	7 6	22	6		Special	10	5	31 3	;
	Do. (artificial)	A	54 ,	13 6	Agric.	5 6	15	0	Excep.	76	22	6		Special	10	5	31 3	;
	Marble (undressed)	Mis.	4 10	12 6	Special	76	20	0	, Special	15 0	46			2	20		57 11	
	Meal	A	5 4	13 6	Oat, 2 Pease & Maize, Sp.	$\begin{array}{ccc} 21 & 0 \\ 7 & 6 \end{array}$	62 20	6 0	Agric. 2	9 0	24	8	•	A	8	· 4	31 3	'
	Measurement Goods, 80 cub. feet to ton	1 '	17 8	49 4	Not	named.	-		Not	named.				Not	name	ed.		
	Millinery	4	38 3	109 6	4.	58 0	175	0	2	30 3	104	0		4	39	6	112 8	3
ŀ	Muriate of Lime	1	17 8	49 4	Not	named.			2	30 3	104	0		1	14	6	38 11	.
	Musical Instruments	4.	38 3	109 6	4	29 0	87	6 ,	2	30 3	104	0	•	4	39	6	112 8	3
- 1	Naphtha	4.	38 3	109 6	. 4	29 0	87	6	Gunpowder		240	0	٠.					1
	Offal	Mis.	4 10	12 6	Not	named.		•	Excep.	7 6	22	6	•	Special.	10	5	31 3	3
	Oil-cake	В	8 10	24 8	1	16 6	50	0	2	30 3	104	0	*	1	14	6	38 11	١
	Opium	. 4.	38 3	109 6	4.	58 0	175	o ,	2	30 3	104	0		4	39	6	112 .8	3
	Ores (crude)	Mis.	4 10	12 6	Special	7 6	20	0	Not	named.				Special (5-ton lots)	9	0	18 4	Ŀ
	Paintings and Engravings	:	38 3	109 6	loose 4 in cases 4	29 0	175 87	0 6.	} 2	30 3	104	0		4	39	6	112 8	3
,	Palings (undressed)		5 4	13 6	Firewood	4 2	11	3	Timber	8 4	25	0		1	14	6	38 11	1
	Paper Do	B (Under 2	8 10 21 7	24 8 61 2	2	21 0	62	6	. 2	30 3	104	0		2	20	9	57 4	F
	Papier Mâché Goods	1 ton) 3	29 5	84 10	4	29 0	87	6	2	30 3	104	0		4	39	6	112 8	3
- 1	Perambulators	4	38 3	109 6	{ 4 ·	29 0 58 0	175	6 bundles 0 loose	2	30 3	104	0		4	39	6	112 8	3
	Perfumery	3	29 5	84 10	4	29 0	87	6	2	30 3	104	0		4.	39	6	112 8	3
	Picture-frames	4	38 3	109 6	4	58 0	175	0 .	2	30 3	104	0		4	79	0	225 4	Ł
1	Pier Glasses and Mirrors	4	38 3	109 6	4	29 0	87	6	2	30 3	104	0		4	39	6	112 8	3
	Pipes (Iron) from the Manufactory	Mis.	4 10	12 6	1	16 6	50	0	1 .	20 6	69	0		1	14	6	38 11	١
	Pitch	1	17 8	49 4	. 1	16 6	50	0	1	20 6	69	0		1	14	6	38 11	ı [
	Plants (in pots and cases)	3	29 5	84 10	3	25 0	75	0	' Agric. 1	12 3	39	6		4	39	6	112 8	·
	Plate-glass	4	38 3	109 6	4.	29 0	87	6	2	30 3	104	0		Window 3	27 39	0 6	75 9 112 8	
	Plated Goods	3	29 5	84 10	4	29 0	.87	6	2	30 3	104	0		4	39	6	112 8	
	Pollard	A	5 4	13 6	Agric.	5 6	. 15	0 .	Agric. 2	9 0	24	8		A	8	4	17 9	,
	Portable Engines	3	29 5	84 10	Mis.	13 6	38	6		25 0	75	0		2	20	9	57 4	6
	Posts and Rails (undressed)	A	5 4	13 6	Firewood	4 2	11		Timber	8 4	25	0		Special	10	5	31 3	;
	Potatoes	A	5 4	13 6	Agric.	5 6	15	, 0	Agric. 2	9 . 0	24	8		A	8	4	17 9	,
•		<u>'</u>	!	'		1			<u> </u>		1							<u> </u>

. <u>t</u>

No. 52-continued.

Articles of Traffic.	New So	outh Wa	les.		Victoria	70	9	ueensland.	South A	Australia	a. '
mades of Traine.	Class.	50 miles.	150 miles.	Class.	50 miles.	150 miles.	Class.	50 miles. 150 miles.	Class.	50 miles.	150 miles.
Poultry (living) in crates Do (in flocks) in single-decked trucks	. 2 { 6d. per mile { 4d. ,,		s. d. 61 2 miles.	4.	s. d. 29 0	s. d. 87 6	Agric. 1	s. d. s. d. 12 3 39 6	4	s. d. 39 6	s. d. 112 8
Preserved Meat	(To Sydney) A	over ,, 5 4	"3 6	Miscellaneous	13 6	38 6		Not named.	1	14 6	38 11
Quicksilver	1	17 8	49 4	3	25 0	75 0	2	30 3 104 0	3	27 0	75 9
Rags and Materials for making Paper (not chemical)	} A	5 4	13 6	{ Rags—Miscel. { Rope—Special	13 6 7 6	38 6 20 0 }	Excep.	7 6 22 6	1	14 6	38 11
Railway Materials	1	17 8	49 4	Miscellaneous	13 6	38 6	Excep.	7 6 22 6	1	14 6	38 11
Regulus (with more than 33 per cent. of copper) Do. (with less than 33 per cent. of copper)	A Miscellaneous	5 4 4 10	13 6 12 6	}	Not	named.		Not named.	Special (5 ton lots)	·9 0	18 4
Resin	1	17 8	49 4	1	16 6	50 0	. 2	30 3 104 0	1	14 6	 38 11
Road Metal	, Miscellaneous	4 10	12. 6	In trucks	4 2	11 3	Excep.	7 6 22 6	Excep.	6 3	18 9
Salt—Rock and Calcutta—Lick Blocks	В	8 10	24 8	Miscellaneous	13 6	38 6	Special	15 0 46 8	Special	10 5	31 3
Do. Dairy and Meat-curing	В	8 10	24 8	1	16 6	50 0	Special	15 0 46 8	Special	10 5	31 3
Sand	Miscellaneous	4 10	12 6	In trucks	4 2	11 3	Excep.	7 6 22 6	Excep.	6 3	18 9
Sawdust	A	5 4	13 6	Miscellaneous In trucks	13 6 4 2	38 6 11 3	Excep.	Not mentioned.	Бхсер.	0.3	
Scientific Instruments	4.	38 3	109 6	4	29 0	87 6	2	30 3 104 0	3	27 0	75 9
Sced—Grass	. 1	17 8	49 4	Miscellaneous	13 6	38 6 .	Agric. 1	12 3 39 6	2 Flower 4	20 9 39 6	57 4 112 8
Sewing-machines (unpacked)	4 3	38 3 29 5	109 6 84 10	• 4. 3	29 0 25 0	87 6 loose }	_	30 3 104 0	4	39 6	112 8
Shale—Kerosene	. Miscellaneous	4 10	12 6	Miscellaneous	13 6	38 6	Excep.	7 6 22 6		Not	named.
Sheepskins	в	8 10	24 8	Miscellaneous	13 6	38 6	Special	15 0 46 8	Special	10 5	31 3
Shingles		5 4	13 6	Firewood	4 2	11 3	Timber	20 6 69 0 12 6 37 6	1	14 6 14 6	38 11 38 11
Silk Goods		29 5	84 10	2	21 0	62 6	2	30 3 104 0	4	39 6	112 8
Slate Slabs	4	38 3	109 6	2	21 0	62 6	2	30 0 104 0	3	27 0	75 9
Slates	A	5 4	13 6	1	16 6	50 0	Excep.	7 6 22 6	Special	10 5	31 3
Sleepers (Railway)	В	8 10	24 8	Firewood	4 2	11 3	Timber	8 4 25 0	1	14 6	38 11
Soap (except scented and fancy)	2	21 7	61 2	1	16 6	50 Ô	1	20 6 69 0	$\begin{cases} & 1 \\ \text{Fancy 4} \end{cases}$	14 6' 39 6	38 11 112 8
Soda (Crystals)	В	8 10	24 8	1	16 6	50 0	1	20 6 69 0	rancy 4	14 6	38 11
Do. (Caustic)	в	8 10	24 8	1	16 6	50 0	2	30 3 104 0	2	20 9	57 4

(undressed)] A	5 4	13 6	Firewood	4 2	11 3	Timber	12 6	37 6	1	14 6	38 11
ding or grindstones)	Mis.	4 10	12 6	Building 2 Grindstones 1	21 0 16 6		Excep.	7 6		Special 1	10 5 14 6	31 3 38 11
gravestones)	2	21 7	61 2	,	21 0	į.	. 2	30 3		3	27 0	75 9
	Mis.	4 10	12 6	Special	7 6	20 0	Excep.	7 6	22 6	Excep.	6 3	18 9
		5 4	13 6	Firewood	4 2	11 3	Timber	12 6	37 6	1	14 6	38 11
·	See	page 142	,.	See page 142.			Agricultural 2	9 0	24 8	Special	10 5	31 3
•••••	2	21 7	61 2	{ 2	21 0		1	20 6	69 0	Loaf, loose 4	14 6 39 6	38 11
ds		16 8	48 4	3	. 25 0	75 0 In cases, &c.	- ا	20 0	0000.	Loar, nose 4	33 0	112 6
•••••	. 1	17 8	49 4	4	29 0	87 6	2	30 3	104 0	4	39 6	112 8
	. В	8 10	24 8	Miscellaneous	13 6	38 6	Special	15 0	46 8	1	14 6	38 11
		17 8	49 4	1	16 6	50 0	1	20 6	69 0	1	14 6	38 11
	. A	5 4	13 6		Not	named	· -Not	named		No	mention	ed.
es	-	29 5	84 10	3	25 0	75 0	1	20 6	69 0		3d. to 6d.	
e	i	5 4	13 6	Mis.	13 6	38 6	Excep.	7 6	22 6	2	20 9	57 4
nd Ornamental	. В	8 10	24 8			***************************************	Excep.	7 6	22 6	2	20 9	57 11
not exceeding 2 inches	. A x 50 %	8 ′ 0	20 3	1	16 6	50 0				1	14 6	38 11
od in logs, 30 c. ft. to ton	·h											
nan Hardwood, 40 do	. } A	5 4	13 6	Timber (sawn)	6d. per	truck per mile.	Timber	12 6	37 6	1	14 6	38 11
ed	.]]				,		Timber	12 6	37 6	1	14 6	38 11
•••••	. A x 25 %	6 8	16 11									·
·····	. В	8 10	24 8	Up journey mis.	13 6 21 0	38 6 62 6			30 0 119 miles.	1	14 6	38 11
		21 7	61 2	2	21 0	62 6	- Special	15 0	46 8	1	14 6	38 11
		8 10	24 8		Not	named			30 0 119 miles.	Excep.	9 0	18 4
leaf	. A	5 4	13 6	Miscellaneous	13 6	38 6	Agricultural 1	12 3	39 6	1	14 6	38 11
•		29 5	84 10	′ 4	29 0	87 6	2	30 3	104 0	.3	27 0	75 9
	. 4	38 3	109 6	4	58 0	175 0	2	30 3	104 0	4	39 6	112 8
· · · · · · · · · · · · · · · · · · ·	. A	5 4	13 6	Agr.	5 6	15 0	Agricultural 2	9 0	24 8	A	8 4	17 9
	. 4	38 3	109 6	4	5 8 0	175 0	. 2	30 3	104 0	4	39 6	112 8
• • • • • • • • • • • • • • • • • • • •	.\ B	8 10	24' 8	1	16 6	50 0	Special	15 0	46 8	1 .1	14 6	38 11
• • • • • • • • • • • • • • • • • • • •	. 3	29 5	84 10	4	29 0	87 6	Special	15 0	46 8	4	39 6	112 8
	. В	8 10	24 8	1	16 6	50 0	1	20 6	69 0	1		38 11
							See page 140.		· ·	_		·
	. 2	21 7	61 2	in cases 2	21 0	62 6	2	30 3	104 0	2	20 9	5 7 4
•	*3	29 5	84 10	C perforated #	0 و2	01 0	.			_	•	• •
		B ·	3 29 5 B 8 10 2 21 7	3 29 5 84 10 B 8 10 24 8 2 21 7 61 2	3 29 5 84 10 4 B 8 10 24 8 1 2 21 7 61 2 {in cases 2 perforated 4	3 29 5 84 10 4 29 0 B 8 10 24 8 1 16 6 2 21 7 61 2 {in cases 2 perforated 4 29 0	3 29 5 84 10 4 29 0 87 6 B 8 10 24 8 1 1 16 6 50 0 2 21 7 61 2 {in cases 2 21 0 62 6 37 6 }	3 29 5 84 10 4 29 0 87 6 Special B 8 10 24 8 1 1 16 6 50 0 1 See page 140.	3 29 5 84 10 4 29 0 87 6 Special 15 0 B 8 10 24 8 1 1 16 6 50 0 1 See page 140. 2 21 7 61 2 {in cases 2 perforated 4 29 0 87 6 } 2 30 3	3 29 5 84 10 4 29 0 87 6 Special 15 0 46 8 B 8 10 24 8 1 1 16 6 50 0 1 See page 140. 2 21 7 61 2 {in cases 2 perforated 4 29 0 87 6 } 2 20 0 87 6 } 2 30 3 104 0	3 29 5 84 10 4 29 0 87 6 Special 15 0 46 8 4 See page 140. 2 21 7 61 2 {in cases 2 perforated 4 29 0 87 6 } 2 20 0 87 6 } 2 30 3 104 0 2	3 29 5 84 10 4 29 0 87 6 Special 15 0 46 8 39 6 16 6 50 0 1 See page 140. 2 21 7 61 2 {in cases 2 perforated 4 29 0 87 6 } 29 0 87 6 } 2 30 3 104 0 2 20 9

	NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.	SOUTH AUSTRALIA.
•	Wool. Per Bale not ov	Wool. 50 miles. Per bale, not over 4 cwt. Per bale, not over 4 cwt. 2/4 6/8 Per bale. Portland to Melbourne, 272 miles, 8/11 ,, to Williamstown, 279 Bales of wool over 4 cwt. each will be charged 25% additional upon the rate for 4 cwt. for every cwt. or part of a cwt. in excess.	Wool. From Roma to Brisbane, 317 miles	Wool. Per bale not over 4 cwt. From 35 miles
	To washing establishments—15 miles, 10d; over 15 miles to 22 miles, $1/1$ per bale. From ", 15 ", 1/; ", 15 ", 22 ", $1/3$ ",			Morgan to Adelaide, 105 miles, 4/6 per bale. Special rate.
	Rates for Live Stock.	Live Stock.	Live Stock.	Live Stock.
	Herds, Flocks, &c, when in consignments of not less than one full Truck load.	CATTLE.	CATTLE.	For a single Horse/6
	Horses. The Commissioner will carry Horses in Cattle Trucks if requested to do so, but only under special contract, relieving him of all responsibility. CATTLE. Per Truck Other distances. 1 to 140 miles, -/8 per truck per mile. 140 ,, 200 ,, -/6 ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,	Pigs or Cattle (in Goods Truck):— Per Truck. 100 miles	Full Waggons, containing more than 3— Per Truck. Roma, 317 miles £6 5 0 Stanthorpe, 206 miles 4 18 0 Toowoomba, 100 miles 2 12 6 Horses. In Trucks, -/6 per Waggon per mile; Min., 5/ Senders to load only 4 in a	For two Horses/10 For a single Cow or Bull/6
	SHEEP. Per Truck. 100 miles	SHEEP. Per Truck. 100 miles £3 17 0 150 ,, 4 10 6 200 ,, 5 19 0 300 ,, 8 17 0 Goods Trucks. 1 to 150 miles/6 per Truck. Maximum, £3 3s. per Truck. Over 150 miles/5 per Truck.	Auy number loaded:— Full van per mile. S. d. 100 miles and under $0 ext{ } 4\frac{1}{2} ext{ } 0 ext{ } 3$ 100 ,, to 200 miles $0 ext{ } 3\frac{1}{2} ext{ } 0 ext{ } 2$ 200 ,, to 300 ,, 0 2 0 1 Over 300 miles 0 1 0 0 Large sheep-van 50 per cent. addition	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$

Pigs.

Same rates per Truck as cattle. Minimum, 15s.

Under the foregoing rates for Cattle, Sheep, Horses, and Pigs, no less charge than for one full Truck will be made for each and every Truck uesd.

SMALL CONSIGNMENTS.

i.e., 4 Cows or Oxen, or 10 Calves, or 40 Sheep, or 30 Pigs.	½ Truck, i.e., 2 Cows or Oxen, or 5 Calves, or 20 Sheep, or 15 Pigs.	Single Cow or Ox.	Sheep or Pigs, when less than 1 Truck.	Calves when less than ‡ Truck.
6d. per mile	4d. per mile	3d. per mile.	d. each per mile.	1d. each per mile.
Minimum, 10s	Minimum, 7s. 6d	Min., 7s. 6d. each.	Min., 1s. 6d. each.	Min., 2s. each.

Bulls.

The charge for Bulls is 7d. each per mile; if more than one in a Truck, 42d. each per mile; for half a Truck and upwards cattle rates. Minimum, 12s. 6d.

Valuable Rams and Ewes.

FIf less than half a Truck load, will be charged 2d. each per mile; for half a Truck and upwards, Sheep rates. Minimum, 5s.

Horses.

See full Truck rates. No less charge than for a full Truck load will be made for any number. When Live Stock is returned from Sydney or Homebush to Country Stations half the foregoing rates will be charged, provided the owners wait the requirements of the Department.

Rates for Fresh Meat in van loads.

In the case of Beef, the van-load will be limited to 12 Carcases, but this number may be increased provided that a van-load shall not be held to consist of a greater total weight than 4 tons. Where a consignment of beef does not amount to 4 tons, senders will be allowed to make up the van-load with carcases of mutton, pork, or veal. Any weight above 4 tons, whether the number of carcases be more or less than 12, will be charged for at the rate of ad. per cwt. per mile.

Distance.	Beef, Pork, or Veal.	Mutton.	Distance.	Beef, Pork, or Veal.	Mutton.
15 miles and under 25 ,, ,, 35 ,, ,, 45 ,, ,, 65 ,, ,, 67 ,, ,, 755 ,, ,,	s. d. 10 0 16 8 20 0 23 4 30 0 36 8 43 4 50 0	s. d. 10 0 12 6 15 0 17 6 22 6 27 6. 32 6 37 6	85 miles and under 95 , , , 105 , , , 115 , , , 125 , - , , 135 , . , , 150 , , , Every mile over 150	s. d. 56 8 63 4 66 2 69 0 75 0 81 0 90 0 0 6	s. d. 42 6 47 6 49 7 51 9 56 3 60 9 67 6 0 5

Smaller quantities charged actual weight at 3rd class rates. To be loaded and unloaded by Owners.

In the event of the Department not being able to supply Sheep Trucks it does not undertake to provide Goods

Every Sheep or Lamb, up to 3, carried any distance not exceeding 24 miles, by Goods Trains only...... 2/-

And for each mile beyond that dis-

Over 3 and up to 10 animals, half Truck rate: over 10 animals, full Truck

Minimum Charge :- Sheep Truck, 40/-; Goods Truck, 20/-; exclusive of a Terminal charge of 2/- per Truck for Sheep Trucks, and 1/- per Truck for Goods Trucks, to be added to the above rates in all cases.

Store sheep in lots of not less than 500 to be carried from Newmarket to country stations at 3 published rates, and store cattle at 1 published rates, provided the trucks are required to load on the upjourney, again from the Line to which such store cattle and sheep are consigned.

Fresh Meat.

1		50 miles	150 miles
1	Class 2 per ton	21/-	62/6.
1	Large quantities	per truck 39/6	109/6
-{		per track	100/0.

,,	100	,,		,,	150		4/9	,
	150			,,				,,
• • •	175			,,		• • • •		* 1
	200	"	•	,,		• • • •		,,
٠,,	200	1,		,,		• • • •		,,
"	300	"		**	300	• • • •	0/-	• 1

Quantities not requiring a Sheep

50 miles and under... 1/- per head.

Waggon will be charged as under,

51 ,, to 100 1/9 101 ,, to 150 2/6

151 , to 200 3/-

201 ,, to 250 3/6

251 ,, to 300 4/-

301 ,, to 350 4/6

PIGS IN TRUCKS.

PIGS OR SINGLE CALVES CARRIED IN

GUARD'S VAN.

-/6 per waggon per mile.

Fresh Most

	· FICSH	mrono.	
Class	1		150 miles. 69/

Fresh Meat.

	50 miles 150 miles per ton. per ton
Class 2	

VICTORIA. NEW SOUTH WALES. QUEENSLAND. SOUTH AUSTRALIA. Live Stock, &c. for Agricultural | Live Stock, &c., for Agricultural | Live Stock, &c., for Agricultural Live Stock for Agricultural Shows. Shows. To the Show, ordinary rates; and the same from the Show, if sold. Unsold exhibits will be returned to the Stations whence they came, free of charge, and the freight paid for conveyance of same to the Show refunded on production of a certificate from the Secretary To the Show, ordinary rates; and the same from the Show, if sold. Unsold exhibits will be Not named. Exhibits sent by rail to any Show will be returned free on production of returned free, and amount of the freight paid for of the Agricultural Society to the effect that they are unsold. certificate from the Secretary that conveyance of same to the Show refunded on Live Stock conveyed to and from Agricultural Shows will be subject in all respects to production of certificate from the Secretary of they are unsold. The above regulations are only to apply if the exhibits are conveyed in cattle waggons and the General Conditions and Regulations of the Department, except that, when carried free, it will be entirely at the owner's risk. by goods trains, and no reduction in the ordinary rates will be made if conveyed in horse-boxes or by passenger trains. Poultry and Dogs will be charged full rates both ways. Buggies, Drays, and Waggons are not classed as Agricultural Implements, and are charged full rates both ways. Contractor's Plant. Contractor's Plant. Contractor's Plant. Contractor's Plant. Waggons on wheels, 4d. per mile each; minimum charge, 5s. Waggons -/3 per Truck per mile; mini-Not named. Not named. Locomotive Engines in Steam, Owner's risk only, 2s. 6d. per mile each, in addition to mum charge, 15/-. wages of Driver, Fireman, and Guard, and cost of Fuel. Light engine in steam, 1/6 per mile. Locomotive Engines on Wheels, but not in Steam, First-class Rates, at Owner's risk only. Plant, 10d. per Truck per mile; minimum, 20/-Hay, Straw; and Chaff-per Truck. Hay and Straw-Loose-per Truck. Hay and Straw-Loose. Hay and Straw. Straw To Brisbane and Ipswich only-Special class-50 miles, 10/5 per ton. & Chaff. miles. £ s. d. £ s. d. Warwick-166 miles, 17/6 per ton. 150 ,, 31/3 ,, Not exceeding 200 miles 2 14 9 3 2 10 Toowoomba100 ,, 12/6 ,, Hay, straw and chaff, pressed (generally.) Not exceeding 16 miles..... 0 10 0 Not exceeding 20 0 17 6 0 15 0 35 ,, 0 17 0 $\overline{2}$ 15 7 0 17 0 30 1 2 6 1 0 54 ,, 1 4 0 1 4 0 100 ,, 1 11 9 1 8 1 150 ,, 2 3 11 1 18 10 300 400 3 11 0 4 7 3 Agriculture 2—50 miles 9/2 per ton. 1 10 0 50 1 12 6 100 2 13 4 2 10 10 150 ,, 25/-150 3 14 2 3 11 8 Smaller quantities charged actual weight at First Class rates. 200 4 15 0 4 12 6 250 5 15 10 5 13 4 Part of a Truck to be charged as a full Returned Empties. Returned Empties. Returned Empties. Returned Empties. FREIGHT MUST BE PREPAID. 50 miles. 150 miles. 50 miles. 150 miles. 50 miles. 175 miles. Hogsheads 1/-· 1/10 Pipes and tierces 1/-Tallow puncheons 1/-Not exceeding-Quarter-casks-/8 Hogsheads and quarter-1/1 Bags, per bale of 25 ... -/8 1/1 casks-/6 50 Miles. 100 Miles. 200 Miles. 300 Miles. 400 Miles. 500 Miles Quarter-casks & barrels... -/6 Fruit cases not exceeding Kegs, boxes, and small Bags in bundles, balcs, or bags (minimum | s. d. Kegs-/6 2 cub. ft. measurement 50 miles, -/3 fruit cases -/3 charge 1 cwt. per package) ... per cwt. 0 6 9 0 11 Cases, drums, cans, carboys, crates, butter Grain bags, bundles of, 150 ,, Coops and Cases (except fruit cases) boxes, and fowl coops, miscell. rate, Bottle-cases, casks, and not more than 2 cwt. 1/measuring under 6 cubic feetcach 50 miles, 13/6 per ton; 150 miles, 38/6 per ton: min. -/6. 0 2 0 0 10-gall. kegs, not ex-Carriage to be prepaid. Do. do. over 6 and under 15 cubic feet each 0 3 0 11 . 1 0 ceeding 5 cub. ft. Do. do. over 15 and under 25 cubic feet each 6 1 10 2 Fruit cases, special, 50 miles, 7/6 per 0 measurement 50 miles, -/6 Do. do. over 25 cubic feet...., 0 9 2 2 9 3 0 ton; 150 miles, 20/- per ton; min., 150 Hogsheads, 0 6 1 0 1 3 Empties, not being returns, double Pipes 1 0 2 0 3 0 3 6 the above rates. Quarter-casks, 0 3 0 6 0 9 0 11 Tierces...., 1 0 2 0

All other returned empties as may be agreed upon. Empty cases measuring not more

than 8 cubic feet will be carried free.

No. 52—continued.

Horses.

In Boxes:—Full horse-box (3 horses, one owner), 1s. per mile; minimum charge, 15s.; one horse, 5d. per mile; two horses, 9d. per mile; minimum charge, 7s. 6d. each; stud horses, 1s. per mile each, minimum charge, 15s. Mares, with foal at foot, rate and a half.

A reduction of 25 per cent. on the above charges will be made on every mile beyond 150 and up to 200, and over 200 miles, 50 per cent. per mile will be allowed.

FOR AGRICULTURAL SHOWS.

To the Show, ordinary rates, and the same from the Show if sold. Unsold Exhibits returned free and freight paid for conveyance to the Show refunded.

FOR RACE MEETINGS.

To the Races, ordinary rates, and the same from the Races if sold. If unsold they will be returned free of charge.

HUNTING HORSES AND DOGS.

Horses going to the Chase, single fare for the double journey. Dogs, 1d. per mile each to 50 miles, and 4d. additional for every 30 miles or part of 30 miles thereafter; minimum charge, 6d.

Carriages.

Carriages, gigs, and dog-carts, 4d. per mile, cach; two vehicles, one owner, if on one Truck, 6d. per mile; 4-wheeled waggons and bullock drays (empty), 6d. per mile; minimum charge, 7s. 6d.

A reduction of 25 per cent. on the above charges will be made for every mile beyond 150 and up to 200; and over 200 miles, 50 per cent. per mile will be allowed.

Dogs.

50 miles, 2/1; 150 miles, 3/5.

Gold Dust and Bullion, and Gold and Silver Coin.

The Commissioner for Railways will not be responsible for the safe conveyance of gold dust and bullion, or gold and silver coin, &c., as the following charges are made, and the gold dust and bullion and coin carried, on condition of its being in charge of owners and at their risk.

	Distance not over 55 miles.	not over	not over	not over	not over	Distance not over 350 miles.	over
Gold dust and bullion, \$\P\$ 100 ozs.							
Gold coin, \$£100 Silver coin, \$£100 Fractions over 100 and	-/6 1/-	/10 .	. 1/3	1/8	2/-	2/3	2/6
Fractions over 100 and	under 50	will not be	. 2/0 charged, bu	t fractions o	3/6 f 50 and ove	. 3/9 r will be cha	4/– arged as 100-

Rates for Wilk

1	ACCUSED TO INITIA.	
In quantities of not les	es than 300 gallons, less than 300 gall	ons double rates.
15 miles and und	er	d. per gallon.
40 ,, ,,		½d. ,,
90 ,, ", ",		3 d. ,,
Empty cases retu	rned free.	1d. "

Each mare, gelding, or filly, not exceed-	
ing 40 miles	20/-
Each mile beyond 40 miles	-/6
Each entire horse not exceeding 20 miles	20/-
Each mile beyond 20 miles	1/–
Horse-box (three horses), 1/3 per mile;	
minimum	40/-

In Goods Trucks and by Goods Trains on either Up or Down Journey, 1/- per truck per mile. By Passenge Trains, 1/6 per truck per mile.

Carriages.

Carriages, gigs, dog-carts, and vehicles, of a similar description will be charged for at the rate of -/6 per mile, subject however that the sum of 20/- shall be the minimum charge in any case. Two vehicles, one owner on same truck, -/9; three vehicles, 1/- per truck per mile, minimum 20/-; vehicles for repair, return tickets will be issued at 50 per cent. addition on above rates.

50 miles, 2/1; 150 miles, 6/3; minimum | Dogs, 50 miles, 2/6; 150 miles, 5/-. charge, -/6.

Milk.

[iscl	 ···	50 miles.	150 miles
	 · · · · · · • • • · · · · · · · · · · ·	. 13/6	38/6

Horses-in Boxes.

5	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Horse Box 1/- per mile, minimum, 8/
or er	Entire Horses. One horse per mile per mile. 100 miles and under $-/6$	

Over 300 miles -/3..... -/2

Carriago

Califages.			
100 miles and under/4		mile each.	
100 to 200 miles/3	,,	,,	
200 to 300 miles/2 Over 300 miles/1	,,	"	
Minimum charge, 5s. each.	"	**	,
-8-,			

Gold and Gold Dust, and Gold and Silver Coin.

Gold & gold dust, \$\P\$ 100 Gold coin, \$\P\$ £100 Silver coin, \$\P\$ £100	2/6	 11/- 5/6

Milk.

In Cans of not less than 6 gallons. 25 miles and under -/1 per gallon. Over 25 miles and under 50 miles -/1½ Cans returned free.

Carriages.

Horses.

Gigs, dog-carts, and light drays (empty) weighing not more than 10 cwt., -/4, per mile; minimum charge, 4/-.

Carriages, and waggons, and drays weighing not more than 25 cwt. (empty), -/6 per mile; minimum charge, 6/-.

Ditto, ditto, over 25 cwt. (empty), -/8 per mile; minimum charge, 8/-.

APPENDIX TO REPORT ON RAILWAYS-1882.

NEW SOUTH WALES.	7	VICTORIA.	•	Q	UEENSLAND.			SOUTH	AUSTRA	LIA.
Parcels Rates.	P. carried a B will be c	Not over 25 Not over 75 Not over 76 Not over 10 For every		charg	Under 10 10 to 25 26 to 50		1	Parcels	under £10 v	alue.
Miles and 3 lbs. down and 2 lbs. to 14 lbs. 28 lbs. 56 lbs. 84 lbs. 112 lbs. thereof.	acked Parcels incoming the control of the control o	Miles. 25 miles 27 75 miles 28 7 10 miles 29 10 addition		All Packages over 56 Opium, double rates Opium, double rates Parcels over £10 value charged, and the value of Newspaper parcels a Packed parcels, quad	50500000516	Miles	Any distanc not ex ceeding miles—	<u>-</u>	Weight exceeding -	For every additional 50 lbs., or part of 50 lbs., up to 300 lbs.
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	Packed Párcels in hampers, cases, &c., to be charged quadruple the above rates. Victorian Newspapers, in parcels of not less than 12, forwarded on day of publication, and Press Parcels carried free, at owners' risk. Perishables, including Fish, Fruit, Butter, Eggs, Poultry, &c., to be charged the above rates or 4th Class Goods Rates (except Fish, carried at 2nd Class). Bicycles, Feathers, Furniture, Glass, Hat Boxes, Millinery, Mirrors (loose), Musical Instruments, or other articles light and fragile, will be charged 50 per cent. additional on the above rates. Corpses, under 40 miles, 20s. cach; above 40 miles, 6d. per mile. Books (Library) returned free.	14 lbs. 14 lbs. 0 3 0 5 0 8 0 8		cs over 56 lbs. uble rates. r £10 value ar value of parce parcels and de			10 25 55	. 0 9	s. d. s. d 0 9 1 0 1 0 1 6 1 6 2 3	s. d. 0 3 0 6 0 9
And respectively for every additional or part of additional 15 miles	es, &c., to be is of not less to uit, Butter, E Glass, Hat B Id on the above 40 ach; above 40	Not over 28 lbs. 56 lbs. 6 lbs. 6 lbs. 6 lbs. 1 6 lbs. 6 l	At the risk o	will be chand under £ ols declared, be capatches, be rates. C	**************************************	3 lbs. and Under.	75 105 135 170 200	1 3 1 6 1 9 2 0 2 3	2 0 3 0 2 3 3 6 2 6 4 0 2 9 4 6 3 0 4 9	1 3 1 6 1 9
Fresh Meat, Fish, Poultry (dead), Dairy Produce, Eggs, Fruit, Vegetables, Ice, and Game, under 1 cwt. 25 per cent. reduction on parcel rates; minimum rates, 3d. Musical Instruments, packed in cases, 25 per cent. added to above rates. Sewing Machines, packed in cases, ordinary rates, but when unpacked double rates will be charged. Bath Chairs, Perambulators, Velocipedes, and Bicycles, requiring a carriage truck for the conveyance, will be charged as for a two-wheeled carriage. Corpes, 1s. per mile; minimum charge, 5s. Newspaper parcels, one-quarter parcels rates; minimum charge, 3d.	charged quadru charged quadru chan 12, forward ggs, Poultry, &c oxes, Millinery, e rates. miles, 6d. per n	84 lbs. 112 lbs. 12 lbs. 12 lbs. 12 lbs. 12 lbs. 12 lbs. 12 lbs. 12 lbs. 15 lbs. 12 lbs. 15 lbs. 12 lbs. 15 lb	Ordinary of the Owner, Stan	ver 56 lbs. will be charged at Goods Rates c rates. 10 value and under £50, double rate, and lue of parcels declared, the Commissioner warcels and despatches, half rates; minimum s, quadruple rates. Corpses, 1s. per mile;		7 lbs. and Under.	Doul	ole rates	3 · 3 5 0 charged on truments, and	furniture,
Passenger's excess luggage, parcel rates. Commercial travellers' excess luggage, parcels rates on down journey and free on up journey, on production of Railway receipts, certifying that full trainage has been paid on down journey. Gunpowder and other explosives will not be conveyed by Passenger Trains. Perambulators (children's) and Velocipedes will be conveyed in Guard's Vans at the following rates: When conveyed as Passenger's luggage:—	ple the above raed on day of puece, to be charge Mirrors (loose)	For every 28 lbs. or portion lbs. thereof, add. d. s. d. 0 0 0 0 1 0 0 0 1 3 0 0 0 3 0 0 0 0 0 0	Parcels	oods Rates. rate, and over £50, missioner will not hold missioner will starge, 6d. per mile; minimum,	*0011000000000000000000000000000000000	14 lbs. and Under.	go fee	ods meas t to 100	uring more th lbs. weight.	an 2½ cubic
Not exceeding 15 miles 0 9 30 , 10 1 0 50 , 16 200 , 36 75 , 20 20 100 , 26 300 , 46	tes. blication, and d the above r.), Musical Inst	## 14 lbs. 28	Rates.	£50, quadru t hold himse ge, 6d.	000000000c	28 lbs. and Under.				
When conveyed as Parcels 50 per cent. additional will be charged. Icc conveyed by Passenger trains— 10 lbs. Every 10 lbs. and under. additional. d. d. 100 miles	Press Parcels c ates or 4th Cl	1 20 484	risk of the Car	iple rate.	«чоло а чоло го со со со со со со со со со со со со со					
200 ,,	asried free, at cass Goods Rat	84 lbs. 112 lbs. 28.d. 29.0 54.0 54.0 68.4 68.6 68.6 68.6 68.6 68.6 68.6 68.6	of the Carrier, not Stamped, and under £10 in value.	£50, quadruple rate. Although these hold himself responsible for contents. e, 6d.	**************************************	Joints of Mca not exceeding 28 lbs.(Owners risk.)		*	•	
	bos (except Fish	For every 28 lbs. or portion thereof, addt. 8. d. 0 8. d. 0 8. d. 1 0 1 1 0 1 1 8 d. 1 1 8 d. 1 8 d	ed, and under	ese rates are	80000000000000000000000000000000000000	Bags Baske Bread r ceeding				

No. 53.

RETURN of the number and nature of the Accidents, and the Injuries to Life and Limb, which have occurred on the Great Southern, Western, and Northern Railways, from 1st January to 31st December, 1882.

		-	Donne	one 1-**	lod ,		Servan	ts of t	he			11
		Passeng or in		ers kil jured.	iea	D	cpartme	nt, kil ired.	led or	Trespassers.		
Date of Accident,	Line of Railway.	the	n causes eyond ir own ntrol.	the miso	From eir own conduct want of ution.	be the	n causes yond ir own ntrol.	the mis	From eir own conduct want of ution.	own	om their want of aution.	Nature and Cause of Accidents.
		Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed	Injured.	
1882. 12 Jan	Northern				····			1		Ī	Ī	Man run over by train at Murrurundi.
16 ,, 16 ,,	Suburban Western									1		Run over by train at Homebush. Porter injured while assisting to unload horse at Blayney.
23 ,, 25 ,,	Southern						1			 1		Guard accidentally fell over points at Lithgow. Run over by train at Galong.
25 ,, 6 Feb	Northern Suburban		··· ·		•		•••	1		∥		Man run over by train at Honeysuckle Point
13 ,	Southern									1		Run over by train at Newtown. Fell from bridge near Campbelltown.
20 ,,	Suburban South-Western.		•••						1		₁	Crushed between trucks at Sydney. Leg broken, jumping on truck at Carrathool.
22 ,, 25 ,,	Suburban South-Western.		•••		•••				1			Pitter, hand crushed while erecting crane at Petersham.
— Ḿаг	Suburban	·•• ···			•••	•••			1 1			Injured while coupling trucks at Junce Junction Man fell from scaffold at Sydney station.
9 ,,	,,								1 1		.:.	Man, leg broken through fall of earth. Granville
13 ,	Northern				•••				i			Injured while shunting at Darling Harbour. Gate-keeper knocked down by train at New-
22 ,, 16 April	Suburban									ļ	1	castle. Leg crushed by truck at Hamilton, shunting. Injured, struck by passing train at M'Donald
17 " 21 "	» ···	, ,		,								Fell between train and platform at Sydney. Injured when sitting on car platform at Peter-
24 ,,	Northern						1					sham. Fireman struck in face by bird when train was in motion near Maitland.
11 May 18 ,,	Suburban Southern								1			Porter, foot crushed, loading timber at Sydney.
20 ,,	,,							1	•••			Engine-driver fell from engine. Porter crushed between trucks and platform,
25 ,, 25 ,,	Western Suburban											Campbelltown. Painter injured, falling from ladder at Bathurst. Lady injured leaving train while in motion at
25 ,,	»								•••		1	Ashfield. Run over by train at the Sydney Tunnel.
2 June 5 ,,	Northern Suburban			ï	•••			•••	•••	1		Alighting from train while in motion at
5 ,,	,,		•••;				•••	•••	1			Petersham. Crushed between trucks and goods platform at Campbelltown.
12 ,, 27 June	Northern Suburban						•••		1 1			Porter, hand crushed while unloading stone.
90 1	Suburban				1							Cleaner, foot injured by piston rod of locomotive. Left train in motion at Granville.
.12 ,,	,,										··· ₁	Carriage builder fell from carriage at Sydney. Crushed between trucks at Darling Harbour.
13 ,,	Windsor Southern								• • •	1		Fell through bridge at Mulgrave.
17 ,	Western Suburban							ï				Run over by train at Wagga Wagga. Struck by engine at Dubbo.
18 ",	,,						1		•••	1		Fell through Duck River Bridge. Case galvanised iron fell on foot at Sydney
20 "	Western		[,	1						[Goods Sheed. Fell into ashpit, Zigzag Bottom Points.
21 ,, 28 ,,	Southern Suburban			•••]					′	1		Struck by engine near Binalong.
30 ,,	Southern									1		Run over by train at Petersham. Fell between train and platform at Marulan.
28 Aug	Suburban								1	 1		Crushed between trucks at Sydney.
5 Sept:	ູ " …								1			Run over by train at Newtown. Hand caught in machinery at Workshops.
11 ,,	Northern							:::	1	 1		Arm broken at Granville. Run over by train at Gunnedah.
13 ,,	Western									1	• • •	Run over by train at Katoomba.
18 ,,	Southern				:			ï				Crushed between carriage and dock at Bathurst. Man fell from Bridge at Wagga Wagga.
6 ,,	Western Southern	•••					1				}	Carriage left rails, man injured. Run over by train at Cootamundra.
3 Nov	Suburban Western		24				1					Man struck by falling telegraph pole.
19 "	,,							ï				Passengers injured in collision at Bathurst. Shunting at Blayney.
21 ,,	,,				•••		1					Injured by fall of earth while trenching at Stone Creek.
23 ,, 5 Dec	,,								1		,	Foot cut off shunting at Penrith.
6 ,,	Suburban							1			1	Struck by engine at Dubbo. Shunting at Darling Harbour.
7 ,,	Southern							1				Run over by train near Jerrawa.
Total		-	24	1	4		-			-19		Foot crushed by engine at Junee.
	64	2 B	· ·	<u> </u>		'	. 81	9	22	12	. 6	·

No. 54.

RETURN of the number and nature of Accidents, and the Injuries to Life and Limb, which have occurred on the Tramways, from 1st January to 31st December, 1882.

	Servants of the	Department.	Passer	gers.	Other than I	Passengers.	Nature and cause of Accidents.		
Date.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Nature and cause of Accidents.		
7 January				1	•••••	•••••	Lady left tram while in motion in Oxford-street.		
4 February		•••••			1		Man accidentally run over by train in Elizabeth-street.		
20 ;;	••••••	······································				2	Cart collided with motor in Oxford- street; occupants of cart slightly		
13 March		 		11			injured. Tram on Camden Tramway ran into siding, colliding with ballast waggons.		
23 ,,			1	** ******			Man left tram while in motion in Crown- street.		
6 April	1	.,		********	1		Child accidentally run over in Elizabeth-street, near Belmore Park.		
9 May		1		*******		********	Conductor fell from tram while in mo- tion in Elizabeth-st.		
16 "				1	•		Man fell from car while in motion in Elizabeth-street.		
3 June			1				Man attempting to get into car while in motion.		
.6 ,,				1			Girl left tram while in motion at Waterloo.		
9 ,,	1						Conductor knocked off foot-board of car by dray on Waverley line.		
13 ,,					1		Child accidentally run over by motor at Waverley.		
21 ,,						1.	Cart collided with motor at Botany driver of cart injured.		
27 ,,					•••••	1	Cab collided with motor in Elizabeth street; driver of cab injured.		
2 July						1	Woman struck by motor at Woollahra Passenger fell from car while in motion		
·3 ,,				1			in Elizabeth-street. Man left car on wrong side and strucl		
24 .,						1	by passing tram in Devonshire street. Man struck by motor and slightly		
24 ,, 27 ,,						1	injured. Horse collided with motor at Padding		
-							ton; rider of horse thrown and slightly injured.		
1 August			1	1			Man left car while in motion at Botany Passenger injured, leaving tram whil		
o ,, 11 ,,				4			in motion in Elizabeth-street. Passengers slightly injured in collision		
16 September	r					2	between trams at the corner of Eliza beth and Liverpool streets. Buggy containing two men collide with tram at Botany; occupants of		
21 ,,		1					buggy injured. Conductor slightly burnt in putting ou		
20					-	1	blazing kerosene lamp. Man struck by motor in Redfern-street		
9 October	1			1			Lady left tram while in motion, Fores Lodge.		
10 ,,		1					Conductor struck by cart when co- lecting fares on foot-board of tran		
16 ,,						1	Man injured through collision betwee motor and cart.		
18 ,,		· 1				`	Conductor slightly injured by falling from car at Botany.		
23 ,,					1		Man accidentally run over in Elizabeth		
31 ,, .				1		`	Man fell from car while in motion in Devonshire-street.		
1 November	or	1				······.	Conductor injured coming into contact with tank, Woollahra.		
9 ,, ° 9 .,				1 1			Man fell from tram in motion at Botany Girl fell from car.		
16 .,,				î			Man jumped from tram in motion a Waverley.		
3 Decembe	r			2			Two ladies slightly injured by collision between trams at Newtown Rose		
18 "						1	and Parramatta-street. Cart collided with tram at Waverley.		
23 ,,		·				1 2	Man run over by tram in Devonshir street. Cart collided with tram at Newtown.		
`30 ,,						-	- Care contact with train at 110 wown.		
Total .	1	5	3	28	4	15			

No. 55.

Return of the Number of Passengers, Tonnage of Goods, Earnings and Working Expenses, Total and per Train Mile, percentage of Working Expenses to Gross Earnings, net Earnings, Capital Invested on Lines Open, and Interest on Capital each Year; from 1855 to 1882, inclusive.

Year.	Length of Line, 31 December.	Number of Passengers.	Tonnage of . Goods.	Earnings from Coaching Traffic.	Earnings from Goods Traffic.	Total Earnings.	Working Expenses.	Earnings per Train Mile.	Working Expenses per Train Mile.	Percentage of Working Expenses to Gross Earnings.	, Net Earnings.	Capital expended on Lines open.	Interest on Capital.
	Miles.	No.	Tons.	£	æ ,	£	£	d.	d.	₩ cent.	£	£	₩ cent.
1855	14	98,846	140	9,093	156	9,249	5,959	157:34	101.32	64.43	3,290	515,347	.638
1856	23	350,724	2,469	29,526	2,757	32,283	21,788	113.32	76.48	67.49	10,495	683,217	1.236
1857	40	329,019	20,847	34,970	8,417	43,387	31,338	96.28	69.75	72.23	12,050	1,023,838	1.146
1858	55	376,492	33,385	45,858	16,451	62,309	43,928	105.69	74.21	70.20	18,381	1,231,867	1,495
1859	55	425,877	43,020	46,502	15,258	61,760	47,598	100.41	77:38	77.07	14,162	1,278,416	1.102
1860	70	551,044	55,394	45,428	16,841	62,269	50,427	83.37	67.2	80.98	11,841	1,422,672	*832
1861 '	73	595,591 ,	101,130	49,637	25,367	75,004	61,187	83.77	68.34	81.28	13,817	1,536,032	.899
1862	97	642,431	205,139	62,096	41,775	103,871	68,725	90.49	60.07	, 66.16	35,146	1,907,807	1.845
1863	124	627,164	218,535	71,297	52,644	123,941	96,867	94.38	73.76	78.16	27,073	2,466,950	1.092
1864	143	. 693,174	379,661	81,487	66,167	147,653	103,715	85.30	59'92	70.24	43,938	2,631,790	1.669
1865	143	751,587	416,707	92,984	73,048	166,032	108,926	82.42	54.07	65.60	57,106	2,746,373	2,020
1866	143	668,330	500,937	85,636	82,899	168,535	106,230	82.49	21.99	63.64	62,305	2,786,094	2.536
1867	204	616,375	517,022	87,564	101,508	189,072	117,324	82.03	46.87	62.08	71,748	3,282,320	2.182
1868	247	714,563	596,514	99,408	124,951	224,359	144,201	70.06	45.03	64.29	80,158	4,060,950	1.973
1869	318	759,635	71,4,113	109,427	155,548	264,975	176,362	71.17	47.37	66.57	88,613	4,681,329	1.892
1870	339	776,707	766,523	117,854	189,288	307,142	206,003	18:18	54.86	67.08	101,139	5,566,092	1.812
1871	358	759,062	741,986	129,496	225,826	355,322	197,065	91.22	50.79	55.46	158,257	5,887,258	2.688
1872	398	753,910	825,360	164,862	. 260,127	424,989	207,918	98.43 .	48.12	48.92	217,071	6,388,727	3'397
1873	403	875,602	923,788	178,216	306,020	484,236	238,035	104.71	51.47	49.16	246,201	6,739,918	3.623
1874	403	1,085,501	1,070,938	188,595	347,980	536,575	257,703	103,00	49.21	48.03	278,872	6,844,546	4.024
1875	473	1,288,225	1,171,354	205,941	408,707	. 614,648	296,174	100'20	48.28	48.18	318,474	7,245,379	4.396
1876	509	1,727,730	1,244,131	233,870	459,355	693,225	339,406	98·50	48.22	48.96	353,819	7,990,601	4.428
1877	598	2,957,144	1,430,041	271,588	544,332	815,920	418,985	92.95	47.73	51.35	396,935	8,883,177	4:468
1878	6881	3,705,733	1,625,886	306,308	596,681	902,989	536,988	81.65	48.54	59.47	366,001	9,784,645	3'741
1879	734½	4,317,864	1,720,815	319,950	632,416	952,366	604,721	77.94	49.49	63.49	347,645	10,406,495	3'341
r880	8491	5,440,138	1,712,971	390,149	770,868	1,161,017	647,719	86.03	47'99	55'79	513,298	11,778,819	4°358
1881	995½	6,907,312	2,033,850	488,675	955,551	1,444,226	738,334	88.33	45.16	51.15	705,892	13,301,597	5'307
1882	1268½	8,984,313	2,619,427 1	587,825	1,111,038	1,698,863	934,635	84.05	46.54	55.05	764,228	15,843,616	5.132

No. 56.

STATEMENT of the number and classification of persons employed on the Railways and Tramways of New South Wales during 1882.

No.	Tramways of New South Wales durin Position.	Rates of Pay—lowest and highest.
10.		Among of Fay —15 wood data ingroom
, I I 2	HEAD OFFICE. Commissioner Secretary Chief Clerk Land Valuers Draftsmen Accountant Assistant Accountant Chief Cashier and Paymaster Cashier Examiner of Accounts Book-keeper (Principal) (Assistant)	£1,000 per annum. £600 " £350 " £550 and £600 per annum. £250 and £350 " £450 per annum. £400 " £350 " £375 " £3300 "
46 7 1 	Clerks	£1 per week to £300 per annum. £1 per week to £126 per annum. £60 per annum.
1 1 1 4 38	AUDIT OFFICE. Traffic Auditor Assistant do. Chief Clerk. Inspectors of Station Accounts Clerks (18 Audit, 14 Statistical, 6 Tramways)	
45 I I 24 2 4 36	Total. STORE. Storekeeper	£350 per annum. £275 " 10s. per week to £225 per annum. £175 and £200 " 6s. to 7s. per night. 6s. to 10s. per day.
181	Total, Head Office.	
1 1 1 1 1 1 3 3 1 4 1 1 8 1 4 1 1 3 7 8 1 1 1 7 4 1 4 3 2 4 3 3 4 5	ENGINEER-IN-CHIEF'S BRANCH. OFFICE STAFF. Engineer-in-Chief Inspecting Engineer Assistant Engineer for Trial Surveys ,,, Office Staff Draftsmen Assistant Draftsmen Chief Clerk Clerks Cadets Custodian of Plans Messengers Total. FIELD STAFF. District Engineers Assistants to District Engineers - Surveyors Inspectors Chainmen Total.	£800 £700 , £700 , £200 to £425 per annum. £150 to £175 per annum. £500 per annum. £52 per annum, cf52 per annum, or 7s. per day when in the field. £125 per annum. 1 at £100, 1 at £75 per annum, and 1 at 10s. per week. £350 to £600 per annum. £150 to £250 per annum. £150 to £250 per annum. £100 to £400 , 8s. to 18s. per day.
1 1 1 6 6 6 3 5 1 25	Total, Engineer-in-Chief's Branch. ENGINEER FOR EXISTING LINES OF RAILWAYS AND TRAMWAYS. OFFICE STAFF. Engineer for Existing Lines. First Clerk. Draftsman and General Inspector of Buildings Engineer and Draftsman Surveyors Draftsmen Cadets Clerks Messenger Total.	£1,000 per annum. £350 ,, £350 ,, £6 15s. per week. £4 to £6 per week. £200 to £350 per annum. 10s. per week. £1 10s. to £4 per week.
5 1 10 18	LOCOMOTIVE ENGINEER'S BRANCH. Locomotive Engineer. First Clerk Draftsmen Cadet Clerks Total.	£450 ,, £3 to £6 per week. £1 per week.

No. 56—continued. LOCOMOTIVE DEPARTMENT.

STATEMENT of the number and classification of persons employed in the Locomotive Branch, year 1882.

## ## ## ## ## ## ## ## ## ## ## ## ##	· Rates	s. ·	General Overseer.	LocomotiveForeman	Clerks.	Inspectors.	Engine-drivers (Locomotive).	Engine-drivers (Stationary).	Firemen.	Cleaners.	Fitters.	Turners & Machinists	Blacksmiths.	Strikers.	Boilermakers.	Assistant Boilermakers.	Pattern-makers and Carpenters.	Painters.	Assistant Painters.	Carriage and Waggon Builders.	Labourers.	Fuelmen.	Pumpers.	Timekeepers.	Foremen.	Brass moulders, Finishers, and Coppersmiths.	Ganger.	Carriage-trimmers.	Tinsmiths.	Apprentices.	Carriage and Waggon Examiners.	Carriage-lifters.	Watchmen.	Improvers.	Engine-drivers (Shunting).	Total.
	£338 £235 £230 £235 £200 £195 £185 £156 £150 £150 £135 £120 £95 £80 £5135 £50 £6 10s. per we £6 £5 15s. £5 15s. £4 16s. £4 48. £4 15s. £4 10s. £4 15s. £1 10s. 16s. per da 15s. 14s. 13s. 12s. 12s. 12s. 11s. 10d. "	eck			 																				I											2 1 1 1 2 2 1 3 1 1 1 3 2 1 4 1 5 2 2 1 4 1 2 2 1 2 1 2 1 2 2 1 2 2 3 3 6 2 2 3 2 3 2 3 2 3 2 3 2 3 2 3

No. 56—continued.

LOCOMOTIVE DEPARTMENT—continued.

STATEMENT of the number and classification of persons employed in the Locomotive Branch, year 1882.

Rates.		General Overseer.	LocomotiveForemen	Clerks.	Inspectors.	Engine-drivers (Locomotive).	Engine-drivers (Stationary)	Firemen.	Cleaners.	Fitters.	Turners& Machinists	Blacksmiths.	Strikers.	Boilermakers.	Assistant Boiler- . Makers.	Pattern-makers and Carpenters.	Painters.	Assistant Painters.	Carriage & Waggon Builders.	Labourers.	Fuelmen.	Pumpers.	Timekeepers.	Foremen.	Brass moulders, Finishers, and Coppersmiths.	Gangers.	Carriage-trimmers.	Tinsmiths.	Apprentices.	Carriage & Waggon Examiners.	Carriage-lifters.	Watchmen,	Improvers.	Engine-drivers (Shunting).	Total.
Brought for 11s. 8d. per day 11s. 6d. " 11s. 4d. " 11s. 2d. " 10s. 10d. " 10s. 8d. " 10s. 4d. " 10s. 2d. " 10s. 2d. " 9s. 10d. " 9s. 8d. " 9s. 6d. " 9s. 8d. " 9s. 6d. " 9s. 4d. " 9s. 2d. " 9s. 4d. " 9s. 4d. " 9s. 4d. " 9s. 6d. " 5s. 6d. " 7s. 6d. " 7s. 6d. " 7s. 6d. " 7s. 6d. " 7s. 6d. " 7s. 6d. " 7s. 6d. " 7s. 6d. " 7s. 6d. " 7s. 6d. " 7s. 6d. " 7s. 6d. " 7s. 6d. " 7s. 6d. " 7s. 6d. " 1s. " 1s. 9d. " 1s. "	ward					81		58		3 4 3 15 7 7 19 7 6 3 1 1	3 3 3 5 1 1 5 5 4 4 3 3 1 2 2 6 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 1 8		3, 1, 1, 2, 6, 2, 4, 2, 1, 1,			7				 				3	 				13	3 3 1 5 5				10 5 23 8 98 13 17 32 27 8 104 28 28 41 17 18 78 4 75 234 101 24 35 24 36 43 77 2 3 3 5 2 3 3 3 5 2 3 3 3 5 2 3 3 3 5 3 3 5 3 5
Total	••••	ı	2	7	19	290	8	307	236	107	58	31	48	ź1	47.	12	29	19	63	171	109	51	19	15	15	2	8	2	28	. 33	12	2	4	1	1807

APPENDIX TO REPORT ON RAILWAYS-1882.

No. 56-continued. STATEMENT of the Number and Classification of Persons employed in the Engineer for Existing Railways Branch, year 1882. Watchme Carters. 54 5 7 73 16 56 39 75 19-15 3 23 34 10 1482

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TrA	No.
LBAFFIC	ö
BRANCH.	-continued.

forward.	#600 per amm. 3500 per amm. 3250 per amm. 2275 per amm. 2275 per amm. 2275 per amm. 2275 per amm. 2275 per amm. 2276 per amm. 2277 per amm.	Rate
:-	::::::::::::::::::::::::::::::::::::::	Traffic Managers.
2		Wharfingers.
		Goods Superintendent.
		Coaching Superintendent.
8		Traffic Inspectors.
		Paymaster.
-	::::::::::::::::::::::::::::::::::::::	Relieving Station-masters.
101	::::::::::::::::::::::::::::::::::::::	Station-masters.
1 168	: : : : : : : : : : : : : : : : : : :	Clerks.
 		Cashier.
14	wininino::::::::::::::::::::::::::::::::	Foremen.
-		Assistant Wharfinger.
1 223	: : : : : : : : : : : : : : : : : : :	Telegraph Operators.
3		Telegraph Inspector.
r 63	4 500 H ON H : : : : : : : : : : : : : : : : : :	Signalmen, Shunters, and Pointsmen.
3 209	04 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Guards.
9 1205	:::::::::::::::::::::::::::::::::::::::	Gatekeepars.
5 2		Printers.
2 209	5599 H: HH:	Porters.
	H: H: H: H: H: H: H: H: H: H: H: H: H: H	Tarpaulin Makers.
2		Messengers.
8		Ladies' Attendant.
4	HI I I I I I I I I I I I I I I I I I I	Watchman.
8 1236		Total.

No. 56—continued.
Thappic Branch.

	Total	1/2 ,,	1/9 ,,	4/- "	5/- "	5/6 "	6/- "	6/6 . "	7/- "	7/6 per day	Brought forward	Rate.
	N,	:	:	:	:	:	•	÷	:	:	ы	Traffic Manager.
	ы	:	Ė	•	:	÷	÷	÷.	:	:	ю	Wharfinger.
	н	:	:	:	:	<u>:</u> .	÷	:	:		. н	Goods Superintendent.
	н	:	:	:	:	:	:	. :	• :	:	н	Coaching Superintendent.
	S	. :	:	:	:	:	:	÷	:	:	∞	Traffic Inspectors.
	H	:	:	i	÷	:	:	:	:	:	н	Paymaster.
\cdot	N	:	:	:	:	:	:	:	:	:	ы	Relieving Station-masters.
	101	:	·	:	:	:	:	:	:	÷	101	Station-masters.
	175] :	:	:	;	:	н	:	4	N	168	Clerks.
-	H	:	:	:	:	:	:	:	:	: .	н	Cashier.
-	14	:	:	:	:	÷	÷	÷	÷	:	14	Foremen.
	н	:	ŧ	:	:	:	:	:	:	:	н	Assistant Wharfinger.
	224	:	:	:	:	:		i	:	:	223	Telegraph Operator.
	H	:	:	:	:	Ε,	:	:	:	÷	н	Telegraph Inspector.
	154	:	:	÷	:	:	N	H	60	28	63	Signalmen, Shunters, and Pointsmen.
-	249	:	:	;	:	:	:	:	27	13	209	Guards.
	242	ນ	ы	į	н	:	13	. ω	15		205	Gatekeepers.
-	ผ	:	:	:	:	:	:	:	:	:	2	Printers.
-	968	:	÷	н	. N	н	37	14	645	59	209	Porters.
-	18	:	:	:	H	; ·	N	н	12	:		Tarpaulin Makers.
, -	∞	:	:	÷	:	i	į	:	:	:	8	Messenger.
-	4	:	÷	:	:	÷	:	:	:	:	4	Ladies' Attendant.
-	22	:	:	:	:	:	H	ယ	9	н	∞	Watchman.
	2201	N	N	н	4	н.	57	22 .	772	104	1236	Total

No. 56—continued.

Statement of the Number and Classification of Persons employed in Traffic Branch, Tramways, for year ending 31st December, 1882.

		15/- ,,	30/-	2), ber neer.		7/- 5	7/6	7/-	7/-	7/0	0/-	3,	2/-			7/0 33	of per mem	8/- per diem	7/0 "	e	0/0 ,,	9/2 ::	101- "	12/- ,,	7/- per cuem	20/- ,,	25/- per week	01. "	le' per cuem	#50 y	#225 » ···	£400 Pannm.		Rate.
8	H	:	:	:	:	:	:	:	•	:	:	:	;	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	H	_	Super- inten- dent
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١	4	:	:	:	٠:	:	:	:	:	:	:	:	<i>.</i> :	:	:	:	;	:	:	:	:	:	:	:	+	Ŋ	н	:	:	:	:	:		Ticket Clerks.
	4	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	N	N	:	:	:	:	:	:	:	:		Traffic Fore- men.
	96	:	:	:	:	:	:	:	:	:	:	:	. :	:	:	:	:	н	04	3	0	, 10	:	:	:	:	:	:	:	:	:	:		Con- ductors.
	91	:	÷	÷	:	:	÷	:	:	:	:	:	:	:	Ċ	7	4	. :	:	:	:	:	:	:	:	:	:	:	÷	÷	:.	:		Points- men.
	4	:	፥	፥	:	:	:	:	:	:	:	:	N	ы	:	:	:	:	÷	:	:	;	:	:	:	:	:	:	:	:	:	:		Points- Point- men. cleaners
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	4	÷	:	:	:	:	:	4	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:		Car- oilers.
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	-	+	:	፥	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	_	Waiting room Attendant.
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No. 56—continued.

Statement of the Number and Classification of Persons employed in the Rolling Stock Branch of the Tramway Department, on 31st December, 1882.

No. 56-continued.

STATEMENT of the Number and Classification of persons employed in the Permanent Way Branch of the Tramway Department, at 31st December, 1882.

	Inspectors.	Sub-Inspectors.	Gangers.	Labourers.	Gangers— Flying Gangs.	Labourers— Flying Gangs.	Carters.	Blacksmiths.	Time-keepers.	Clerk.	Boys.	Total.
£5 10s. per week £1 per diem 15s. 12s. 12s. 10s. 10s. 10s. 10s. 10s. 10s. 10s. 10	1 1 1 	 1 3 1 1 	13	36 36		74	41	1 	 1 	 1 	 1 2 2	1 1 3 44 2 2 14 1 110 1 2 2

SUMMARY.

Head Office		181
Engineer-in-Chief's Branch—		101
Office Staff	78	
Field Staff	345	400
Engineer for Existing Lines		423
Engineer for Existing Lines Office Staff	25	
Permanent Way	2,828	0.050
Locomotive Engineer's Branch—		2,853
Office Staff	18	
Locomotive Stan	1,807	1.00
Traffic Branch		$\frac{1,825}{2,201}$
Tramway Branch—	,	-,
Rolling Stock Staff	462	
Permanent Way Staff Traffic Staff	183	
210000 0100	189	834
·		8,317
,		

No. 57.

RETURN of the Total Amount paid for WAGES on the different Branches of the Railway and Tramway, 1881-82.

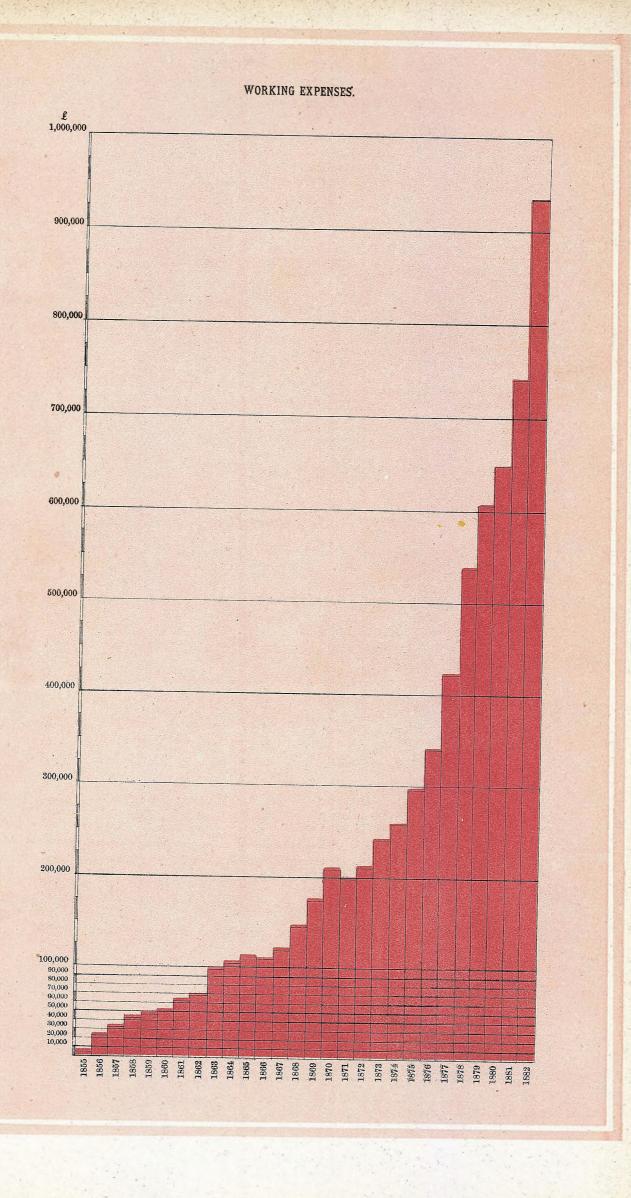
Branch.	South and West.	, North.	Total.
Locomotive—	£ s. d.	'£ s. d.	£ s. d.
1881	156,465 14 9 ·	42,103 7 0	198,569 1·.9
1882	193,848 7 11	48,339 5 0	242,187 12 11
Permanent Way— 1881 1882	221,019 8 7	37,949 16 11	258,969 5 6
	299,808 6 4	45,386 0 11	345,194 7 3
Traffic— 1881	130,357 II 9	38,499 2 3	168,856 14 0
	154,113 I4 I	47,377 14 4	201,491 8 5
Total all Branches— 1881 1882	507,842 15 1	118,552 6 2	626,395 I 3
	647,770 8 4	141,103 0 3	788,873 8 7
Tramway— 1881	46,407 10 4 91,792 8 4		46,407 to 4 91,792 8 4

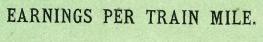
No. 58.

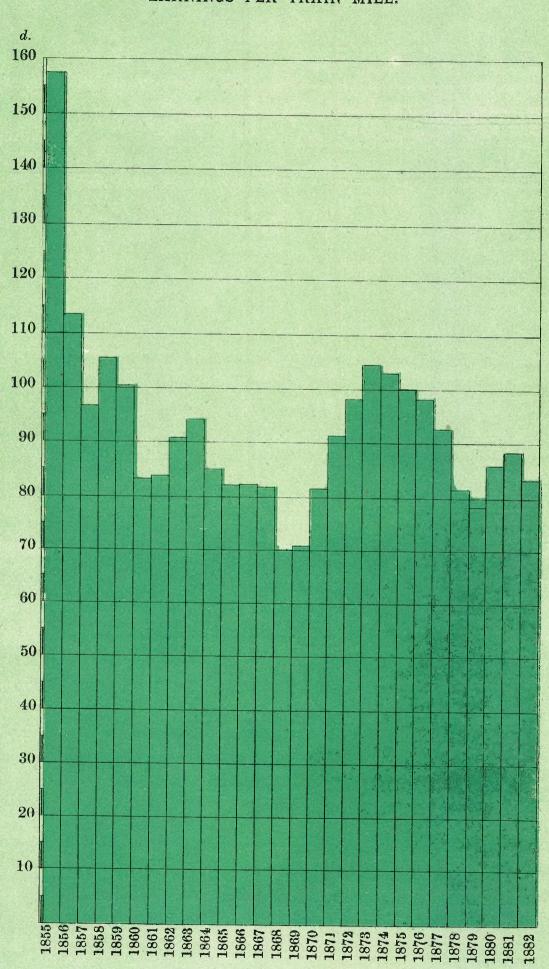
Return of Free Passes issued during 1882, specifying the different Services.

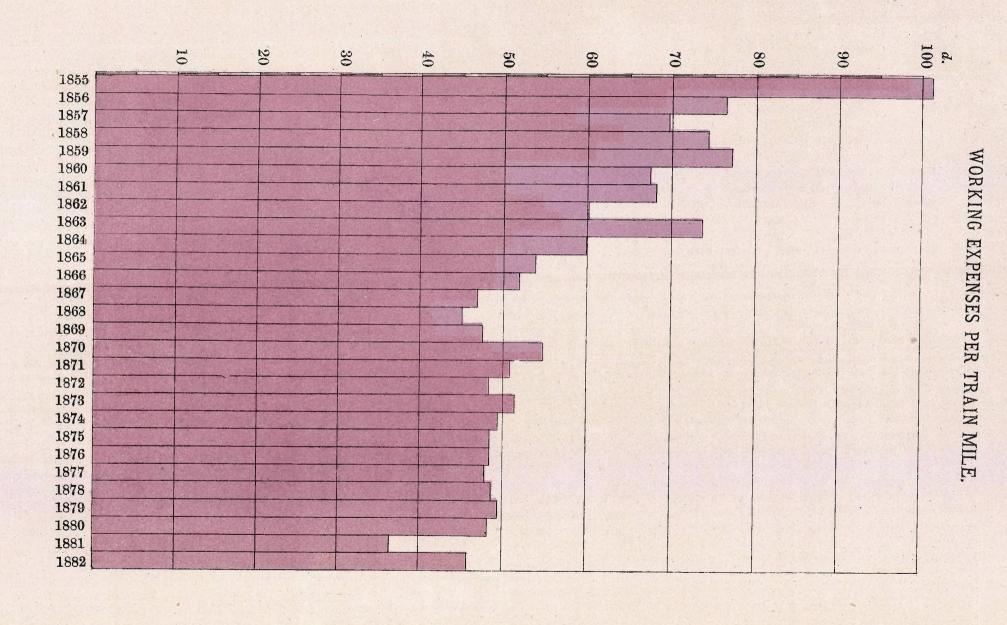
Why granted.									No. issued.
_									1
Visitors of distinction	•••							<i>:</i>	284
Press purposes	•••	·							239
udges on Circuit			•••	•••					14
Volunteers on duty									2,264
ntercolonial Rifle Match				•••	•••				20
" Rowing "	•••					•••]	10
الماءة ا			•••		•••	•••	•••]	$\tilde{16}$
Football Toom		•••	•••	•••	••• .	•••			17
Workmen seeking employme				-	•••	•••	•••		1,488
			•	•••	•••	•••	•••	•••	856
Boys, ship "Vernon"		••• '	•••	•••	•••	•••	•••		2
Officers and Seamen, H.M.	Wan Sh	ina ·	• • •	•••	•••	•••		•••	76
11 70 .			•••	••• ,	• • •	•••	•••	•••	2
	···.	•••	•••	•••	••• .	•••	•••		12
Varrabri Hospital	•••	•••	•••	•••	• • •	•••	•••	•••	
Taitland ,,	•••	•••	• • • •	•••	• • •	•••	•••	•••	9
st. Vincent's "	•••	•••	• • •	• • •	• • •	•••	•••	• • • •	1
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doulburn "	•••			• •••			•••	•••	1
cone "				•••			• • •	}	.1
Brookside Convalescent ${f H}$ or	ne	•••			• • •				42
Hill End Hospital						• • • •			2
Lithgow Juvenile Exhibition	٠ ١		•••						2
ecturers going to Schools o	f Art								2
Sydney Juvenile Exhibition									2
Fire Brigades Demonstration				•••					502
Aborigines	•••						•••]	2
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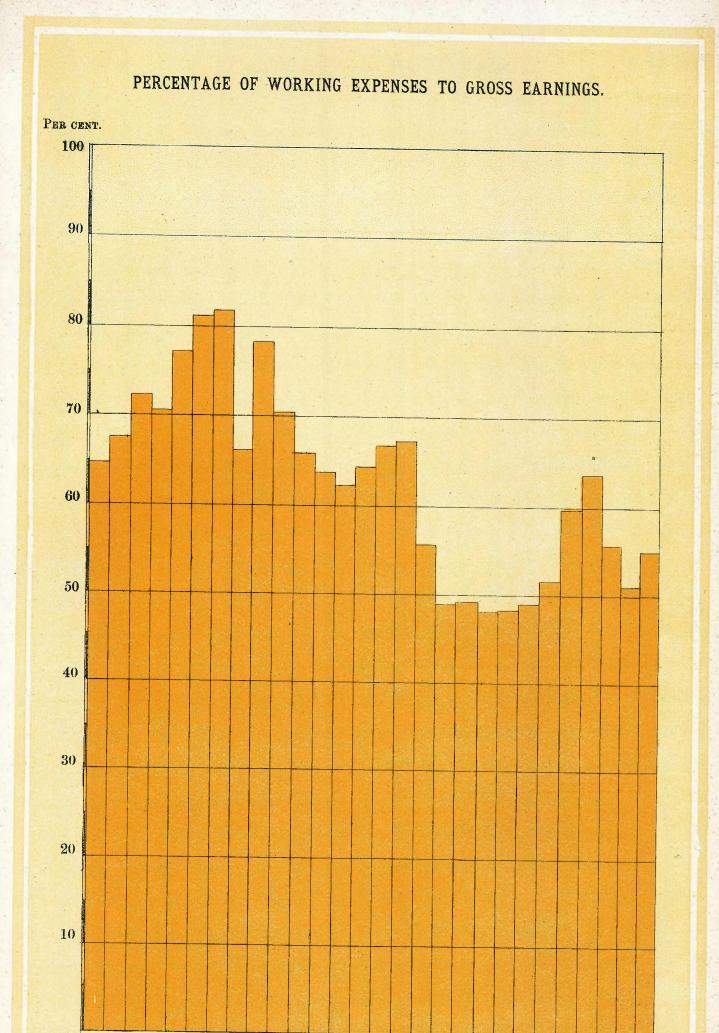
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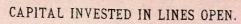


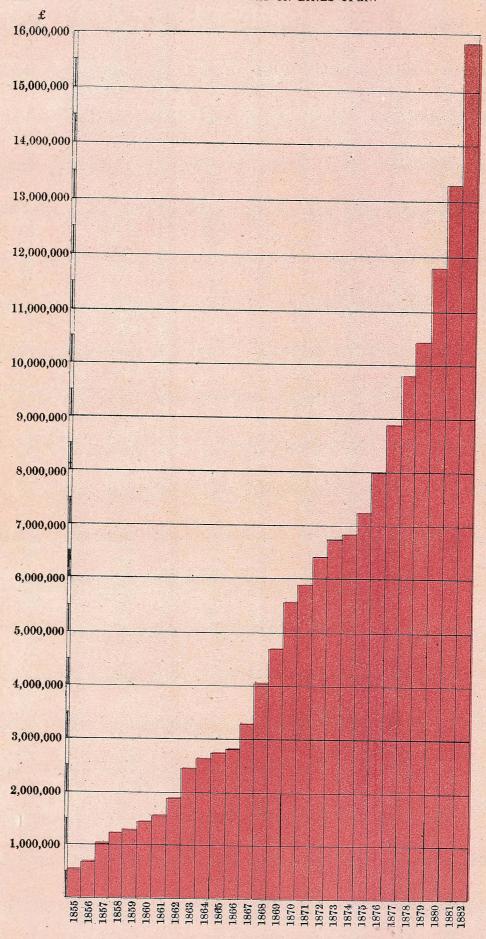




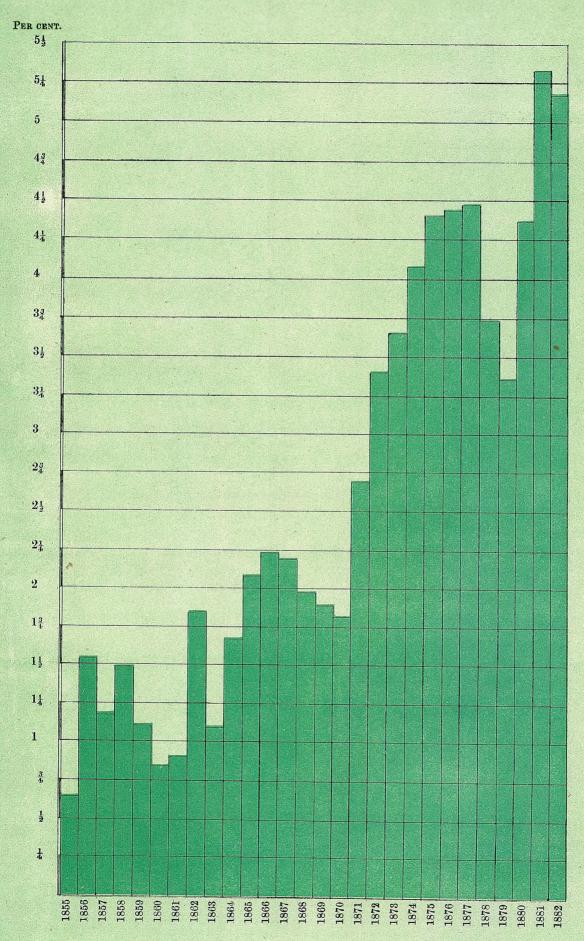


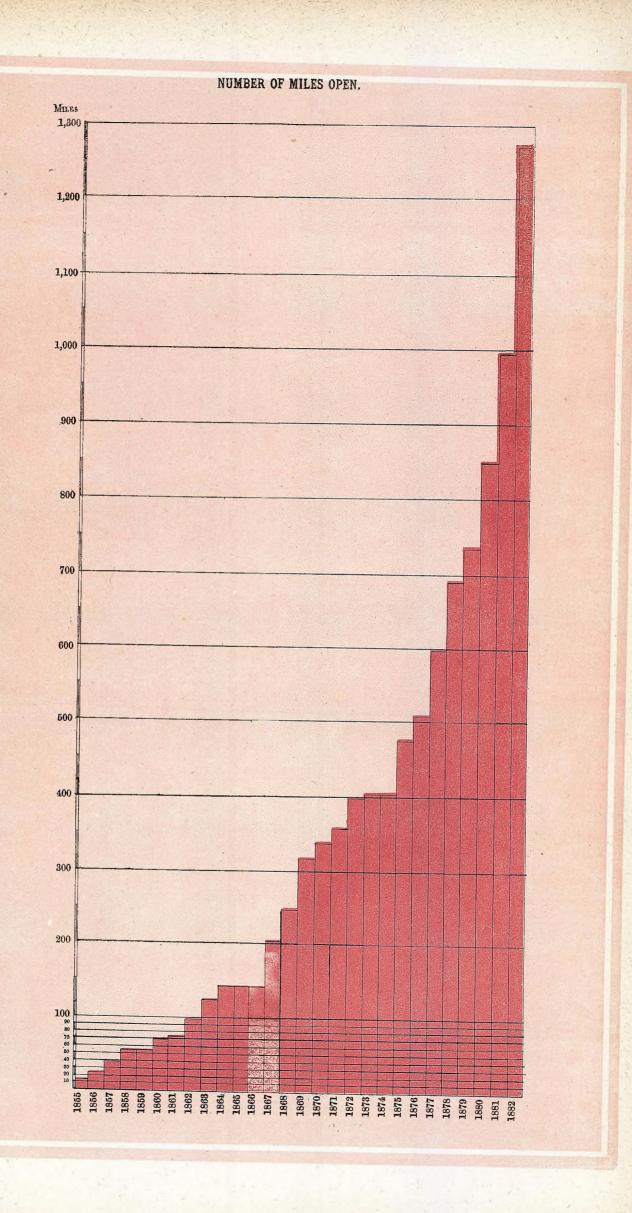


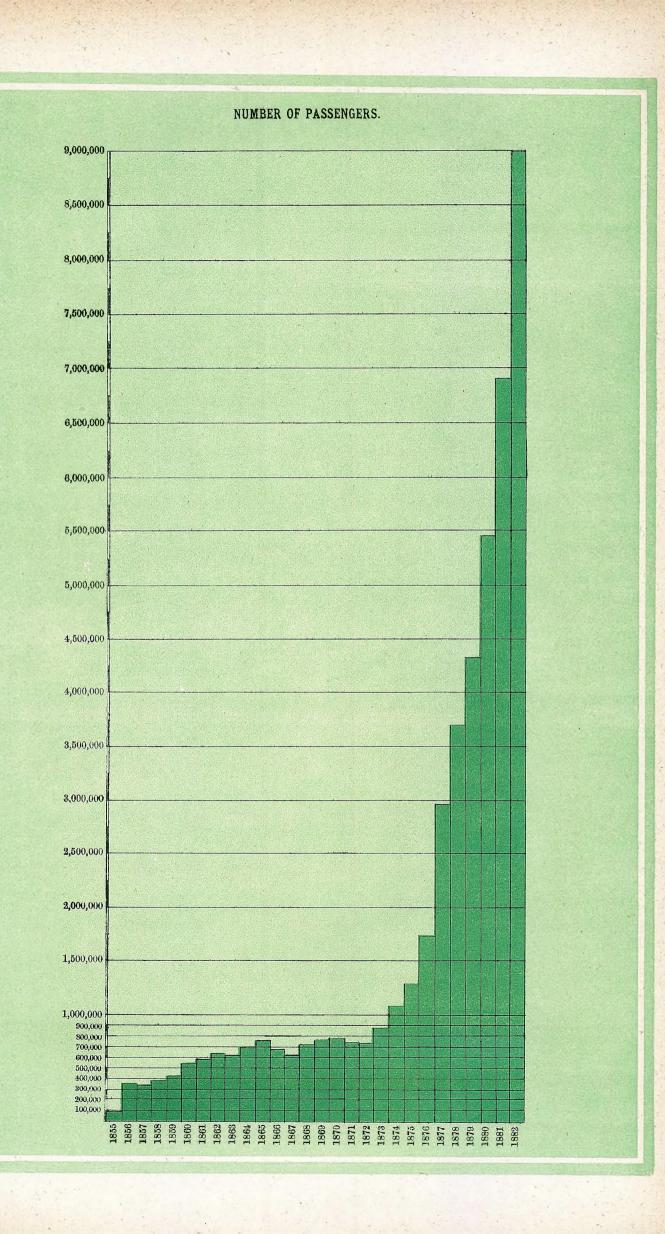




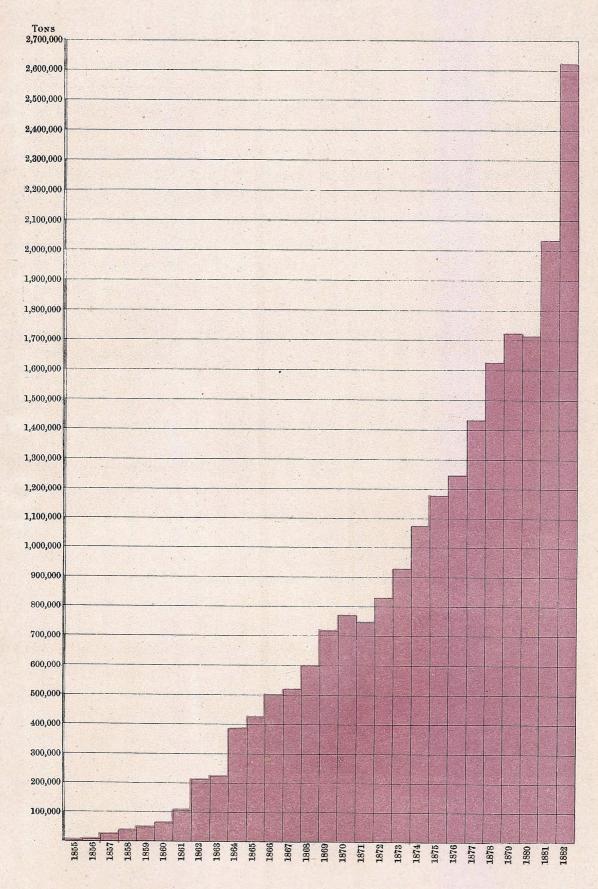
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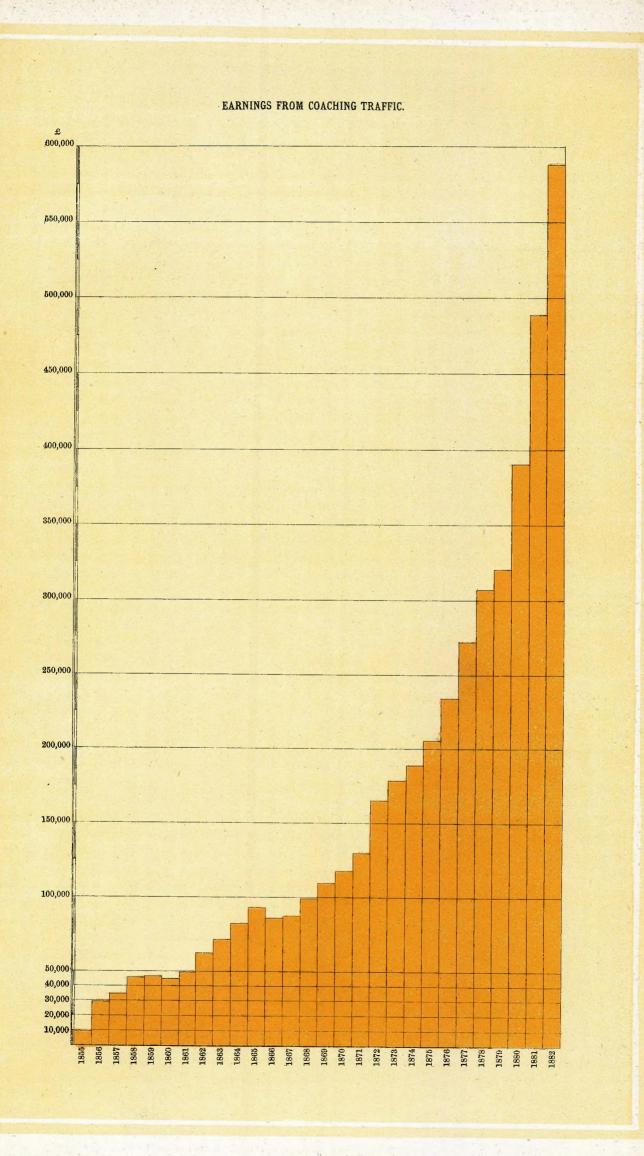


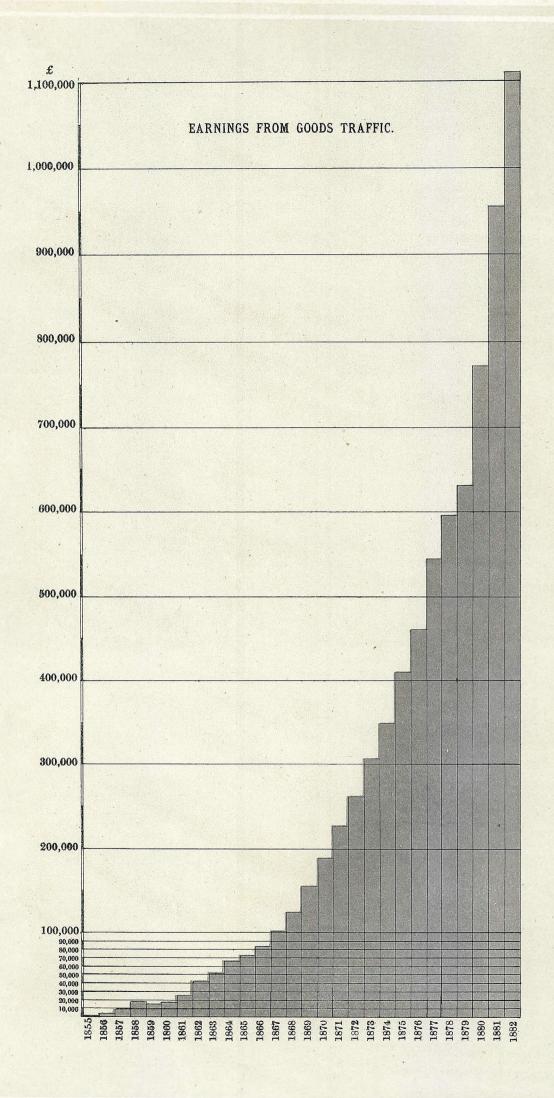


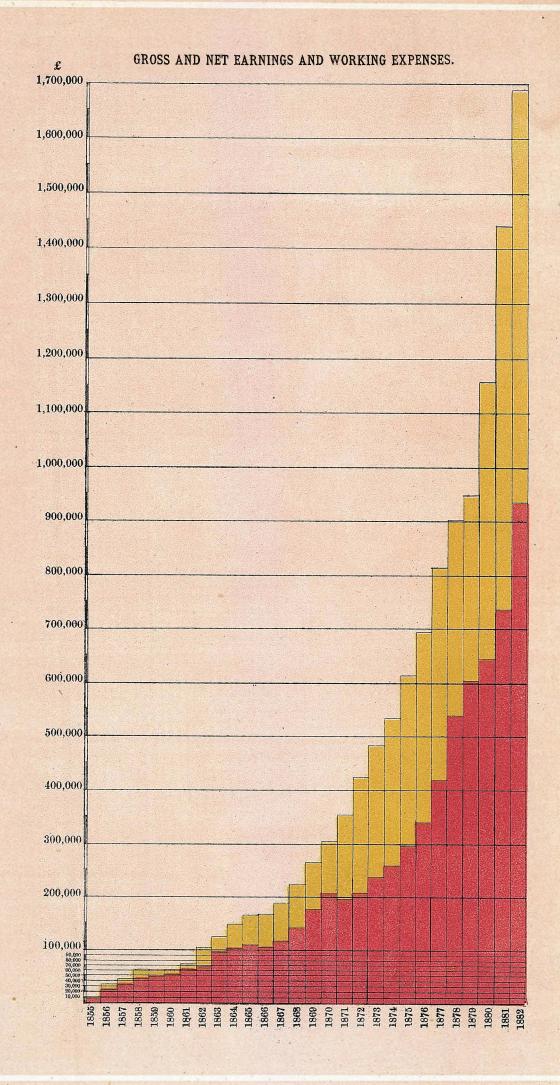


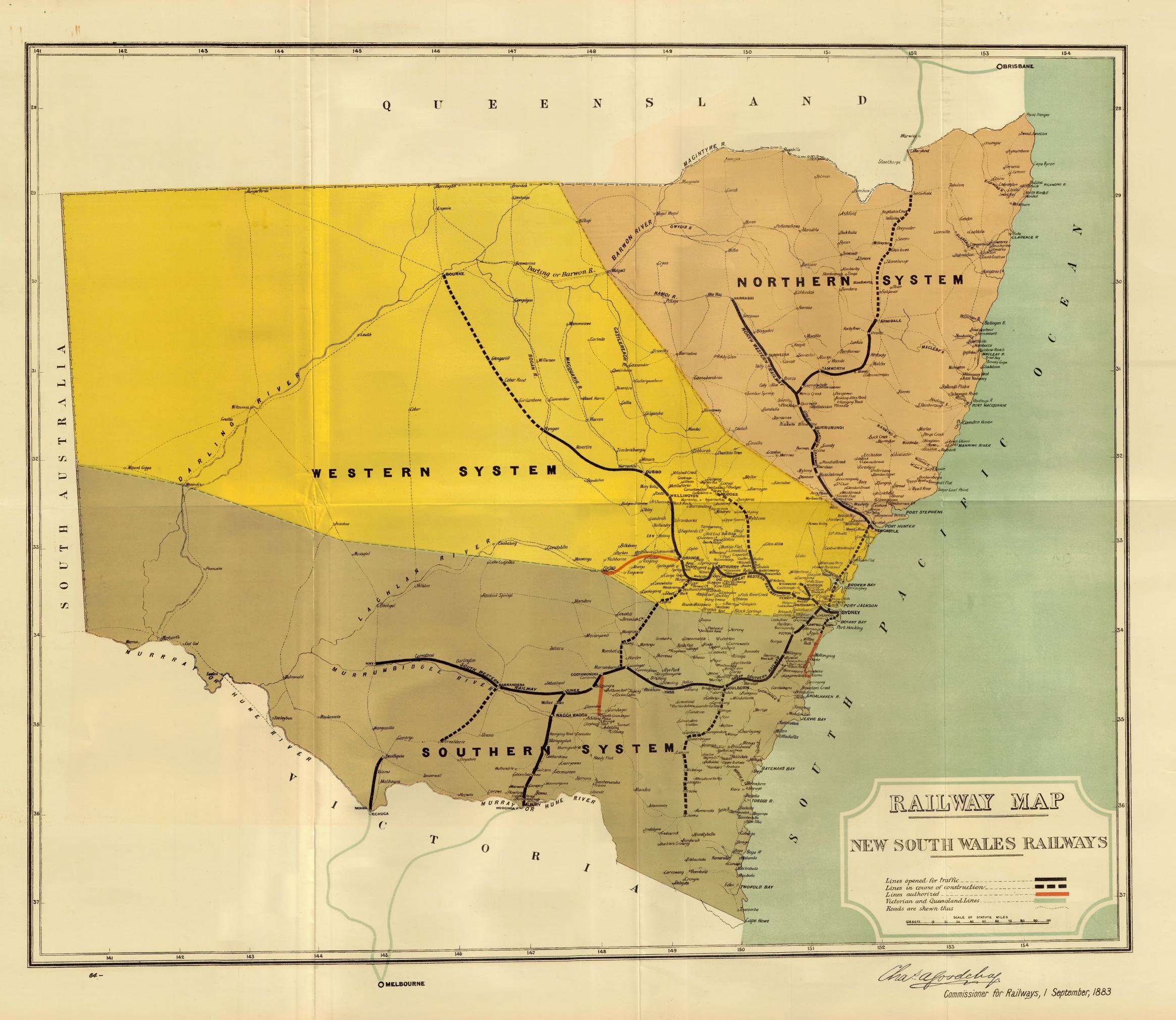
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NEW SOUTH WALES.

RAILWAYS AND TRAMWAYS

OF

NEW SOUTH WALES.

REPORT

BY

THE COMMISSIONER FOR RAILWAYS

FOR THE YEAR

1883.

Presented to Parliament by Command.



SYDNEY: THOMAS RICHARDS, GOVERNMENT PRINTER

1884.

.1188—A

[1,500 copies—Approximate Cost of Printing (labour and material), £440 9s. 9d.]

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NEW SOUTH WALES.

RAILWAYS OF NEW SOUTH WALES.

(REPORT FOR 1883.)

The Commissioner for Railways to The Honorable the Secretary for Public Works.

Department of Public Works, Railway Branch,

SIR.

Sydney, 1 September, 1884.

I have the honor to submit, for the information of the Government, a statement of the transactions of this Department for the year 1883.

No. 1.—RAILWAY CAPITAL AUTHORIZED.

At the close of 1882 the amount of Loans authorized was £26,654,161. Railway Debt. The total Nos. 8 & 9, During 1883 an additional amount of £1,245,000 was authorized. amount of Debentures issued at the close of 1883 was £18,388,100, leaving a pp. 74-80. balance of £9,511,061 still to be raised.

The Railway capital bears interest as follows:

£7,062,300—5 per	cent.		` .	•••	•••	annual interest	£353,115
11,325,800—4	,,	•••	• • •	•••	•••	,,	£453,032
9,511,061—4	,,	•••	(still to	be rais	ed)	39	£380,442

The average interest being 4.25 per cent., equal to £1,186,589.

2.—RAILWAY CAPITAL EXPENDED.

At the close of 1883 there had been expended on lines open for traffic, Capital £16,915,515,* and on lines in course of construction, £2,272,949; in all, expended. Appendix CO 411 299 was expended in the Nos. 10 & 11, £19,188,464, of which amount the sum of £2,411,822 was expended in the $\frac{N_{OS.}}{pp.}$ 81-92. year 1883, as under:-

Construction		•••	• • •	•••	£2,017,351
Rolling stock		ry, &c.	•••	•••	376,224
Trial surveys	•••	•••	•••	•••	18,247

£2,411,822

The

^{*}Includes cost of old Pitt-street Tramway, taken up in 1867, and £5,623, cost of rolling stock used on Camden Tramway.

The sources from which the money expended on Railway lines open for traffic have been obtained are—

From Loans £16,235,923 ,, Revenue 669,091

£16,905,014*

The interest bearing capital expended on lines in operation was therefore only £16,235,923, and, as some portions of the lines were in operation for parts of the year only, the net returns for 1883 will pay at the rate of 4.66 per cent. per annum for the period during which the lines were working; but in calculating the interest which the net receipts give, the whole amount of capital expended on lines open has been, as in past years, included without regard to the source from which it has been obtained. The percentage to capital is consequently reduced from 4.66 to 4.48.

3.—LINES OPEN AND IN PROGRESS.

Of the sum £2,017,351 expended in 1883 for construction, the sum of £680,684 was expended on lines open for traffic, and the balance £1,336,667 invested in unproductive lines in course of construction.

Additions to Capital Account—Lines open for Traffic.

Additions to Capital Account. In the year 1882 the capital invested in open lines was £15,843,616; during 1883 a further sum of £1,061,398 was added, making the total capital invested £16,905,014.

The amount of £1,061,398 was made up as follows:	s, viz.:	
Amount transferred from construction account, &c.		10,113
Expenditure during 1883 on construction		466,114
Additions and improvements to works and stations, &c.		£214,570
^{a.} Additional rolling stock, machinery, and workshops, &c		370,601
		07.007.000

£1,061,398

Nature of Capital Account.

See detail in Appendix 10a

As some misapprehension appears to exist as to the character of the charges which should be debited respectively to the construction and revenue accounts, and as the action of the Department in this respect has been challenged, a few remarks on the subject may not be out of place.

Exception so emphatic indeed has been made to the items debited in the accounts of the Department to construction that it would almost seem as if the view were entertained that when once a Railway is brought to the point of being opened and handed over for traffic purposes the construction or capital account should be closed, and that thenceforward all expenditure of every kind should be charged to revenue. Although this view is opposed to the established principle of Railway accounting and to general commercial practice, it has been advocated by some persons even in England, but it has been under unusual circumstances and in times of great excitement, when apprehension and prejudice have got the better of sound judgment. For instance, some years ago, after the discovery of certain Railway malpractices in transferring amounts wholesale from the working expenses account to the capital account, and thereby showing a handsome but fictitious profit—

large

^{*} Excluding the cost of the old Pitt-street Tramway, which was taken up in 1867, and value of rolling stock used on Camden Tramway Line.

7

large dividends being paid which really came out of capital, an outcry was raised on some of the Railways for the final closing of the capital account. Resolutions to this effect were proposed by anxious and indignant shareholders, and in some cases, I believe, carried, but the force of events, and the laws which govern these transactions, were stronger than the ill-directed and mistaken determination of individuals, and it was soon found that the plan was impracticable, and was of necessity abandoned. Shareholders came to see that if their capital accounts were closed two courses only were open to them-either to abstain from all expenditure required for the augmentation or improvement of their business, or else to make allpayments for such purposes from revenue to the sacrifice of legitimate It was found that the accommodation provided at the outset was insufficient for the purposes required, that necessary appliances had been overlooked, that as time went on new channels of trade were opened and population increased. A double line became necessary where a single one had sufficed, enlarged stations and goods-sheds, new sidings, additional engines, carriages, and waggons were required, and the commercial instinct was not slow to perceive that, as all these things represented capital value and tended directly to the earning of new revenue, the cost of them was not a legitimate debit against income. The capital account assumed its proper functions, and in course of time it came to be understood and admitted that, by reason of the influence which Railways exert in the development of traffic, the time could hardly ever arrive when the capital account of a Railway could be safely said to be finally closed.

As to the character of the charges which should properly be debited to the capital account, there is no diversity of opinion among the authorities.

An American writer—Kirkman, who is the recognized authority in his own country, and whose views are accepted in England—has been freely quoted lately, and I will therefore only refer to his opinion so far as to quote the broad rule which he lays down. He says—speaking, of course, of Railways—that the construction account represents "the original cost of the property, and should include the cost of all improvements which add value and increased stability to the property."

A great English railway authority (the late Seymour Clarke, who was for many years at the head successively of the Great Western and Great Northern Railways) held that the cost of everything not in the nature of a renewal or a repair or an ordinary working charge should be carried to construction; in short, that the cost of every new work and of every improvement and addition, whether provided for the purposes of new traffic or because the accommodation or appliances originally provided were found to be insufficient for the traffic should be paid by capital. Again, the writer of the article on capital in the last edition of the Encyclopædia Britannica thus defines capital:— "The common characteristic of capital is that of a fund yielding a return and reproducing itself whether the time to this end be long or short." definition, which is that of a man who is no mean authority in matters of finance, marks well the distinction between capital and income. Money invested in any way and yielding a return is capital, the return is the revenue The functions of the two are not, and cannot be made, interchangeable, and, adopting the views of this writer, it is by no means easy to

see how any confusion can have arisen as to the nature of the charges which should be debited to the two heads of account respectively.

It will seem that these three authorities, although their views are expressed in language so diverse, are in principle completely in accord. With regard to the application of this principle to the Railways of New South Wales it has been conclusively shown by the papers that have recently been laid before Parliament, that under no circumstances has the capital account been burdened with the cost of works properly chargeable to revenue.

In the following statement is given the length of Railway lines open Appendix No. 4, page 53. for traffic during the year 1883:—

, r O	-										
	Southern and South-western Lines.	Miles									
	South:—In operation at close of 1882—Sydney to Albury ?	Miles. 554									
	South-west—Junee to Hay	OOÆ									
	Opened 14 June, 1883, Albury to River Murray	. 1									
	Total opened 31 December, 1883	555									
	Western Line.										
	In operation at close of 1882—Sydney to Nevertire (including										
•	Richmond and Mudgee Branches)	367									
	Opened 9 June, 1883, Nevertire to Nyngan	36									
	Total opened 31 December, 1883	403									
	·	005									
	Average for the year	385									
	Northern Line.										
	In operation at close of 1882—Newcastle to Uralla (including										
	Morpeth Branch)	347 ½									
	and Werris Creek to Narrabri	_									
	Opened 1 February, 1883—Uralla to Armidale	15									
	Total opened 31 December, 1883	$\overline{362\frac{1}{2}}$									
	Average for the year	$361\frac{1}{2}$									
Lines opened	The number of miles opened during 1883, viz., 52, is small w										
since close of year.	compared with the mileage opened in 1880, 1881, and 1882, which	h was									
J	respectively 115, 146, and 273 miles, or an average of 178 per an	num ;									
	but notwithstanding this apparent decrease there has been no falling	off in									
	the rate at which the Railway system has been extended. Many	large									
,	contracts were in hand at the close of 1883, and since the beginning of	f this									
	year extensions have been opened from—	004									
	Goulburn to Tarago 23 miles opened 3 January, 1	DD4.									
	Armidale to Glen Innes 63 ,, ,, 19 August, 18 Capertee to Rylstone 32 ,, , 9 June, 1884										
	Superior to 13, 12001	i.									
,	While the lines from— Nyngan to Byrock78 ,,										
	70.1.4 / Mandage 91	•									
	Narrandera to Jerilderie 65 ,,										
	Sydney to Hurstville 9 ,,										
	Tarago to Bungendore 17 ,,										
•	Murrumburrah to Young 18 ,,	will.									

will be opened before the close of the year, making a total for 1883 and 1884 of 388 miles, equal to an average of 194 miles for each year.

The contracts entered into and the progress made with new lines are as follow:—

Western Railway.

Nyngan to Bourke—126 miles.

The contractors, Mann, Carey, & Co., are making every effort to Nyngan to Complete this line, and the first section, viz., from Nyngan to Byrock, will be opened in September. Byrock is within 50 miles of Bourke, the time for the completion of the whole line being 31st March, 1885.

Great Northern Railway.

Glen Innes to Tenterfield.

The extension from Armidale to Glen Innes was opened for traffic on Glen Innes to the 19th August, and the only section now to be completed is that from Glen Innes to Tenterfield. The contractors, Messrs. Cobb & Co., are pushing on with the work, and the line will probably be opened by the end of 1885.

Sydney to Illawarra—1st Section.

The original contract provided for 23 miles, but under an arrangement Sydney to with the contractors the length was reduced to 13 miles, and the greater portion of this section, viz., to Hurstville, will probably be opened during September, 1884.

2nd Section.

On the 22nd July, 1884, tenders were opened for the 2nd section, viz., from 13 to 24 miles. Ten tenders in all were received, and the lowest—that of Rowe & Smith, for £410,319—was accepted. The contract is to be completed by July, 1885.

4th Section.

Tenders for the 4th section, viz., from $33\frac{1}{2}$ to $60\frac{1}{4}$, were opened on the 30th October, 1883, and that of Messrs. Proudfoot & Logan, for £318,526, the lowest of seven received, was accepted.

The work is to be finished by the 30th June, 1886.

The work between 24 and $33\frac{1}{2}$ miles (3rd section) has not yet been let.

Homebush to Waratah.

The tenders of Messrs. A. and R. Amos were accepted last year for Homebush to the two end sections of this line, viz., from Homebush to near the Hawkesbury, and from 50 miles 48 chains to Waratah. The works to be completed by the 1st March and 31st July, 1886, respectively.

Tenders for the intermediate section, viz., from 36 miles 60 chains to 50 miles 48 chains, were opened on the 28th August, 1883, and Mr. George Blunt's, for £293,022, the lowest of five received, was accepted. The work to be completed by 30th September, 1886.

There still remains the bridge over the Hawkesbury to be provided for, the contract for which has not yet been let.

1188 ·· B

Goulburn to Cooma.

Goulburn to

The first part of this line—Goulburn to Tarago—was opened for traffic on the 3rd January, 1884. The section extends to Bungendore, 39 miles from Goulburn, and is to be completed by 31st December next.

Tenders for the 2nd section, viz., from Bungendore to Michelago, $47\frac{1}{4}$ miles, were opened on the 27th May, 1884, and the lowest of five received—that of Messrs. A. Johnstone & Co., for £492,056—accepted. The work to be completed by 30th June, 1887.

Murrumburrah to Blayney. Murrumburrah to Blayney-1st Section, Murrumburrah to Young.

The work on this line is being well pushed forward, and is to be completed by the 31st December, 1884.

Orange to Molong.

Orange to Molong. Tenders for the construction of the above line, a distance of $22\frac{1}{4}$ miles, were opened on the 19th February, 1884, and the lowest of eight received—that of Messrs. Wm. Cain & Co., for £151,091—was accepted. The contract is to be completed by the 30th June, 1885.

Cootamundra to Gundagai.

Cootamundra to Gundagai.

Tenders for the above, a distance of $32\frac{1}{2}$ miles, were opened on the 2nd October, 1883. Eight tenders were received, and the lowest—that of Messrs. M'Sharry & Co., for £167,378—was accepted. The line is to be completed by the 30th June, 1885.

Summary of progress made in construction of new lines. The following is a summary of the progress made with the construction of new lines:—

Extension.	Distance.	Progress.
Nyngan to Bourke	Miles. 126	First section, Nyngan to Byrock, to be opened September, 1884, and whole line to be finished by 31 March, 1885.
	-	
Glen Innes to Tenterfield	57 1	Line to Tenterfield to be completed by 31 December, 1885.
Sydney to Illawarra	6 8	Part of first section, 9 miles, will be opened in September, 1884; second section, 11 miles, under construction, and to be completed by July, 1885; the fourth section, 26 miles, to be completed by 30 June, 1886.
Homebush to Waratah	93	First section, Homebush to Hawkesbury River, 29 miles, to be completed by 1 March, 1886; second section, bridge over Hawkesbury, not yet contracted for; third section, Hawkesbury to Gosford, 14 miles, to be completed by 30 September, 1886; fourth section, Gosford to Waratah, 49½ miles, to be completed by 31 July, 1886.
Goulburn to Cooma	130	Goulburn to Bungendore, 39½ miles, under construction, to be completed by 31 December, 1884 (Goulburn to Tarago, 23 miles, now open); Bungendore to Michelago, 48 miles, under construction, to be completed by 30 June, 1887.

Extension.	Distance.	Progress.
Murrumburrah to Blayney	108	Murrumburrah to Young, 18 miles, under construction, to be completed by 31 December, 1884.
Cootamundra to Gundagai .	32½	Under construction, to be completed by 30 June, 1885.
Orange to Molong	22	Under construction, to be completed by 30 June, 1885:

In the following table the lengths of Railway lines authorized, the Railways opened and total lengths opened, the extent of double line, and the lengths remaining to to be constructed (1st September), are shown:—

. Railways:	Length of Line sanctioned.	Length opened for Traffic.	Portion laid with Double Rail.	Length remaining to be finished.
Great Southern—Sydney to the River Murray	Miles. 387	Miles. 387	$\begin{array}{c} \text{Miles.} \\ 13\frac{1}{2} \end{array}$	Miles.
South-western—	-			:
Junee to Hay	167	167		
Narrandera to Jerilderie	65	•••••		65
Cooma Branch—Goulburn to Cooma	13 0	23		107
Cootamundra to Gundagai	33	•••••		3 3
Murrumburrah to Blayney	108			108
Sydney to Wollongong and Kiama	68		:	68
Homebush to Waratah	98	;;; <u>.</u>		93
Great Western—		į		
Granville to Bourke	490	364	1	126
Windsor and Richmond Branch	16	16		
Wallerawang to Mudgee	85	54		31
Orange to Forbes	83			83
Great Northern—	ŀ		• .	
Newcastle to Tenterfield	381	323	20 ;	58
Morpeth Branch	4	4		
North-Western-Werris Creek to Narrabri	97	97		
Bullock Island Branch	1½	11/2	11/2	
Darling Harbour, &c	2	2	2	*******
Total	2,2101	1,438½	38	772

Since this report was commenced the Railway policy of the Government has been laid before Parliament, and provision has been made for the following lines:-

Proposed Extension.	Miles.	Proposed Extension.	Miles.
SOUTHERN. City Extension Tarago to Braidwood Gundagai to Tumut Goulburn to Crookwell Wagga Wagga to Tumberumba Culcairn to Corowa Kiama to Jervis Bay Bega to Eden Total Southern	33 25 18 68 45 41 40	WESTERN. Perth to Rockley Forbes to Wilcannia Nyngan to Cobar Total Western NORTHERN: Musclebrook to Cassilis Glen Innes to Inverell Grafton to Glen Innes Grafton to The Tweed Tenterfield to the Queensland Border Narrabri to Moree	17 340 82 439 70 45 103 165 12 61
•	-	Total Northern	456

		SUMMA	ARY.		
Southern		•••	·		302 miles.
Western					439 "
Northern \dots	•••	• •••	•••	•••	4 56 ,,
•	,	Fotal	^		1,197 miles.

Statement

The following Statement shows the Railway Lines open, under construction, and proposed, including the Lines provided for in the Railway showing struction, and proposed, including Railway system—lines Policy of the present Government.

Lines open.

Line and Extension.	Miles.
Southern Railway. Sydney to Albury (Darling Harbour Branch included) 8 miles	389
Goulburn to Tarago 23 ,, Junee to Hay 167 ,, Narrandera to Jerilderie 65 ,,	- 263
Total South	. 652
Western Railway. Granville to Byrock	. 442
Wallerawang to Mudgee 85 ,,	101
7 Total West	. 543
	323
Morpeth to East Maitland 4 ,, Werris Creek to Narrabri 97 ,,	102½
Total North	425\frac{1}{2}

	•		Summ.	ARY.				Miles.		
Southern]	D .:11							652		
	Kanway	• • •	•••	•••	•••	•••	•••			
$\mathbf{Western}$	"	•••	•••	•••	:••	• • • •	•••	543		
Northern	"	•••	• • •	•••	. • • •	•••	•••	$425\frac{1}{2}$		
•	Total					•••	•••	$1,620\frac{1}{2}$		

Lines under Construction, with Mileage and probable date for completion.

Lines under construction.

Postadada	Miles		To be com	npleted—		
Extension.	Miles.	1884.	1885.	1886.	1887.	Remarks.
SOUTHERN LINE. Goulburn to Cooma—		, .				
Goulburn to Tarago	17 48 42	Open 31 Dec			30 June.	Contract not yet let.
Cootamundra to Gundagai	3 3 ,		30 June		••••••	
Sydney to Illawarra— Eveleigh to Hurstville Hurstville to George's River		Open Time ex-	·······			
2nd Section—13 to 24 miles 3rd ,, 24 to 34 ,, 4th ,, 34 to 60 ,, 5th ,, to near Kiama	11 10 26 9	pired.	July	30 June		Contract not yet let.
Southern Line	200					•
Western Line.	-		•			
Murrumburrah to Blayney— Murrumburrah to Young Young to Blayney	18 90	31 Dec	********			Contract not yet let.
Byrock to Bourke	49		31 March			
Orange to Molong	22 60		30 June	*********		Contract not yet let.
Western Line	239					
NORTHERN LINE.				-		
Homebush to Waratah— Homebush to Hawkesbury River.	29		*******	1 March	••••	,
Hawkesbury Bridge	14	······································		30 Sept 31 July		Contract not yet let.
Glen Innes to Tenterfield	58		December			
Northern Line	150}					

SUMMARY.

Lines.		To be co	mpleted.			Not yet con-	C 1 T 1
Lines.	1884.	1885.	1886.	1887.	Total.	tracted for.	Grand Total.
	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
Southern	2 1	44	2.6	48	139	61	200
Western	'18	71	•••••		89	150	239
Northern		58	-92	*****	150	1 2	150½
Total	39	173	118	48	378	211½	589½

GRAND SUMMARY.—Lines Open, Authorized and Proposed.

Summary of all lines.

Lines.	Open for traffic.	Under construction.	Authorised but not yet under construction.	Proposed (1884).	Total.
Southern	Miles. 652 543	Miles. 139	Miles. 61 150	Miles. 302 439	Miles. 1,154 1,221
Northern	$425\frac{1}{2}$	150	12	456	1,032
Total	1,620½	378	$211\frac{1}{2}$	1,197	3,407

4.—LAND TAKEN FOR RAILWAY PURPOSES.

Appendix No 5, p. 55.

In Appendix No. 4 will be found particulars referring to the land resumed for Railway purposes to 31 December, 1883.

The claims outstanding on the 31st December, 1882, were 456, to which 490 were added during 1883; of these 946 claims, 191 were settled in 1883, leaving at the close of the year 755 in various stages of adjustment, a large number of which have been settled during the present year.

5.—Importation of Railway Materials.

Appendix No. 6, p. 58.

In the Appendix will be found a return of the Permanent-way materials, locomotives, and miscellaneous articles imported during the year under review.

The following is an abstract of the returns:—

Number of Ships employed.	Number of Tons of Goods shipped.	Value of Goods shipped.	Amounts paid for Freight and Insurance.	Average rate of Freight and Insurance per ton.
		£ s. d.	£ s. d.	s. d.
121 (17,271	275,149 0 3	*17,053 11 11	*19 8:97
	, -		†1,930 7 7	†2 2:82

* Freight. † Insurance.

In the above are included:-

in the above are	moru	iou .				Weight in Tone	s. $\tilde{\overline{\mathbf{V}}}$ al	ue.	
							£	s.	· đ.
Permanent-way n	naterial f	or auth	orized ex	tensi	ons	311	4,172	4	1
•	Renew	als and	Sidings			5,556	36,748	5	5
~	Tramw	ays	•••			2,226	20,435	12	3
28 Locomotives		•••				1,480	79,510	11	6
15 Motors	•••	·	•••			185	22,458	4	9
Miscellaneous art	icles		•••	•••		7,513	111,824	2	3
	•					17,271	£275,149	Ò	3

The establishment of the new and capacious stores at Eveleigh, to which allusion was made in the report of last year, has continued satisfactorily to facilitate the working of this important branch of the Department.

EXISTING

EXISTING LINES.

Maintenance of Ways and Works.

During the year a large number of works were carried out, details Maintenance of which will be found on reference to Appendix No. 1. Those charged to Works the Capital Account have been Scheduled, and the cost of each is shown in Appendix No. 10 a.

Appendix No. 10 a.

Appendix No. 10 a.

The principal works carried out have been :-

Southern Line.

Providing for electric lighting, Sydney station, &c.

Overbridge, Petersham.

Additional platforms, sub-way, &c., Summer Hill.

New bridge, Burwood:

New loading-yard, Homebush.

Station buildings, Colo.

Water supply, Barber's Creek.

Refreshment-room, Goulburn.

Refreshment-room, Yass.

Station buildings, Binalong.

Houses for employés, refreshment-rooms and water supply, Junee Junction.

Stock-yards, Culcairn.

Refreshment-rooms, Albury.

Alterations and additions to stock-yards, Hay.

Additional sidings laid in . . . 86,210 feet.

Permanent-way relaid with steel rails 7,928 do 981

Sidings

Western Line.

New platform and overbridge, Parramatta.

Additions to station building and running-shed, Penrith.

New platform, Mount Victoria.

Houses for employés, Capertee.

Sheep and cattle-yards, Kelso.

Workshop for smiths, Bathurst.

House for porter in charge, Kerr's Creek.

House for loco. foreman, Dubbo.

New station, Windsor.

Additional sidings laid in 21,285 feet.

Permanent-way relaid with steel rails 22,858

Sidings. do

Permanent-way relaid with re-rolled iron

11,616

Sidings relaid with re-rolled iron rails 2,625

Northern Line.

Mortuary station, Honeysuckle Point.

Workshops and offices,

Station accommodation, Woodford.

Goods-shed, Branxton.

Stock-yards, Whittingham.

Overbridge, Murrurundi.

Platform and shed, Wollon.

Station-master's house, Kentucky.

Platform and waiting-shed, Emerald Hill.

do Baan Baa.

Twelve cottages for employés, Narrabri.

Additional sidings laid in 11,687 feet.

Locomotive

Locomotive and Carriage Division.

Locomotive nd Carriage Division.

In view of the many difficulties under which the repairing of the rolling stock and other plant has been conducted the work done must be deemed satisfactory. It is now some years since the demand upon the space and appliances at the Redfern yard reached the limit of the convenience afforded, and the rapid growth of the general traffic has still further tended Notwithstanding these disadvantto increase the inconvenience already felt. ages, the rolling stock has been maintained in good running order, and the general business of the Branch has been performed in an efficient manner, while a good quantity of work has been conducted at a reasonable The demand upon the resources of the Department for repairs must ever be an increasing factor in the working expenditure, and the inadequacy of the existing space has been long foreseen and provided against, Provision for meeting the requirements of the Departas far as possible. ment in this respect has been necessarily one of time, but it is satisfactory to state that the erection of the new buildings at Eveleigh is being rapidly proceeded with, the large running shed capable of accommodating 147 locomotives is approaching completion, while good progress has been made with the foundations of the Locomotive Workshops, the work being delayed pending the arrival of certain portions of the structure which it has been found necessary to obtain from England. The working expenses have necessarily been heavier than they would have been if the accommodation available had been commensurate with the demands of a large and growing traffic, but it is reasonable to expect that when the new workshops are sufficiently advanced for occupation the cost of repairs and renewals to the rolling stock will be sensibly reduced.

The running sheds at Penrith, Bathurst, and Goulburn, to accommodate the engines employed in these districts, are approaching completion, and will be of very great benefit.

Appendix No. p. 73.

A large addition to the rolling stock has been made during the year, no less than 1,100 vehicles having been added, particulars of which are given below:-

ABSTRACT of Rolling Stock on hand on 31st December, 1882, and the number and description of Vehicles supplied in 1883.

مرا	con	ıoti	ves.						:	Pas	ser	ıge:	r.		•											G	oods									
						_						08.		ś			_			N	Jagg	ons.						Van	э.	-		ong.				all vehicles.
Tank.	Passenger.	Goods.	Total.	Dining.	Sleeping.	First-class.	Composite.	Second-class.	Mail Vans.	Prison Vans.	Hearses.	Workmen's Vans.	Horse Boxes.	Carriage Trucks.	Brake Vans.	Total.	Accident Vans	A.	B.	C.	D.	Ä	Water Trucks	F. 0	Loco. Coal.	Powder.	Sheep.	Cattle.	Meat.	Cattle & Goods	124	Wagg	Brake Vans.	Dump-car.	Total.	Total of all ve
25	114	128	268	1	8	81	86	153	10	5	6	8	-	ollin 56		ock 8 564					Dece 3685					17	313	302	13	1	1	85	121		5 44 5	6277
-					ļ			·						3	Rolli	ng i	Stoc	ck r	ecei	ived	duri	ng :	1883	3.												
	9	19	28			7	9	74	2	1	ļ	14			2	131		60] 2	41	415	¦		30	140	2	76	81	4			63	26	1	941	110

The capital expenditure in new stock during the year was £283,723 and a sum of £114,727, charged against Revenue, was expended in repairing and renewing existing stock.

New contracts were let at the close of the year for the supply of rolling stock, other than engines, required for the ensuing five years, and it is satisfactory to note that the progress made by the manufacturers in

this

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this branch of Colonial industry is such that the prices for the several descriptions of vehicles have been reduced with each successive contract. The prices now being paid are in marked contrast with those paid when this class of work was first let in the colony, and show that the hope then entertained that when industries of this character were fairly established the rates for the Colonial manufactured articles would bear favourable comparison with the same class of imported work, has been fully realized.

7.—REVENUE AND EXPENDITURE.

The gross earnings in 1883 were £1,931,464. The working expenses Gross and net £1,177,788, and the net earnings £753,676.

working expenditure.

Of the gross earnings, the sum of £661,751 was derived from coaching traffic, and £1,269,713 from goods traffic. The proportion of the former to the latter was 34.25 to 65.75.

The expenditure in the Locomotive Branch was £438,174. Of this sum there was expended for renewals and for repairs of rolling stock, workshops, &c., other than those caused by fair wear and tear, the amount of £120,576, and the balance, £317,598, was used for current repairs and running expenses.

In the Permanent-way Branch the expenditure was £343,322, of which the sum of £109,252 was expended in renewals of line, buildings, stations, and for exceptional repairs, and the balance, £234,070, in ordinary maintenance.

The Traffic Branch expended £356,702, of which the sum of £23,628 was used in renewals of sheets, furniture and fittings, £2,881 in compensation for personal injuries, £1,721 in compensation for loss or damage to goods, and £328,472 in the ordinary charges for conducting the traffic.

The general charges, common to all branches, absorbed £39,590, of which £951 was for renewals of offices and buildings, and the balance, £38,639, was expended in superintendence, store and audit expenses, &c.

Although the gross earnings for 1883 were in excess of those for 1882 by the sum of £232,601, the net earnings were £10,550 less. This result—the causes for which will be explained—reduced the rate of interest, which the net earnings give to capital invested, from 5.14 per cent. in 1882, to 4.48 per cent.

The causes of this reduction are very generally known. 1882, when the result of the Railway transactions for 1881 was ascertained, the Government, in view of the fact that the Railways for that year gave the handsome return of 5.31 per cent. to the capital invested, determined to reduce the rates of carriage and to increase the wages of the workmen, so that the public who use the Railways and the men who work them should benefit directly by this prosperous condition of affairs.

Reductions in the rates of carriage for passengers and goods were accordingly made to the extent of, at least, £100,000, and the wages of the workmen were increased by the sum of £37,000 per annum. admitted at the time that these concessions would reduce by nearly 1 per cent. the per centage which the net earnings return to capital invested, and the result shows that this estimate was approximately correct.

Particulars of coaching traffic.

In the following tables are given the particulars of the Revenue and Expenditure for 1883 compared with 1882:—

COACHING TRAFFIC.

	•			1882.	•		1883.	
			S. & W.	North.	Total.	S. & W.	North.	Total.
	First-class Second-class	No.	1,334,465 3,683,475			1,703,572 $4,250,075$		1,837,999 4,793,426
Number of	Total	,,	5,017,940	540,637	5,5 58, 5 77	5,953,647	677,778	6,631, 4 25
passengers	Season tickets— No. of journeys	,,	*3,336,416	89,320	, 3 ,425,7 36	a 3,531,488	109,124	3,640,612
<u> </u>	Gross	,,	8,354,356	629,957	8,984,313	9,485,135	786,902	10,272,037
	First-class Second-class Season tickets	£ "	- 180,982 220,385 †33,347	28,018 50,698 1,035		238,763	33,176 61,708 1,120	300,471
Receipts from	Total Horses and carri-	. ,,	434,714	79,751	514,465	469,725	96,004	565,729
Coaching traffic.	ages, parcels, &c. Mails Miscellaneous	" "	37,935 9,754 7,198	12,477 $3,255$ $2,741$	50,412 13,009 9,939	20,061	7,728	27,789
'	Gross	` ,,	489,601	98,224				
Average fare per	First-class Second-class Season tickets	s. d.	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{ccc} 5 & 3\frac{1}{2} \\ 2 & 4 \\ 0 & 2\frac{3}{4} \end{array}$	$egin{array}{cccc} 2 & 10rac{3}{4} \ 1 & 3rac{3}{4} \ 0 & 2rac{1}{4} \ \end{array}$	$1 \ 1^{\frac{1}{2}}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	1 3
head.	Mean	"	$\frac{1}{1} \frac{0\frac{1}{2}}{0\frac{1}{2}}$	$\phantom{00000000000000000000000000000000000$	$\frac{\frac{3}{2}}{1}$			
Average receipts	First-class Second-class Season-tickets	£ s.d.	39 14 10	180 14 10 3 13 9		253 17 4 30 13 2	170 14 0 3 2 0	
from Coaching { traffic per average	Total Horses and carriages, parcels, &c. Mails	"	518 2 7 45 4 3 11 12 7	44 9 7	45 0 7	45 7 5	42 10 10	
mile of line.	Miscellaneous	,,	8 11 7 583 11 0			7 9 10 573 12 8	8 13 7	<u> </u>
		,,	<u>'</u> 	1]		<u> </u>
	First-class Second-class Season tickets	d. "	28·37 35·54 4·21	21·84 39·53 0·81		32.67	39.32	33.85
Average receipts per	Total Horses and carri-	,,	68.12	62 ·18	67.13	64.29	61.18	63.73
passenger train mile.	ages, parcels, &c. Mails	"	5·95 1·53					
	Miscellaneous Gross	,,	76.73	$\frac{2.14}{76.59}$				ļ
, , , , , , , , , , , , , , , , , , ,	<u>, </u>	"	<u>'</u>	1	1	73.84	<u> </u> 	<u> </u>
$\left\{egin{array}{c} ext{Proportion} \ ext{of} \ ext{classes.} \end{array} \right.$	First-class Second-class Season tickets	% ,,	15·97 44·09 39·94	69.03	45:85	44.81	69·05	46.67
	, ,		100.00	100.00	100.00	100.00	100.00	100.00
Proportion of receipts.	First-class Second-class	. %	41·63 50·70		52.69	50.91	64.27	53.18
receipus. (Season tickets	, ,,	100.00	1.30				
* Includes	972,360 journeys ma	de wit	h workman's	tiekete	+ Includes	£6 469:fon		Li aleaka

^{*} Includes 972,360 journeys made with workmen's tickets.

2 Do. 1,090,392 do. do.

[†] Includes £6,463 for workmen's tickets. b Do. £7,382 do.

```
The number of first-class passengers carried shows-
```

An increase of...

369,107 for South and West Lines.

28,639 ,, North line.

An increase of...

397,746 ,, all lines.

The number of second-class passengers carried shows—

An increase of...

566,600 for South and West lines.

108,502 ,, North line.

An increase of...

675,102 ,, all lines.

The number of season tickets (journeys)—

Increased

195,072 for South and West lines.

19,804 ,, North line.

An increase of...

214,876 ,, all lines.

The total increase in the number of passengers carried on all lines was 1,287,724.

The receipts for coaching traffic increased—

£49,902 for South and West lines.

24,024 ,, North line.

£73,926 ,, all lines.

The receipts from coaching traffic per average mile of line show-

s. d.

4 for South and West lines.

11 19 11 ,, North line.

Average decrease 16 16 5 ,, all lines.

The receipts per train mile show—

A decrease of ...

2.89 for South and West lines.

An increase of...

1.31 ,, North line.

A decrease of ...

2.16, all lines.

The proportion of percentage of classes of passengers shows-

An increase of ...

1'86 for 1st class.

·82 ,, 2nd ,,

A decrease of ...

2.68, season tickets.

The proportion of percentage of receipts—

...

Increased

·89 for 1st class.

·49 ,, 2nd ,,

Decreased

138,, season tickets.

Particulars of goods traffic.

The goods traffic compared in the same way is shown as under:

Goods Traffic.

. ,						-	1883.	
	-		S: & W.	North.	Total:	S. & W.	North.	Total.
Tons carried	Merchandise Minerals Wool Live Stock	Tons	606,740 393,956 28,400 48,335	1,395,940 13,683	1,789,896 42,083	425,840 42,521	1,489,662 21,366	1,915,502
	Total	,,,	1,077,431	1,542,007	2,619,438	1,200,346	1,664,220	2,864,566
Receipts from Goods Traffic.	Merchandise Minerals Wool Live Stock Miscellaneous	£ ,,	550,255 93,188 67,786 116,652 3,845	71,313 30,712 23,418	164,501 98,498 140,070	83,572 105,038 127,344	75,991 51,719 27,583	159,563 156,757 154,927
,	Total	,,	831,726	279,312	1,111,038	939,883	329,830	1,269,713
Average rate per ton.	Merchandise Minerals Wool Live Stock	S. "	18·14 4·73 47·74 48·27	1.02	1·84 46·81			1.66 49 .08
`	Mean	,,	15.42	3.62	8:48	15.66	3.96	8.86
Average No. of tons per mile of line.	Merchandise Minerals Wool Live Stock	Tons	723 469 34 58	4,985 49	1,599 38	453 45	4,121 59	1,471 49
	Total	,,,	1,284	5,507	2,340	1,277	4,603	2,199
Average receipts per mile of line.	Merchandise Minerals Wool Live Stock Miscellaneous	£s. d.	111 1 5	254 410 109 910 83 9 9	125 2 4	88 17 2 111 13 7 135 8 0	$\begin{bmatrix} 143 & 1 & 5 \\ 76 & 6 & 0 \end{bmatrix}$	$egin{array}{cccc} 122\ 11 & 0 \\ 120 & 8 & 0 \\ 118\ 19\ 10 \\ \end{array}$
	Total	"	991 6.7	995 15 4	992 8 9	999 610	912 710	975 4 0
Average receipts per train mile.	Merchandise Minerals Wool Live Stock Miscellaneous	d.	55.41 9.38 6.83 11.75 0.39	27·22 11·72 8·94	13·11 7·85 11·16	6.61 8.31 10.07	23·58 16·05 8·56	10·06 9·88 9·77
	Total	,,	83.76	106.62	88.53	74:36	102:34	80.04

In the tonnage carried there was

An increase of 91,637 in merchandise.

,, 125,606 in minerals.

 $_{,,}$ 21, 804 in wool.

6,081 in live stock.

245,128 total increase.

Per average mile of line open, the result shows:-

A decrease of 21 tons in merchandise.

128 " minerals.

An increase of 11 ,, wool.

A decrease of 3 ,, live stock.

141 total decrease:

The receipts show—

An increase of £92,882 in merchandise.

A decrease of 4,938 in minerals.

58,259 in wool. An increase of

14,857 in live stock.

2,385 in miscellaneous. A decrease of

£158,675 total increase.

Per average mile of line open, the receipts show-

8.

7 in merchandise. A decrease of 16

> 249 in minerals.

An increase of 32 8 4 in wool.

A decrease of 6 $\mathbf{2}$ 6 in live stock.

> 3 in miscellaneous. 2 18

£17 4 9 average decrease.

The average receipts per train mile show—

A decrease of 5.79 for merchandise.

3.05 for minerals.

An increase of 2.03 for wool.

A decrease of 1.39 for live stock.

0.29 for miscellaneous.

8.49 total decrease.

Working Expenditure.

Working Emperiors...

The particulars of the whole of the expenditure are given in the Particulars of working expenditure. following table:-

-	. `			1882.	-		1883.	
		•	S. & W.	North.	Total.	S. & W.	North.	Total.
1	(Maintenance of way, &c	£	215,265	46,724	261,989	279,318	64,004	343,322
	Locomotive power, &c	*)	255,501	58,985	314,416	311,456	70,607	382,063
Gross working	Repairs of carriages & waggons	,,	35,309	11,212	46,521	43,102	13,009	56,111
expenses.	Traffic charges	,,	206,784	71,341	278,125	279,318	64,004	343,222
омренеев.	Compensation—Personal	,,	3,162	80	3,242	2,878	2	2,880
	Do Goods	,,	868	181	1,049	1,533	188	1,721
	Miscellaneous	"	20,743	8,480	29,223	30,783	9,107	39,590
	. Total	,,	737,632	197,003	934,635	932,209	245,579	1,177,788
Expenditure per	r average mile of line	,, -	879	702	835	991	679	905
	(Maintenance of way, &c	d.	13.20	11.98	12.96	14.00	13.36	· 13·88
	Locomotive power, &c	"	15.66	15.12	15.56	15.61	14.73	15.44
77	Repairs of carriages & waggons	"	2.17	2.87	2.30	2.16	2.71	2.27
Expenditure	Traffic charges	".	12.68	18.28	13.76	13.21	18.50	14.23
per train mile.	Compensation—Personal	,,	0.19	0.02	0.16	0.14	0.00	0.12
	Do Goods	13	0.05	0.02	0.02	0.08	0.04	0.07
·	Miscellancous	"	1.27	2.17	1.45	1.23	1.90	1.60
	Total	,,	45.22	50.49	46.24	46.73	51.24	47 61
	Maintenance of way, &c	%	16.30	12:38	15.43	18.88	- 14.15	17:77
1	Locomotive power, &c	70.	19.33	15.62	18.51	21 05	15.62	19.77
Proportion	Repairs of carriages & waggons	"	2.68	2.97	2.74	2.91	2 87	2.81
of expenditure	Traffic charges	33	15.65	18.89	16.37	18.88	14 15	17.77
to gross receipts.	Compensation—Personal	,,	0.24	0.02	0.19	0.19	.	0.14
1	Do Goods	"	0.06	0 05	0.06	0.11	0.04	0 09
	Miscellaneous	"	1.57	2 25	1.72	2.06	· 2·01	2.04
	Total	,,	55.83	52.18	55.02	63.01	54:32	60.97

The total working expenditure, compared with 1882, increased— £194,577 or 26.3 per cent. for South and West lines.

48,576 or 24.7

North line.

243,153 or 26.0

all lines.

The expenditure per average mile of line open-

Increased £112 for South and West lines.

Decreased £23 for North line.

Increased £70 for all lines.

The expenditure for train mile shows as follows—

An increase of 1.51d. for South and West lines.

An increase of 0.75d. for North line.

An increase of 1.37d. for all lines.

The proportion of expenditure to gross receipts from all sources shows— 63.01 per cent. for South and West lines.

54.32

North lines.

60.97

all lines.

Net Earnings.

Percentage of net earnings to capital.

The percentage of net earnings to capital expended in 1883, as against 1882, was as under:—

				1882.			1883.	,
			No. of miles.	Capital invested.	Percentage of interest.	No. of miles.	Capital invested.	Percentage of interest.
South and	West	 •••	921	11,798,326	5.15	958	12,552,980	4:39
North	•••	 	$347\frac{1}{2}$	4,045,290	5·10	$362\frac{1}{2}$	4,352,034	4.76
All Lines		 	$1,268\frac{1}{2}$	15,843,616	5.14	$1,320\frac{1}{2}$	16,905,014	4.48
	<u> </u>	 !		1		<u> </u>	<u> </u>	<u> </u>

ings to capital.

The subjoined abstract furnishes the percentages which the gross gross earnings, the working expenditure, and the net earnings bear to the capital expenditure, and net earn expended on lines in operation for 1883, as compared with 1882.

		1882.	•		1883.	•
·	S. & W.	North.	Total.	S. & W.	North.	Total.
Net receipts from all sources \pounds	583,694	180,534	764,228	547,177	206,499	753,676
Do per average mile $\pmb{\pounds}$	696	644	683	582	571,	579
Do per train mile d.	35.78	46.26	37.81	27:43	43.09	30.46
Proportion of gross receipts to %	11.65	10.66	11.42	11.80	10.39	11.43
capital. Do of expenditure to ,,	6.50	5.56	6:28	7.41	5.63	6.95
capital. Do of net receipts to ,, capital.	5.15	5.10	5.14	4.39	4.76	4·4 8

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The net earnings from all sources for the year show as follows:—
£36,517 decrease South and West.
£25,965 increase North.

£10,552 decrease all lines.

The net earnings per average mile of line open show

A decrease of £114 for South and West lines.

£73 for North line.

£104 for all lines.

The proportion of gross earnings to capital

Increased 0.15 on South and West lines.

Decreased 0.27 on North lines.

Increased 0.01 on all lines.

The proportion of expenditure to capital

Increased 0.91 on South and West lines.

0.07 on North lines.

0.67 on all lines.

The proportion of net receipts to capital

Decreased 0.76 on South and West lines.

,, 0.34 on North line.

0.66 on all lines.

The following is a summary of the gross earnings, working expenditure, of gross and net earnings of the Railways for 1883, as against 1882:—

Summary of gross earnings, working expenditure, of gross earnings, and net earnings of the Railways for 1883, as against 1882:—

of gross
earnings,
working
expenditure,
and net
earnings for
1882 and 1883.

·	South and West.	North.	Total.
	£	£	£
Gross earnings, 1883	 1,479,386	452,078	1,931,464
Do. 1882	 1,321,327	377,536	1,698,863
Increase for 1883	 158,059	74,542	232,601
Working expenditure, 1883	 932,209	245,579	1,177,788
Do. 1882	 737,633	197,002	934,635
Increase for 1883	 194,576	48,577	243,153
Net earnings, 1883	 547,177	206,499	753,676
Do. 1882	 583,694	180,534	764,228
Increase for 1883	 •••••	25,965	
Decrease for 1883	 36,517		10,552

No. 8.—DIVISION OF THE RAILWAY LINES INTO SECTIONAL AREAS.

Sectional returns. In the following statements are given the capital expenditure, the gross earnings, the working expenditure, the net earnings, and the return which the net earnings give to the capital invested in each section.

It will be seen that out of the eleven sections, into which the whole of the Railways have been divided, two make no return to the capital invested in their construction—indeed have been conducted at a loss—viz., the line from Junee to Hay, upon which a loss of £10,767 has been incurred, and the Windsor and Richmond Branch, upon which the loss is £2,707.

The capital invested in these two sections is £1,188,396, and the interest which has to be paid on that sum amounts to £47,535, so that it may be said the loss which the country has directly sustained upon the working and interest accounts of these two lines amounts to £61,009. But while the direct loss is as stated, the indirect gain which the traffic passing over these lines brings to the other and main portions of the Railway system minimizes if it does not altogether recoup this loss. For instance, the wool and other produce from Hay, and the goods in exchange carried to Hay, have for the most part to be carried over the 287 miles of Railway intervening between Junee and Sydney, and the handsome return to capital which that portion of the line gives is sensibly contributed to by the profit made upon this traffic. To illustrate this more in detail I may instance a trader at Hay coming to Sydney to purchase goods. He pays for the journey £7 5s., but only £2 11s. 2d. of that amount is credited, on the mileage basis, to the earnings of the line from Hay to Junee; the balance goes to swell the earnings of the line from Junee to Sydney. back 20 tons of goods at a freight cost of £66 13s. 4d., but of this sum £42 3s. is credited to the line from Sydney to Junee, the balance only being appropriated to the extension to Hay. If the line from Junee to Hay had not been constructed the trader would not have visited Sydney, nor obtained his goods there; he would have journeyed to Melbourne, and purchased his goods in that centre of supply, forwarding them to Hay by the Victorian Railway to Echuca, and thence by the river. While it is true that under such circumstances the country would have been spared the loss incurred upon the working of the Branch Line from Junee to Hay, it would have lost the profit derivable from the transit of the traffic over the Railway from Sydney to Junee.

It is apparent, therefore, that, while for the advantage of having detailed information before us for a guide, it is useful to show the working of the lines by sections; the result of the working of the Railways as a whole can alone be accepted as an index of their position and progress. The main channel of traffic is swelled by feeders to the stream, the latter, for the time being, working at an apparent loss, but contributing to the prosperity of the whole, and promising at no distant time to become profitable streams of traffic from which other feeders will spring.

ALL SECTIONS-SOUTH, WEST, AND RICHMOND.

Expendi	ture.	•		Earning	ţ8.	
All Sections—South, West, and Miles open Train mileage 4,7	Cost per train mile.	Per cent. to earnings	All Sections—South, V Richmond— Train mileage— Coaching	1,753,633 3,033,509	Earn- ings per train mile.	
	£	d.	·.	·	£	d.
Locomotive expenses	354,557	17.78	23.96	Earnings from—	,	!
Permanent way do	279,318	14.00	18.87	Coaching	539,503	73.84
Traffie do	267,851	13.43	18.10	Goods	939,883	74.36
General do	. 30,483	1.53	2.07			;
,	£ 932,209	46.74	63.00			
Balance, net earnings	547,177				, 	
	£ 1,479,380	3		£	1,479,386	74.17
Capital expended— Construction Rolling stock, &c.		,				
Lines in operation— 921 miles for 12 mont 36 ,, 7 ,,	•	£12,552	2,980	Per cent. per annun capital	n return of	n . 4:39

All sections— South, West, and Richmond.

SUBURBAN SECTION—SYDNEY TO GRANVILLE.

Expendi	ure.		•	Ear	ning	3.		Sydney to Granville.
Sydney to Granville— Miles open Train mileage 631			Per cent. to earnings	Sydney to Granville Train mileage— Coaching Goods Total	4\$3,197 148,409 631,606	Earn- ings per train mile.		
-	£	d.				£	d.	,
Locomotive expenses	46,780	17.77	19.94	Earnings from—				
Permanent way do	36,718	13 95	15.66	Coaching		137,802	68.45	
Traffic do	35,339	13.43	15 [.] 07	Goods	;	96,691	156.36	
General do	4,022	1.53	1.72			•	ļ	
· £	122,859	46.68	52:39					
Balance, net earnings	111,634							
£	234,493			,	£	234,493	89 10	
Capital expended— Construction, &c. Rolling stock, worksho		-						
Line in operation, 12 mont	hs.	£1,449	,668	Per cent. per ann capital	num 	return or	7.70	

Granville to Goulburn.

FIRST SECTION, SOUTH-GRANVILLE TO GOULBURN.

Expenditu	re.			Earning	;s.	
Granville to Goulburn— Miles open79 Train mileage79	Cost per train mile.	Percent. to earn- ings.	Granville to Goulbu Train mileage Coaching Goods	330,771 467,130 ———	Earn- ings per train mile.	
	£	d.			£	d.
Locomotive expenses	59,096	17.77	19.80	Earnings from Coach-	106,036	76.94
Permanent way do	37,406	11.25	12 [.] 53	ing. Goods	192,354	98.83
Traffic do	44,644	13.43	14.96			
General do	5,081	1.53	1.71	-	•	
1	146,22 7 152,163	43 98	49.00			
	298,390			£	298,390	89.75
Capital expended— Construction Rolling stock, &c		Per cent. per annum re		6.82		
Line in operation 12 months		£2,229	,047	• /	-	

SECOND SECTION, SOUTH-GOULBURN TO ALBURY.

Goulburn to Albury.

Expendit	ure.	•		Earnings.			
Goulburn to Albury— Miles open8	Cost per train mile.	Percent, to earn- ings.	Goulburn to Albur Train mileage— Coaching Goods	Earn- ings per train mile.			
	£	d.			£	d.	
Locomotive expenses	64,991	17.78	28.31	Earnings from Coach-	105,472	76.50	
Permanent way do	63,167	17.27	27.50	ing. Goods	124,144	54.51	
Traffic do	49,099	13 43	21.39	-			
General do	5,587	1.53	2.40				
Balance, net earnings	182,844 46,772	50.01	79.63				
£	229,616			£	229,616	62.80	
10 - 11'		£2,253 318	,730 ,550	Per cent. per annum re		1.82	
Line in operation 12 month	8.	£2,572	,280	capital	••		

South-western Line—Junee to Hay.

Junee to Hay.

Expendit	ure.			Earnings.			
Junee to Hay— Miles open	167 33,343	Per cent. to earnings	Junee to Hay— Train mileage— Coaching Goods	Earn- ings per train mile.			
	£	d.		Earnings from—	£	d.	
Locomotive expenses	17,282	17.77	32.69	Coaching	19,711	55.01	
Permanent way do	31,790	32.69	60 15	Goods	33,136	53.97	
Traffic do	13,056	13.43		*	52,847	54.35	
General do	1,486	1.53	2.82	Balance, loss on working	10,767		
$oldsymbol{arepsilon}$	63,614	65.42	120:37	$oldsymbol{arepsilon}$	63,614		
Capital expended— Construction, &c Rolling stock, &c.		· · · · · · · · · · · · · · · · · · ·	Ş				
Line in operation 12 month	s.	£1,006	,412	Loss per cent. per an	num	. 1.07	

FIRST SECTION, WEST-GRANVILLE TO BATHURST.

Exp	endit	ure.			Earnin	gs	
Granville to Bathurst— Miles open			Cost per train mile.	Per cent. to earnings	Granville to Bathurst— Train mileage— Coaching Goods	. 281,577 . 894,627	Earn- ings per train mile.
		£	d. ·		Earnings from—	£	d.
Locomotive expenses		87,115	17.77	22.90	Coaching	94,989	80.96
Permanent way do		51,019	10.41	13.41	Goods	285,356	.76.55
Traffic do		65,808	13.43	17:31	•		1
General do	•••	7,490	1.53	1:97			
ì		211,432	43.14	55.89			
Balance net earnings		168,913		<u> </u>		:	
	£	380,345		an.	£	380,345	77.61
Capital expended— Construction Rolling stock, &c.	-		£2,471 526	,980 ,300	· ·		
Line in operation 12 m	ontl	18.	£2,998	,280	Per cent. per annu capital		n 5:63

Granville to Bathurst.

SECOND SECTION WEST-BATHURST TO WESTERN TERMINUS.

Bathurst to Western Terminus.

Expendit	ure.		a	Earnings.			
Bathurst to Nyngan— Miles open Train mileage §	Cost per train mile.	Percent to earn- ings.	Bathurst to Nynga Train mileage— Coaching Goods Total	199,003 782,396	Earn- ings per train mile.		
	£ .	`d.			£	d.	
Locomotive expenses	72,687	17.77	27.73	Earnings from—			
Permanent way do	47,923	11.72	18.29	Coaching '	66,026	79.63	
Traffic do	54,910	13.43	20.96	Goods	195,995	60.12	
General do	6,249	1.53	2.39		,		
	181,769	44.45	69:37	•	. ,		
Balance, net earnings	80,252		<u>'</u> ,				
£	262,021			. £	262,021	64.08	
Capital expended— Construction Rolling stock, &c Line in operation— 196 miles for 12 months 36 ,, 7 ,,	d	Per cent. per annu capital	m return o	n . 4·38			

MUDGEE BRANCH-WALLERAWANG TO CAPERTEE.

Wallerawang to Capertce.

Expenditu	ire.	•		Earnings.			
Wallerawang to Capertee— Miles open Train mileage 2	Cost per train mile.	Percent. to earn- ings.			Earn- ings pe train milé.		
	£	d.	:		£	d.	
Locómotive expenses	2,201	17.78	22.39	Earnings from—			
Permanent way do	4,861	39.25	49.44	Coaching	2,737	40.70	
Traffic do	1,664	13.43	16 [.] 91	Goods ·	7,095	125.42	
General do	189	1.23	1.93			 	
	8,915	71.99	90.67	,			
Balance, net earnings	917	,	· .	, · ` · \			
$oldsymbol{arepsilon}$	9,832			$oldsymbol{arepsilon}$	9,832	79.40	
Capital expended— Construction Rolling stock, &c	•••	£190,7 13,8		.	, .		
Line in operation 12 months	s. ,	£204,6	607 #	Per cent. per annum capital		0.45	

RICHMOND BRANCH-BLACKTOWN TO RICHMOND.

Expenditure.			Earnings.			
Blacktown to Richmond— Miles open	Cost per train mile.	Cost per Per Coach train Coach Goods		n to Richmond— nileage— hing		
£	d.		Earnings from—	£	d.	
Locomotive expenses 4,40	5 17.78	37.21	Coaching	6,730	61.96	
Permanent way do 6,43	4 25 96	54:33	Goods	5,112	36·7 2	
Traffic do 3,33			$oldsymbol{arepsilon}$	11,842	47.78	
General do 37	9 1.00	3.20	Balance, loss on work- ing	2,707		
£ 14,54	9 58.70	122.85	. , 	14,549	,,,	
Capital expended— Construction Rolling stock, &c	£165, 16,	364 620	·	•		
Line in operation 12 months.	£181,	984	Loss per cent. per a	nnum on	1.49	

Blacktown to Richmond.

ALL SECTIONS—NORTH AND NORTH-WESTERN LINES.

Expendit	ur e.			Earning		All sectio North and Nort	
All Sections—North and North Miles open	$362\frac{1}{2}$	Cost per train mile.	Per cent. to earnings	All Sections—North and N Train mileage— Coaching Goods	376,617 773,502	Earn- ings per train mile.	western L
	£	d.		Earnings from—	£	d.	-
Locomotive expenses	83,616	17.45	18·50	Coaching	122,248	77.90	
Permanent way do	64,004	13.36	14.16	Goods	329,830	102.34	
Traffic do	88,851	18.54	19.66				
General do	9,108	1.90	2.01	-			
				·		٠.	
	245,579	51.25	54.33				
Balance, net earnings	206,499		1				
£	452,078			£	452,078	94.34	,
Capital expended— Construction Rolling stock, &c	a	3,879,8 472,4					
Line in operation— 347½ miles for 12 month 15 ,, 11 ,,	ıs. ·	E4,352,0	034	Per cent. per annum capital	return on	4.76	

Newcastle to Murrurundi.

	Ex	pendit	ture.			Earnings.				
Newcastle to Murrurundi— Miles open			Cost per train mile.	train cent. to Coaching 188,5						
			£	d.			£	d.		
Locomotive e	xpenses		45,901	17.45	16.17	Earnings from—				
Permanent w	ay do	:	27,102	10.30	9.64	Coaching	69,360	88.24		
Traffic	do	•••	48,775	18.54	17:18	Goods	214,648	116.23		
General	do		5,000	1.90	1 [.] 76	• •				
			126,778	48.19	44·65					
Balance, n	et earnin	gs	157,180		<u></u>	:	_	,		
		£	283,958			£	283,958	107.94		
Capital expen Construct Rolling st	iou	•		E1,764,2 296,9			,			
Line in opera	tion 12 m	\mathbf{onth}	s.	£2,061,2	15	Per cent. per annum capital	return òr	1 . 7·63		

SECOND SECTION NORTH-MURRURUNDI TO NORTHERN TERMINUS.

Murrurundi to Northern Terminus.

<u></u>									
	Ex	pendit	ure.			Earnings.			
Miles o	Murrurundi to Armidale— Miles open 140 Train mileage 354,011			Cost per train mile.	Per cent. to earnings	Murrurundi to Armidale Train mileage— Coaching Goods	116,195 237,816	Earn- ings per train mile.	
,		, -,	£	d.			£,	d.	
Locomotive e	expenses	•••	25,737	17.45	22.57	Earnings from—	, ,		
Permanent w	ay do		23,245	15.76	20.38	Coaching	36,820	76.05	
Traffic	do	••'	27,349	18.54	23.98	Goods	77,227	77:94	
General .	do	•••	2,803	1.90	2.46		۰		
			79,134	5 3 ·65	69:39		x		
Balance,	nęt earnin	ıgs	34,913		·		,		
		£	114,047			£	114,047	77:32	
Capital expe Construc Rolling s	tion	···	3	- - -					
Line in oper 125 miles 15 ,,	for 12 m	onths "	a I.	Per cent. per annum capital	return on	2.10			

NORTH-WESTERN LINE-WERRIS CREEK TO NARRABRI.

Expenditure.	Earning	Werris Creek to Narrabri				
Werris Creek to Narrabri— Miles open		Per cent to earnings.	Werris Creek to Narrab Train mileage— Coaching Goods	Earn- ings per train mile.		
Locomotive expenses 11	£ d.	22.15	Earnings from—	£	d.	•
<u> </u>	657 19.89	25.25	Coaching	16,118	53.80	
Traffic do 12	727 18:54	23.54	Goods	37,955	98.12	
General do 1	,305 1.90	2.41	, .			
39	,667 57:78	73.35			ľ	
Balance, net earnings 14	,406			•		
£ 54	,073	•	$oldsymbol{arepsilon}$	54,073	78:77	
Capital expended— Construction Rolling stock Line in operation 12 months.		7,754 6,430 —— 1,184	Per cent. per annun capital	n return oi	n . 2:35	

RAILWAYS—STATEMENT OF PROFIT AND Loss, 1883.

Lines open for Traffic.	Length in Miles.	Periods for which lines were in operation.	Cost of Construction.		Rolling orkshops, rry, and ire, &c.	Total capital	Net	vorking.	cent. per interest in capital.	cent. per
			Amounts.	Totals.	Cost of Rolling Stock, Workshops, Machinery, and Furniture, &c.	expended.	Earnings.	Loss on working.	Rate per cent. per annum of interest returned on capital.	Loss per cent. per annum on capital.
	1]					-		
Sydney to Granville	Miles. 14½		£	£ 1,125,578	£ 324,090	£ 1,449,668	£ 111,634	£ 	7.70	
Granville to Goulburn	121 <u>3</u>	12		1,816,917	412,730	2,229,647	152,163		6.82	
Goulburn to Albury	253	12		2,253,730	318,550	2,572,280	46,772		1.82	
Junee to Hay	167	12		933,007	73,405	1,006,412		10,767		1.07
Granville to Bathurst	132	12		2,471,980	526,300	2,998,280	168,913		5.63	
· · ·	196	12	1,364,388							
Bathurst to Nyngan {	36	7	182,844							
· ·				1,547,232	362,870	1,910,102	80,252		4:38	
Wallerawang to Capertee	22	12		190,757	13,850	204,607	917		.45	
Richmond Branch	16	12	•••	165,364	16,620	181,984		2,707		1.49
Newcastle to Murrurundi	125 1	12		1,764,235	296,980	2,061,215	157,180		7.63	
Ĺ	125	12	1,390,898	•						
Murrurundi to Armidale {	15	11	166,650			,				
(1,557,548	119,087	1,676,635	34,913	·	2.10	·
Werris Creek to Gunnedah	97	12	••••••	557,754	56,430	614,184	14,406		2.35	
· · · · · · · · · · · · · · · · · · ·							707 150	70.474		}
				Dodmot 1-		king	767,150			
				Deduct 10	рээ он мог	млив 	13,474		•••	
•	1,320½			14,384,102	2,520,912	1 6 ,905,014	753,676		4:48	

Statement of profit and loss.

9.—Ton Mileage.

Gross ton mileage.

In the following tabulated statement are shown the average distance each passenger and each ton of goods was conveyed, and the amount received per passenger and per ton for every mile carried:—

,	South	& West.	North.	Total.
Averave mileage per passenger Average mileage per ton—goods and live stock Average receipts per mile per passenger Average receipts per ton per mile, coaching traffic Average receipts per ton per mile, goods traffic Average receipts for coaching traffic per ton per mile, including tare Average receipts for goods traffic per ton per mile, including tare	٠,,	12·03 101·28 0·99 14·61· 1·85 ·570	26·24 20·28 1·12 16·82 2·35 ·554	13·12 54·21 1·01 14·98 1·96 ·567 ·405

Appendix No. 52, p. 144.

In the Appendix to this Report will be found the ton mileage returns of our lines for 1883 and details of the net earnings of the different descriptions of goods traffic are afforded in the following tables.

The amount which each item contributes to the net earnings is shown as under:—

GREAT SOUTHERN, WESTERN, AND RICHMOND LINES.

Ton Mileage.

The large items of goods traffic on Great Southorn, Western, and Richmond lines distinguished.

Description of Goods.	Weight carried.	Miles carried.	Average miles per ton.	Freight.	Tonnage amount per mile per ton.	Per ton per mile, net and tare.	Working expenses, per ton per mile.	Net earnings per ton per mile.
Flour Wheat Coal Firewood Road-metal Shale Hay and Straw Wool Live Stock All other goods	31,800 23,886 138,307 160,662 60,319 29,346 27,810 42,521 52,322 634,249	4,357,968 2,712,456 11,735,279 4,349,344 1,886,048 2,363,928 2,262,714 10,875,664 11,168,739 69,507,521	137 04 113 56 84 85 27 07 31 27 80 55 81 36 255 77 213 46 109 59	£ 18,331 11,200 48,120 22,618 9,963 9,885 12,822 105,044 127,377 576,015	d. 1 01 0 99 0 98 1 25 1 27 1 00 1 36 2 32 2 74 1 99	320 314 -272 332 -349 -268 -308 -401 -345 -410	·244 ·244 ·244 ·244 ·244 ·244 ·244 ·244	·076 ·070 ·028 ·088 ·105 ·024 ·064 ·157 ·101 ·166

The proportion to net earnings which they contributed shown.

Description of Goods.	Ton mileage.	Freight received.	Net earnings per ton per mile.	Proportion of net earnings
Flour	13,739,219	18,331	.076	4,350
Wheat	.8,553,907 42.376 ,890	11,200 48,120	·070 ·028	2,500 · 4,944
Coal	16,351,633	22,618	.088	5,990
Road-metal	6,845,346	9,963	105	2,99 <u>4</u> 881
Shale	8,834,079 9,997,598	9,885 12,822	·024 ·064	2,666
Hay and Straw	62,936,045	105,044	.157	41,170
Live Stock	88,719,952	127,377	~101	37,336
All other goods	337,118,932	576,015	166	232,122
Total	595,473,601	941,375	·135	334,953

^{*} Including traffic on Camden Line.

GREAT NORTHERN RAILWAY.

Description of Goods.	Weight carried.	Miles carried.	Average miles per ton.	Freight.	Tonnage amount per mile per ton.	Per ton per mile, net and tare.	per ton per	Net earnings per ton per mile.
				· £	d.			
Flour		515,549	69.61	2,668	1.24	·405	·246	·159
Wheat		170,396	64.45	867	1.22	.398	·246	·152
Hay and Straw	7,309	449,682	61.52	2,429	1.30	.302	.246	.056
Coal (Govern-								
ment trucks)	8,916	957,550	107.40	3,326	0.83	269	.246	.023
Coal (owners'								
' trucks)	1,419,839	10,307,043	7.26	64,399	1.50	516	.311	.205
Wool		4,308,376	201.65	51,719	2.88	.514	246	.268
Live stock	15,737	2,055,415	130.61	27,583	3.22	·417	.246	·171
All other goods	181,003	14,980,615	82.76	176,839	2.83	•537	•246	.291
		<u> </u>						
Total	1,664,220	33,744,626	20.28	329,830	2.35	·508	·258	·250
÷ .		l ' .'	J	Ι ΄ .			[

The large items of goods traffic on Great Northern line dis-tinguished.

Description of Goods.	Ton mileage.	Freight received.	Net earnings per ton per mile.	Proportion of net earnings.
Flour Wheat Hay and Straw Coal (Government trucks) Coal (owners' trucks) Wool Live Stock All other goods	No. 1,580,912 522,238 1,927,913 2,967,462 29,961,606 24,130,245 15,871,335 78,974,069	£ 2,668 867 2,429 8,326 64,399 51,789 27,583 176,839	d. 159 152 056 023 205 268 171 291	£ 1,047 330 450 284 25,592 26,945 11,308 95,962
Total	155,935,780	329,830	250	161,918

The proportion to net earnings which they contributed shown.

10.—WOOL RETURNS.

The following is a return of the Wool carried on the Railways for the years 1883 and 1882:—

	South and West.	North.	Total.
No. of bales in 1883	244,971	116,068	361,039
Do 1882 ,	162,584	73,334	235,918
Increase in 1883	82,387	42,734	125,121
Revenue in 1883	£105,044	£51,719	£156,763
Do 1882	67,790	30,712	98,502
Increase in 1883	£37,254 '	£21,007	£58,261

Returns for 1883 compared with 1882. Appendix No. 30, p. 121.

The return above shows the wool carried during the year. In Appendix No. 31 will be found the quantity carried from each station for the season 1882-3, in comparison with the season 1883-4.

So far as the traffic is concerned the wool business has been a satis-cause of factory one to the Railway Department, inasmuch as there was an increase increase increase wool traffic. on the year's transactions of 125,121 bales, and on the season 1883-84 against 1882-83 of 54,602 bales. The increase in the year's traffic is due, in a measure, to the fact that the clip for 1882 was late, causing the traffic in the early part 1188-E of

34

of 1883 to be heavy. The season, judged by the rainfall, has been a bad one for the wool-growers. The absence of rain, however, has prevented the rivers from filling, and the wool could not therefore to the same extent as formerly be carried by these waterways to the adjoining Colonies. The wool riverborne to South Australia and Victoria in 1882 amounted to 187,633 bales, and in 1883 to 154,530 bales, a reduction of 33,103 bales. This, coupled with the fact that our railway extensions have penetrated into the border districts, principally accounts for the large increase in the wool carried. Strong evidence of the recent bad seasons is given by the average rainfall for the Colony, which in

1879 was 30.75 inches. 1880 ,, 19.93 ,, 1881 ,, 20.73 ,, 1882 ,, 20.11 ,, 1883 ,, 17.96 ,,

From 1874 to 1879 the average rainfall was equal to 28 inches; from 1880 to 1883 it fell to 20 inches.

Wool returns, season 1882-3 and 1883-4. For the seasons 1882–83 and 1883–84 the wool returns from the various Lines were as follows:—

	•	1882-83.		1883-84.		Increase.		
South and South-	west	91,873 k	pales.	$113,227$ \downarrow	oales.	21,354	bales.	
West		74,150	,,	102,077	,,	27,927	,,	
North	• • •	86,836	,,	92,157	,,	5,321	,,	
Total		252,859	,,	307,461	,,	54,602	,,	

Number of Sheep-in the Colony.

In the following statement is given the number of Sheep in the Colony at the close of the years 1882 and 1883:—

Districts.	Number of Sheep, 1st January, 1883.	Number of Sheep, 1st January, 1894.	Increase, 1st January, 1884.	Decrease, 1st January, 1884.
Border	10,404,587	9,728,119		676,468
Northern	8,482,938	9,118,590	635,652	
Southern	9,179,537	10,469,777	1,290,240	
Western	8,047,752	8,599,024	551,272	•••••
	36,114,814	37,915,510	2,477,164	676,468

11.—Coal Traffic.

Coal traffic, Appendix, Nos. 34-41, pp. 126-132. The coal traffic during the year shows a satisfactory increase. This great interest was not disturbed, to any material extent, by strikes, and as an increased export trade was done a larger quantity of coal than usual was carried.

The total quantity carried over the Northern Line for the years 1882 and 1883 was as follows:—

			Tons.	· Freight.
1883	•••		1,428,756	£ $67,725$
1882	•••	• • • • •	1,327,060	63,305
Increase	.			5.858

The

The following were the quantities shipped for foreign and intercolonial ports:

1883				•••		1,359,505
1882	•••	•••		•••	•••	1,080,446
Increase			`•			279.059

The coal traffic on the South and West Lines shows a fair increase, but Appendix No. there is a marked decrease in the quantity of shale carried, the export trade in this article, which was very active in 1882, being very quiet during 1883. The total traffic on the South and West Lines was as follows:-

`			Coc	al.	Sh	Shale.			
1883	•		$^{ m Tons.}$ $127,\!576$	Freight. $\pounds 46,197$	Tons.	Freight.			
1882		•••	109,915	240,197 $41,628$	29,344 $42,790$	£9,883 14,296			
				<u></u>					
	ncrease		17,661	4,469	•••	•••			
T	ecrease	• • •		•••	12,646	4,413			

In addition to the above there were 165,308 tons conveyed for the Department, the freight on which amounted to £76,555. As this coal was used for locomotive purposes the sum named has not been included in the revenue returns of traffic.

12.—RETURNS.

In addition to the Returns given and referred to in the Report the following will be found in the Appendix:-

1.	The	particulars	of	the	various	classes	of	merchandise	carried,	its	Appendix	
	ton	nage, and fi	reigl	ht va	lue.				•	1	No. 26, pp. 105-110.	
_	ma											

2. The revenue traffic and expenditure at each of the Stations.

3. Live stock traffic.

Appendix No. 29, p. 120. 4. Statement of the value of the live stock and wool, &c., exported over Appendix No. 32, p. 124.

5. Business transacted at Central Booking Office.

6. Detailed returns of the coal traffic.

7. Particulars of the suburban passenger traffic.

8. Merchandise traffic rates, 1882 and 1883.

9. Comparative statement of the rates of railway carriage in the Aus- 53, pp. 151-165. lian Colonies.

10. Return of accidents.

11. Table of the progress and financial position of the railways, from Appendix No. 57, p. 180.

12. Number and classification of employés, and the scales of, and total Appendices amount paid for, salaries and wages.

Appendices Nos. 58-59, pp. 181-189.

13. Return of free passes issued during 1883.

Appendix No. 60, p. 190,

... 21, pp. 111-116. Apr

Appendix No. 33, p. 125.

Appendices 4 Nos. 34-41, pp. 126-132.

ppendices

Appendix No. 54, pp. 166-176.

Appendix No.

Nos. 43-44. Appendix No.

Annexed

Annexed to the Appendix are thirteen coloured diagrams, showing the following particulars of the Railway transactions for each of the twenty-seven years from 1855 to the end of 1883:—

- 1. Length of line opened on 31st December in each year.
- 2. Number of passengers.
- 3. Tonnage of goods.
- 4. Earnings from coaching traffic.
- 5. Earnings from goods traffic.
- 6. Gross and net earnings and working expenses.
- 7. Working expenses.
- 8. Earnings per train mile.
- 9. Working expenses per train mile.
- 10. Percentage of working expenses to gross earnings.
- 11. Net earnings.
- 12. Capital invested in lines open.
- 13. Interest on capital.

A Railway map showing in colours the Railway systems of the Colony, the lines constructed, under construction, and authorized, is appended.

13.—RECAPITULATION.

The transactions during the year are thus summarized:—

The total expenditure for construction was £19,188,464, of which the sum of 16,905,014 was expended for lines opened for traffic.

At the close of the year 1,320 miles of line were open for traffic, and 597 miles were in course of construction.

The rolling stock consisted of 296 locomotives, 695 coaching, and 6,386 goods, vehicles.

The value of the railway materials, in the conveyance of which 121 vessels were employed, amounted to £275,149, and the freight and insurance to £18,984, making a total of £294,133.

During the year 116,286 trains, of which 64,088 were passenger and 52,198 goods trains, were run a distance of 5,937,261 miles. The earnings amounted to £1,931,464, and the working expenditure to £1,177,788, or 60.98 per cent. of the earnings. 10,272,037 passengers travelled, of whom 3,398,169 were first class, and 6,873,868 were second class. Included in these figures are 14,972 season-ticket holders, representing 3,640,612 journeys. The proportion percentage of these classes is for first-class passengers 17.89, second class 46.67, and for season-ticket holders 35.44.

The merchandise traffic consisted of 1,753,024 head of live stock, 361,006 bales of wool, 1,915,502 tons of minerals, and 816,918 tons of general goods.

There

37

There was an increase of 397,746 in the number of first-class passengers, of 675,102 second class, and 214,876 in the journeys made by season-ticket holders.

The earnings per mile open were £1,484, the expenditure was £905, the net earnings were £579.

The earnings per train mile were 78.07, the expenses 47.61, and the net earnings 30.46.

The net earnings were £753,676, yielding 4.48 per cent. to the capital invested on lines open for traffic.

I have the honor to be, Sir,

Your most obedient servant,

Commissioner for Railways.

The Honorable F. A. Wright, Secretary for Public Works, &c., &c., &c.

TRAMWAYS OF NEW SOUTH WALES.

Department of Public Works, Railway Branch, Sydney, 10th October, 1884.

Sir,

I have the honor to supplement my Report for 1883, upon the Railways of the Colony, with a report for the same period upon the construction and operation of the Tramways in the City and Suburbs of Sydney.

Capital expenditure.

In the following table is given the capital expenditure on the lines open and under construction to 31 December, 1883:—

Return showing the Capital Expenditure on the Government Tramways of New South Wales to the 31st December, 1882, and subsequent expenditure to 31 December, 1883.

1)		
Lines and Sections.	Total Expenditure to 31 December, 1882.	Amount expended in 1883.	Total expended to 31 December, 1883.
			,
	£ s. d.	£ s. d.	£ s. d.
Railway Station to Circular Quay	41,665 8 9	ļ7,420 16 1	59,086 4 10
Liverpool-street to Randwick and Coogec	66,442 15 10	.28,814 10 1	95,257 5 11
Darlinghurst Junction to Waverley and Woollahra	37,332 0 10	3,806 8 3	41,138 9 1
Crown-street Junction to Cleveland-street	6,510 13 8	19 12 9	6,530 6 5
Campbelltown to Camden	29,514 11 2	5,819 12 11	35,334 4 1
Newtown (Glebe Junction) to Marrickville	30,021 17 5	4,598 13 2	34,620 10 7
Glebe Point and Forest Lodge £38,659 13 9			
Credit of 1883 12,855 15 8			ļ
· · · · · · · · · · · · · · · · · · ·	*25,803 18 1	11,595 10 3	37,399 8 4
Railway Station Junction to Botany	71,262 10 2	4,585 7 7	75,847 17 9
Forest Lodge Junction to Leichhardt	273 10 11	16,176 7 8	16,449 18 7
Waverley to Bondi	683 6 11	257 19 7	, 941 6 6
Circular Quay to Kent-street	355 18 2	99,211 12 5	99,567 10 7
Newtown to Cook's River	297 3 7		297 3 7
Harris-street to Pyrmont	276 1 10		276 1 10
Total cost of construction	010 (00 15)		
Tramway Workshops for all Lines	310,439 17 4	192,306 10 9	502,746 8 1
Rolling Stock	29,363 0 11	13,706 2 7	43,074 3 6
Machinery	99,836 15 0	28,840 2 7	128,676 17 7
Furniture	2,222 11 1	1,754 9 11	3,977 1 0
Trial surveys, as shown in 1882 £2,688 0 2	2,046 19 6	***************	2,046 19 6
7 11 0 2 2	,		
Transferred as above 1,312 16 0	1,055		
	1;375 4 2	2,228 12 9	3,603 16 11
3* 	445,289 8 0	238,835 18 7	684,125 6 7
* Reduced by £12 855 15e	1	<u> </u>	

^{*} Reduced by £12,855 15s, 8d. credit during 1883.

At the close of 1882 there were 22 miles of Tramway, exclusive of the Tramways open for Camden Line, open for traffic. During the year 1883 extensions were opened traffic. from Randwick to Coogee, and from the University Gates (Forest Lodge Junction) to Johnson-street, Leichhardt, making the total mileage in operation at the close of the year 25 miles, the capital expended on which, inclusive of rolling stock, machinery, and workshops, was as under:—

Lines opened for Traffic.	Length in Miles.	Total Cost.	Cost per Mile.
		£	£
Railway Station to Circular Quay	134	59,086	33,763
Liverpool-street to Randwick and Coogee	5 1	95,257	18,144
Darlinghurst Junction to Waverley and Woollahra	.31	41,139	11,754
Crown-street Junction to Cleveland-street	- 34	6,530	8,707
Campbelltown to Camden	7½	35,334	4,711
Newtown (Glebe Junction) to Marrickville	31/4	34,621	10,653
Glebe Point and Forest Lodge	21/2	37,399	14,960
Railway Station Junction to Botany	64	75,848	11,237
Forest Lodge Junction to Leichhardt	11/4	16,450	13,160
Average cost of construction	321	401,664	12,359
Tramway workshops £43,074 Rolling stock 128,677			,
Machinery 3,977	·		
Furniture 2,047			•
	· ·······	177,775	· ······· .
	32 ਮੂ	579,439	
Average cost per mile, including all charges	,ç		17,829

[†] The cost of rolling stock for the Camdon tramway is not included here, as railway vehicles were used on that line. See note on similar statement for railways, Appendix No. 10, page 82

ADDITIONS TO CAPITAL ACCOUNT—LINES OPEN FOR TRAFFIC 1883.

The amount expended on Lines open for 1882 was £412,561. During Additions to the year 1883 there was added the sum £166,878, making the capital value account. £579,439 as under:—

Expended to the end of 1882	£412,561
Amount transferred from construction account	6,945
Amount expended on completion and construction of Lines	
during 1883	98,189
Additions and improvements to existing Lines	11,579 See Appendix
Additional rolling stock, workshops, and machinery	50,165 ^{10a.}
-	
	£579,439
To this sum must be added the value of Railway rolling stock	
used on the Camden Tramway	5,623
•	
Making the total capital invested in Tramways in operation	£585,062
- · · · · · · · · · · · · · · · · · · ·	The
	THE

The extensions opened during 1883 were:—

Lines open in 1883 and 1884.

From Randwick to Coogee, 1 mile 50 chains, opened on the 25th January; and the line from Forest Lodge Junction to Leichhardt, $1\frac{1}{4}$ mile, opened on the 18th June.

Since the close of 1883 the following additional lengths have been added:-

> Continuation of Leichhardt Line to Norton-street, 1 mile, opened on the 1st May, 1884; and the line from Waverley to Bondi, 1 mile, opened on the 24th May, 1884.

The plans and sections of a line from Newcastle to Plattsburg, $8\frac{1}{4}$ miles, were laid before Parliament and approved on the 12th August. Tenders for the construction of this line will shortly be invited.

Some unavoidable delay has taken place in determining upon a line of Tramway for the North Shore, from Milson's Point to the Reserve. Inquiry has had to be made into the relative advantages and cost of a steam motor line and a cable line system for this route. The question has not been finally determined, but such information on the subject is before the Government as will admit of a decision being arrived at upon an early date.

REVENUE AND EXPENDITURE.

Revenue and Expenditure

The total earnings derived from the City and Suburban Tramways Appendix No. during the year were £190,699, an increase of £64,497 over the earnings of 16, p. 96. The expenditure was £178,877, and the net earnings £11,822, which upon the capital invested in lines open gave a return of 2.22 per cent.

> As 4 per cent. is the rate at which the Tramway capital has been raised, the transactions for 1883 show a loss of 1.78 per cent., equal to a sum of £9,478.

Result of transactions. 1884.

I regret to say that the transactions for the first six months of this The causes which have year do not promise a more favourable result. contributed to this state of affairs are several. It was intended when the Tramway system was initiated to popularize it by charging cheap fares, and 2d. per section of 2 miles and under was fixed upon as the rate which should The public have, however, from time to time demanded that the sections should be extended, and, with few exceptions, the first sections of the Tramway, for which a charge of 2d. is made, extend to nearly 3 miles, and in some instances over that distance. Again, when the Tramways were first opened, children were charged the ordinary fares. The demand was made and conceded that the same concession allowed to children travelling on the Railways should be extended to children travelling on the Tramways; and though it cannot be said that the concession was an unreasonable one to make, it must be pointed out that the granting of it resulted in an estimated loss of £10,000 to the net revenue.

While we have been charging exceptionally low rates, we have had very heavy expenses to contend with. In the first place the construction of the Tramways in Sydney, owing to the hilly formation of the City, has been very expensive, and the maintenance cost has been correspondingly heavy. The portions of the road or streets upon which the Tram-lines are laid are generally kept in better condition than the other portions of the street; and the consequence is, that the ordinary vehicular traffic is concentrated on the Tramway, causing, as already stated, a very heavy charge for the maintenance Another of the road.

Another and a peculiarly heavy item of expenditure is the large amounts which are claimed and obtained through the Law Courts for personal injuries.

Workmen's wages necessarily form a very considerable item in the expenditure upon any Tramway, but the rates paid to the employés of the Tramways in Sydney are considerably in excess of those paid elsewhere, in addition to which they have the benefit of the eight-hour system of labour, which necessitates the employment of two shifts of men per diem. I am not prepared to say that the men are paid too highly or that their work is light, but as the Tramways cost more to construct here than they do elsewhere, as the cost of maintenance is greater, the wages of the men higher, and the hours of labour shorter, it is not possible to work them at a profit if, as is the case in many instances—especially as regards the first sections of the lines—a lower fare is charged than is charged upon other Tramways where the conditions for profitable working are so much more favourable.

The public who use the Tramlines are continually asking for further accommodation. It is admitted that for their greater comfort the cars should be improved, additional waiting-sheds should be provided, and the crossings at the stopping-places paved; but these facilities cannot be given without a further expenditure of money and a consequent greater loss upon the working of the lines.

The people who are best served at the present time are those who travel on the first sections of the line; they are carried longer distances for the same fare. It is but reasonable, therefore, that any proposal to increase the present fares should be made to apply to the first sections. It will not be denied that the Tramways'should return a sufficient sum to maintain them in good working order, and to pay interest upon the capital invested; but while every effort has been made to work the Tramways ecenomically, with a due regard to the reasonable requirements of those who make use of them, this result has not been obtained. I have, therefore, deemed it my duty to submit to you a proposal to increase the fares charged on the first sections from 2d. to 3d., as under:—

Bridge-street to Glebe Point.

- ,, to Forest Lodge.
 - to Cleveland-street, Newtown Road.
- ,, to Glebe Junction (Leichhardt Line).
- to Waterloo.
- ,, to Crown-street.
- ,, to Queen-street, Paddington.
- to Cleveland-street (Moore Park).

The fares on the other section to remain as they are at present.

It is not proposed to disturb the present charge for children.

With the increased fares proposed it is estimated that the revenue obtained will make the Tramways self-supporting and ensure a fair return upon the capital invested. The public, I believe, are not unprepared for this change, and will be found willing to respond to a proposal which, while it is fair in its incidence, will afford the means of increasing the accommodation and enhancing the value of the service which the Tramways have been admitted to render them.

In the following statements are given the capital expenditure, the gross earnings, the working expenditure, the net earnings, and the return which the net earnings give to the capital invested on each section:—

1188—F

CITY AND SUBURBAN TRAMWAYS-1883.

ALL SECTIONS.

All sections.

	Exp	endi	ture.	Earnings.				
All Sections— Miles open				Cost per train mile.	Per cent. to earnings	All Sections— Miles open Train mileage	25 1,076,096	Earn- ings .pe train mile.
Locomotive expe	nses	•••	£ 107,093	d. 23·89	56·16	Earnings from all source	£ 190,699	d. 42·53
Permanent-way	do ·	•••	30,977	6.90	16 [.] 25		'	
Traffic	do		37,558	8.38	´19 [.] 69	•		
General	do	•••	3,249	.72	1.70		,	
			178,877	39.89	93.80			
Balance, net ea	rnings	•••	11,822		<u> </u>	•		-
	,	£	190,699	,		,	£ 190,699	42.53
Capital expended Construction Rolling stock			•••	£366 177 £544	775	Per cent. per annum capital	return or	i . 2·2 2
$\begin{array}{c} \text{Lines open-}\\ 22 \text{ miles}\\ 1\frac{3}{4} d\\ 1\frac{1}{4} d \end{array}$	o 11		do	&∪ 4 4	,100		•	

Note.—In the amount given above as permanent-way expenses there is included it of the relaying expenditure on the Redfern line during 1882, viz., £2,387 10s., in addition to the actual expenditure of 1883. During 1883 the greater portion of the Crown-street line was relaid with steel rails, estimated to last for 7 years, and it only of the cost is therefore included above, but in the books, owing to the custom of voting annual supplies, the whole cost will be charged to the accounts of 1883.

BRIDGE-STREET TO REDFERN RAILWAY STATION.

Bridge-street to Redfern Railway Station.

•	Exp	endit	ure.		Earninge.			
Railway Station Line— Miles open				Cost per train mile.	Per cent. to earnings	Railway Station Line— Miles open Train mileage 101	Earn- ings per train mile.	
Locomotive expe	nses	•••	£ 10,071	d. 23.88	43 [.] 71	Earnings from all sources	£ 23,045	d. 54·65
Permanent-way	do	•••	*5,853/	13 89	25.39	:	٠	
Traffic	do	.:.	3,532	8.38	15.33			
General	do .		306	.72	1.32			
Balance, net o	earning	ġs	*19,762 3,283	46.87	85:75			
		£	23,045			÷ £	23,045	54.65
Capital expended Construction Rolling stock	 x, &c. `		•••	. 15	,086 ,8 23 ,909	Per cent. per annum r capital	eturn o	n . 4:38

^{*} Includes proportion, cost of relaying, 1882.

LIVERPOOL-STREET JUNCTION TO COOGEE BAY.

Expendit	cure.			Earnings.	Liverpool- street Junc- tion to Cooge Bay.
Coogee Bay Line— Miles open Train mileage1	5½ 54,721	Cost per train mile.	Per cent. to earnings	Coogee Bay Line— Earn- Miles open	
Locomotive expenses Permanent-way do Traffic do General do Capital expended— Construction	£ 15,398 4,912 5,400 467 26,177	 €95	62·16 19·83 21·80 1·88 105·67	Earnings from all sources \$\frac{\pmathcal{E}}{24,772} \text{38.42}}{38.42} Balance loss on working \$\frac{\pmathcal{E}}{26,177} \text{26,177}	
Rolling stock, &c Line open— 3½ miles for 12 months. 1½ " 11 "		£117	,338 ,595		

DARLINGHURST JUNCTION TO WAVERLEY AND WOOLLAHRA.

Expendi	ture.	Earnings.			
Waverley and Woollahra Lines— Miles open		Cost per Per train cent. to milc.		Waverley and Woollahra Lines— Miles open 3½ Train mileage 195,789	Earn- ings per train mile.
	ŧ	d.		£	d.
Locomotive expenses	19,485	23.89	43·96	Earnings from all sources 44,32	9 54:34
Permanent-way do	4,450	5 ·45	10.04		
Traffic. do	6,834	8.38	15·42		.
General do	591	·72	1.33		
	31,360	38.44	70.75		
Balance, net earnings	12,969				
£	44,329		٠	£ 44,32	9 54.34
Capital expended— Construction Rolling stock, &c.		£41, 42;		Per cent. per annum return on capital	
Lines open 12 months.		£83,	954	сарітаі	TO 40

Darlinghurst Junction to Waverley and Woollahra.

CROWN-STREET TO CLEVELAND-STREET.

Crown-street to Cleveland-street.

Expendi	ture	Earnings				
Crown-street Line— Miles open		Cost per train mile.	Per cent. to earnings		73,059	Earn- ings per train mile.
	£	d.	,		£	d.
Locomotive expenses	7,271	23.89	65·12	Earnings from all sources	11,166	36.68
Permanent-way do	760	2.50	6.80		•	
Traffic do	2,550	8:38	22.84			
General do	220	.72	1.97			
	10,801	35.49	96.73	,		
Balance, net earnings	365					
${f \pounds}$	11,166			£	11,166	36.68
Capital expended— Construction Rolling-stock, &c.			6,530 2,100	Per cent. per annum r capital	return or	1 1·96
Line open 12 months.		£l	8,630		·	

Note.—The amount shown as permanent-way expenses is that properly chargeable to the year. (See note in All Sections statement.)

RAILWAY STATION JUNCTION TO BOTANY.

Railway Station Junction to Botany.

Ī		Expe	ndit	ure.		Earnings.			
	Botany Line				Cost per train mile.	Per cent. to earnings	Botany Line— Miles open Train mileage 1	6 ³ 4 84,087	Earn- ings per train mile.
	Locomotive expe	nses		£ 18,320	d. 23.88	61.58	Earnings from all sources	£ 29,750	d. 38.78
1	Permanent-way	do		4,893	6.38	16 [.] 45	Balance, loss on working	444	
	Traffic	do		6,425	8.38	21.59			
	General ·	do		556	.72	1.87			
			£	30,194	39 36	101.49	Ę.	30,194	
,	Capital expender Construction Rolling stock	c 1		··· ···		5,848 7,923	Loss per cent. per annum	·	. ·43
	Line open 12 m	onths.			£10	03,771	. ,		

RAILWAY STATION TO GLEBE POINT AND FOREST LODGE.

	Expo	ndit	ure.		í	Earnings.			
· Miles open.	Glebe Point and Forest Lodge Lines— Miles open				Per cent. to earnings	Glebe Point and Forest Lodg Miles open Train mileage	Earn- ings per train mile.		
•	•		£	d.			£	d.	
Locomotive expe	enses	•••	17,113	23.89	80.02	Earnings from all sources	21,387	29.86	
Permanent-way	do		5,009	6.99	23.42	Balance, loss on working	7,256		
Traffic	do		6,002	8.38	28.07				
General	do	•••	519	·72	2.42				
		£	28,643	39.98	133.93	. .	28,643		
Capital expended Construction Rolling stock				,399 , 477	Loss per cent. per annum	•••.	12:54		
Lines open 12 m	onths.	<u>. </u>		£57	,876	-			

Railway Station to Glebe Point and Forest Lodge.

NEWTOWN ROAD JUNCTION TO MARRICKVILLE.

Expendit	uro.			Earnings.		
Marrickville Line— Miles open Train mileage 1	Marrickville Line— Miles open		Per cent. to carnings			Harn- ings per train mile.
Locomotive expenses	£ 15,730	d. 23·89	48:32	Earnings from all sources	£ 32,551	d. 49 [.] 43
Permanent-way do	4,100	6.23	12.60	-	-	
Traffic	5,516	8.38	16.95			.
General	477	.72	1.46			
	25,823	39.22	79.33			
Balance, net earnings	6,728			·		
£	32,551			£	32,551	49.43
Capital expended— Construction Rolling stock, &c		£34,6 32,5		Per ceut. per annum return	on capita	l, 10·01
Line open 12 months.		£67,19	97			

Newtown
Road Junction to
Marrickville.

FOREST LODGE JUNCTION TO LEICHHARDT.

Forest Lodge Junction to Leichhardt.

Expendit	ure.			Earnings.	,	
Leichhardt Line— Miles open	oen 1 ¹ / ₄		Per cent. to earnings	Leichhardt Line— Miles open Train mileage37	1 1 7,281	Earn- ings per train mile.
Locomotive expenses	£ 3,705	d.	100 16	Earnings from all sources	£ 3,699	d.
Permanent-way do	1,000	6.45	27.05	Balance, loss on working	2,418	20 0%
Traffic do	1,300	8.38	35.14			^
General do	112	.72	3.02			
£	6,117	39.43	165·37	£	6,117	
Capital expended— Construction		Loss per cent. per annum	` 2	· 2·13		
Line open 6½ months.		£20,	173			ļ

TRAMWAY—CAMPBELLTOWN TO CAMDEN.

Campbelltown to Camden.

Expenditu	ıre.		Earnings.							
Camden Tramway— Miles open Train mileage	7½ 29,874	Cost per train mile.	Percent. to earn- ings.	Goods 12	5,910 2,964 	Earn- ings per train mile.				
	£	d.		Earnings from—	£	d.				
Locomotive expenses	1,440	11.57	44.59	Coaching	1,737	24.65				
Permanent way do	1,438	11.55	44·51	Goods	1,493	27.64				
Traffic do	2,793	22.44	86.47		3,230	-25.95				
General do	15	.12	•46	Balance, loss on working	2,456	20 90				
	5,686	45.68	176.03	€	5,686					
Capital invested— Construction Rolling stock			5,334 5,623							
Line in operation 12 months	ı .	£4	0,957	Loss per cent. per annum capital	on 	6.00				

The loss sustained upon this line has been largely contributed to by the heavy amount which was paid in 1883 for personal injuries sustained in the accident which occurred on the 13 March, 1882. The sum paid was no less than £2,161, which represents within £295 the whole excess cost in working the line. The prospects of a much more favourable return for the present year are very promising.

GOVERNMENT TRAMWAYS, 1883.

STATEMENT OF PROFIT AND LOSS.

Lines open for Traffic.	Length in	Length of round	Periods for which Lines	Cost of Co	nstruction.	Cost of Rolling Stock, Workshops,	Total Capital	Net	Loss on	Rate per cent. per annum	Loss per cent. per
mines open for traine.	Miles.	journey in Miles.	were in operation.	Amounts. Total.		Machinery, Furniture, &c.	expended.	Earnings.	Working.	returned on Capital.	Capital.
					,	,		j			
	Miles.	Miles.	Months.	£	£	£	£	£	£	[.	
Railway Station Line	13	3 ⁸ 4	12		59,086	15,823	74,909	3,283	· · · · · · ·	4.38	
Randwick and Coogee Line {	$^{1\frac{9}{2}}$	124	12 11	63,505 } 31,752 }	95,257	22,338	117,595	:	1,405	*****	1,10
Waterloo and Botany Line	6 3	16 8	12	•••••	75,848	27,923	103,771	•••••	444		[.] 43
Crown-street Line	3 4	41/2	12	•••••	6,530	12,100	18,630	365		1.00	•••••
Waverley and Woollahra Line.	. 3½	83 & 63	12		41,139	42,815	83,954	. 12,969		15.45	•••••
Glebe Point and Forest Lodge Line.	21/2	61 & 6	12		37,399	20,477	57,876		7,256	:	12.24
Leichhardt Line	1 1 4	$9^{\frac{1}{2}}$.	61/2		16,450	3,723	20,173		2,418		22,13
Newtown and Marrickville Line.	34	101	12		34,621	32,576	67,197	6,728		10.01	•••••
•		•	-		ļ			23,345	11,523		
					Dedi	uct loss on wor	king	11,523			
City and Suburban Lines	² 5				366,330	177,775	544,105	11,822		3,33	•••••
Campbelltown to Camden Tramway	71	15	12		35,334	5,623	40,957		2,456		6.00

ACCIDENTS.

It is satisfactory to be able to say that notwithstanding the great Appendix No. 56, pp. increase in the number of passengers carried there has been no increase in 178-179. the number of accidents.

The following were the accidents for the years 1882 and 1883, together with the number of passengers:—

	•	Acc							
Ser	vants.	Pass	Passengers.		n Passengers ervants.	T	otal. •	Number of Passenge Fares.	
Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.		
1	· 5	3	28	4	15	8	48	15,296,239	
1.	6	4	15	6	19	11	40	25,713,433	
	1	1		2	4	3	•••	10,417,194	
•••			13				8	²	
	Killed. 1 1	1 5 1 6 1	Servants. Pass Killed. Injured. Killed. 1 5 3 1 6 4 1 1	Killed. Injured. Killed. Injured. 1 5 3 28 1 6 4 15 1 1	Servants. Passengers. Other than and S Killed. Injured. Killed. Injured. Killed. 1 5 3 28 4 1 6 4 15 6 1 1 2	Servants. Passengers. Other than Passengers and Servants. Killed. Injured. Killed. Injured. Killed. Injured. 1 5 3 28 4 15 1 6 4 15 6 19 1 1 2 4	Servants. Passengers. Other than Passengers and Servants. To any servents. Killed. Injured. Killed. Injured. Killed. Injured. Killed. 1 5 3 28 4 15 8 1 6 4 15 6 19 11 1 1 2 4 3	Servants. Passengers. Other than Passengers and Servants. Total. Killed. Injured. Killed. Injured. Killed. Injured. Killed. Injured. 1 5 3 28 4 15 8 48 1 6 4 15 6 19 11 40 1 1 2 4 3	

Of the persons who lost their lives in 1883, six died through leaving or entering moving trams, one threw himself in front of motor, and four were run over; in each instance the accident was due rather to carelessness on the part of the deceased than to any fault of the Tram Service.

As the passenger fares collected were 25,713,433, the accidents were in the proportion of one killed to every 2,337,585 fares, and one injured to every 642,835.

ROLLING

ROLLING STOCK.

Rolling Stock.

At the close of 1882 46 motors were in use, and during 1883 12 new engines were added (11 from the Baldwin Company and 1 from Merryweather), making the total 58 at the close of the year. The average mileage run by each motor was nearly 25,000 miles. The average mileage of each Railway locomotive was for the Southern and Western Lines 24,782, and for the Northern Line 23,963. The Tramway motors have therefore performed a greater service than the Railway engines.

17 cars were added to the stock during the year, making the number in use 98, which will accommodate 7,020 passengers.

For the more economical working of the service it is essential that additional rolling stock should be obtained. Owing to the paucity of motors the work of repairing those which have failed during the day has to be performed at night; and as the mechanics are paid 25 per cent. in excess of the rate of wages for day work, the working expenses are sensibly increased.

With a small reserve of motors, and the additional workshop accommodation which is now being provided at Randwick, the cost of repairs will be largely reduced.

I have the honor to be,

Sir,

Your most obedient servant,

Commissioner for Railways.

The Honorable F. A. Wright,
Secretary for Public Works,

&c., &c., &c.

APPENDIX

TO THE

REPORT ON THE RAILWAYS AND TRAMWAYS

OF

NEW SOUTH WALES,

1883.

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PLATES.

Diagrams descriptive of Railway transactions from 1855 to 1883. Map showing Railway Systems and lines.

· APPENDIX TO REPORT ON RAILWAYS-1883.

No. 1.

The Engineer for Existing Railways and Tramways to The Commissioner for Railways.

Railway Department, Office of Engineer for Existing Lines.

I have the honor to submit my Annual Report, from January 1st to December 31st, 1883, on the condition of the Existing Railways and Tramways under my charge.

SUBURBAN RAILWAYS.

Sydney to Granville Junction-Double Line-Length, 13 miles 16 chains.

GREAT SOUTHERN AND SOUTH-WESTERN RAILWAYS.

Granville Junction to Albury-Single Line-Length, 373 miles 4 chains.

Albury to the River Murray-Single Line-Length, 1 mile-Opened for public traffic on the 14th June.

Junee Junction to Hay-Single Line-Length, 167 miles 29 chains.

THE whole of the works on these lines, including branches, have been kept in good running order during the year.

In addition to the several new works and improvements, list of which is appended, various repairs of a minor nature have been carried out during the year.

The main up and down lines at Eveleigh have been lowered for a distance of 32 chains.

Extensive renewals of both rails and sleepers on the Suburban Line will require to be made at an early date, as also between Granville and Glenfield. The superstructure of many of the bridges between Picton and Goulburn have been renewed, this portion of the line being now in first-rate order. The condition of the sleepers on the section between Goulburn and Gerogery is anything but satisfactory, necessitating very extensive renewals. A large quantity of ballast will also be required, more especially between Goulburn and Yass, and Harden and Cungegong.

The rails, sleepers, and fences on the South-Western Line are in good condition.

The following works have been carried out during the year: -

At Sydney-

New lamp-posts erected near dock at station. New lamp erected in front.of luggage office. New tool-house erected for Inspector Waring. Additional office erected for Inspector Waring. Platform at eastern end of station extended 38 feet.

New luggage office erected.

Pit closets at Locomotive Engineer's Office connected with sewer.

New office erected for cashier and paymaster. Engine fixed and shed erected in Domain for lighting Parliament Houses by electricity.

Engine fixed and shed erected in yard for producing electric light.

Gas laid on to electric light engine-shed.

Brick culvert at one-half mile lengthened 37 feet.

Interlocking apparatus altered.

Buffer stops fixed to dead-end siding at tunnel.

Additional closet accommodation provided at Mortuary.

Brass furnace erected.

New double arm signal erected to protect sidings.

At Sydney-continued.

New down line starting signal erected.

42 feet retaining wall, and four gate piers erected, one 200 candle lamp, and one 100 candle lamp, fixed at Devonshire-street.

Temporary gates erected near sheeting-shed. Two 70-candle lamps erected at station.

New departure platform flagged.

Platform walls on up side lengthened 80 feet. Two 400-gallon tanks fixed at electric light engine-shed in Domain and gas laid on to ditto.

Six additional closets at goods-shed almost completed and connected with sewer.

Concrete floor laid in shed for electric light engine, and galvanized iron screen erected.

At Darling Harbour-

New sewers completed.

Crane on wharf removed and re-erected.

New store-room erected for receiving copper.

Two water-closets and five urinals erected.

Bridge widened.

Iron wheel-plates fixed on approach to cart weigh-bridge.

At Darling Harbour—continued.

New goods-shed completed.

Open timber drain constructed and connected with sewer.

Buffer stops fixed at new siding to cattle-yards.

Water and gas laid on to new goods-shed.

Water laid on to hulk "Ricca Genora."

Water-closets connected with sewer.

Shed erected for protection of hose reel.

New platform erected at west end of shed.

Goods delivery office enlarged.

Two boxes made and fixed to hold extincteurs. Footpath formed, kerbed, and guttered, from main entrance gates to weigh-bridges.

New box erected for shunters.

Office erected for Inspector of erection of meat store.

Office for goods foreman enlarged.

Room for receiving copper enlarged.

At Eveleigh—

New stores and offices completed and water and gas laid on.

Three water-closets and urinals erected for Stores Department.

Two new turntables fixed at stores.

One 3-ton and one 10-ton crane erected at stores.

New office erected for Inspector of new workshops.

Box erected for store watchman.

Bridge at one mile lengthened.

Double-arm signal erected for protection of new sidings.

New oil store and platform erected.

Temporary platforms erected.

New signal-box erected.

Down-line starting signal erected.

Up-line distant signal erected.

New block box nearly completed.

New subway about half done.

At Macdonald Town—

Up and down line, starting signals erected.

At Newtown-

New subway at Liberty-street, completed. Temporary buffer-stops fixed at new siding. Bridge widened.

New weatherboard fence erected at bridge.

Buffer-stops fixed at new sidings.

Gas laid on to starting signals.

Verandah erected over porter's room.

New interlocking box erected.

Gas laid on to signal at Erskineville Bridge.

Up and down home signals erected.

Signal erected for protection of new sidings.

Mortuary and waiting room, nearly completed.

Brick culvert lengthened 25 feet.

At Petersham-

New goods office erected.

New lamp erected at level crossing.

At Petersham—continued—

Fender fixed to new goods-shed.

New overbridge at 3 miles 47.76 chains, about three-fourths completed.

Laying on water to station, nearly finished.

At Summerhill-

Platforms widened.

Forty panels of fence, 6 feet palings, erected at Station-master's house, and ninety-one panels erected to enclose Commissioner's land.

Verandah erected at back of Station-master's house.

New office erected.

New subway constructed.

New signal-box erected.

Up and down home signals erected.

Two new platforms, each 50 feet long, nearly completed.

At Ashfield-

Two additional rooms to Station-master's house completed.

Footpaths formed, kerbed, and guttered at Matilda-street bridge.

Small gates fixed in fence at Station-master's house.

New signal-box erected.

Fender fixed to new goods-shed.

New gas lamps erected.

At Croydon-

Gas laid on to station buildings. New foot-bridge erected.

At Burwood—

Closet provided in signal-box.

Additional cess-pit constructed.

Roof erected over urinals.

Booking-office extended.

Fender fixed to new goods-shed.

Up and down platforms lengthened 80 feet.

New over-bridge at Cheltenham-street, about half completed.

At Redmyre-

Gas laid on to Station-buildings.

At Homebush-

Water-closet erected at signal-box, cattleyards.

Fence erected, 203 panels three-rail with two wires, at new cattle-yards.

New dock-wall at cattle-yards completed.

Two turnstiles erected.

New loading yards erected.

New gate and fence erected at west end of cattle-yards.

New sheep-yards erected.

One semaphore, two distance, two starting, and three siding signals erected at cattle-yards.

New signal-box at cattle-yards nearly completed.

At

At Rookwood-

New water-closets and urinals completed.

Two 10-feet gates erected.

Cemetery platform lengthened.

Fender fixed to new goods-shed.

At Auburn-

400-gallon tank, fixed to block-box.

15-feet gate erected at Finegan's Paddock.

New signal-box erected.

Verandah erected in front of office.

At Clyde-

Temporary waiting-shed erected.

Fourteen lamps erected and gas laid on to

15-feet gate and guard rails fixed at Factorystreet.

Two wicket-gates erected.

At Granville-

Water laid on to Station-master's house.

Gate erected at permanent-way siding, near Granville.

New truck weigh-bridge fixed and office erected.

Engine-shed erected.

Ash-pit constructed.

Twenty-nine panels of fence paled.

Drain at Railway-street covered in.

New platform near Granville, completed.

Four gas-lamps erected on approach road.

New signal erected to protect sidings.

'At Fairfield-

New wicket gates erected.

Turnstile fixed.

Two houses for porters completed.

Sixty-six panels, 5-feet paling fence, erected at new porters' houses.

Picket fence erected.

At Cabramatta—

Door and verandah erected at waiting-shed.

At Liverpool-

Box erected for pointsman.

New cart weigh-bridge fixed and weigh-bridge office erected.

Drinking fountain fixed.

At Glenfield-

Thirteen panels three-rail fence erected.

At Ingleburn-

New platform and waiting-shed erected, and gate fixed to give access thereto.

At Minto-

Kitchen erected at porter's house.

Fender fixed to new goods-shed.

At Campbelltown-

New cart weigh-bridge fixed and office erected. Drinking fountain fixed.

At Picton-

Box erected for pointsman,

At Redbank-

Two distance signals erected.

New entrance gate fixed.

Culvert lengthened.

At Picton Lakes-

Engine pit constructed.

W.C. and urinal accommodation provided.

At Hilltop-

A new gate fixed.

At Colo Vale-

Station buildings erected and provided with the necessary fittings.

Tank-stand erected.

Porter's cottage removed from Bowning and re-erected.

Gate leading to goods yard removed.

Name boards altered.

Two tanks fixed at Station.

Platform made up to siding.

Rubble platform constructed.

Level crossing formed, pitched, and ballasted.

Office removed to Redbank.

At Rush's Platform-

Level crossing constructed and 16-feet gates fixed.

At Mittagong-

Cess-pits drained into creek.

Flagging laid in front of parcels office.

Platform lengthened 50 feet at north end.

Fender fixed to crane.

Buffer stops fixed at end of platform.

Fittings provided in telegraph office.

Position of signals altered.

At Bowral-

Drinking fountain fixed.

3-ton crane erected and fender fixed.

10-ton cart weighbridge fixed and office erected.

Turnstile fixed.

Platform for loading milk erected.

At Burradoo-

Entrance gate fixed.

At Austermere-

Scotch blocks fixed.

At Moss Vale-

Two lamps and posts erected.

Picket fencing erected to platform.

Fence removed and re-erected.

Platform erected in front of goods-shed.

Position of entrance gates altered.

Yard enlarged by removing a quantity of carthwork.

Large underground tank constructed at goods-shed.

At Meryla-

Passenger platform, 150 feet long, constructed.

At Bundanoon-

Two turnstiles fixed.

At Cable's Siding-

Level crossing constructed.

At Wingello Siding-

Two entrance gates fixed.

Porter's cottage removed from Bowning and erected.

Station buildings erected and fitted.

Repeater box fixed.

Loading-stage and dock.

At Barber's Creek-

Dam constructed for locomotive water supply.

At Marulan-

Station-master's residence erected.

Platform widened.

Fire engine stand constructed.

Repeater-box fixed.

At Towrang—

Urinals drained.

At North Goulburn-

Buffer stops fixed.

At Goulburn-

Loading-dock-wall constructed.

Brick passenger platform built.

Temporary refreshment-room erected.

Station-yard drained.

Repeater contact and box fixed.

Lamps and posts erected in store-yard.

Three sets buffer stops fixed to new sidings.

Hay-gauge fixed.

Office erected for Bridge Inspector.

Lockers provided in Guards' rooms.

Watchman's box erected for Store Department

Additions to Store buildings erected.

Goods-shed removed and re-erected in connection with new sidings.

Gates to goods-yard lengthened.

Fence removed and re-erected to enlarge store-yard.

Wicket gate fixed.

Level crossing-gates at Cole-street removed and re-erected.

At Joppa-

Rubble platform constructed.

Two distance signals erected.

At Yarra-

Level crossing removed from 140 m. 50 chs. to 140 m. 40 chs.

At Breadalbane-

Gate fixed at back of Station.

Station fittings provided.

Station-master's residence drained.

At Fish River-

Brick house erected for pumper.

At Gunning -

Platform lengthened 80 feet.

Signals altered.

Buffer stops fixed to cattle siding.

Lamp erected.

Tank stand erected.

Picket fencing erected to platform.

At Yass-

Temporary refreshment-room built.

Platform lengthened.

Kitchen scullery and store-room erected to refreshment-room, and fittings provided.

Approach to Yass Lime Company's siding fenced in, and wicket gate fixed.

Distance signals erected to Yass Lime Company's siding.

At Bowning-

Three-ton crane drained.

Fender fixed to 5-ton crane.

At Binalong-

3-ton crane erected.

Platform lengthened and coping of old platform altered.

Dock wall altered.

Gatehouse fenced in.

Surface stop blocks fixed.

Old ticket-office removed.

Signals altered.

Station buildings erected by contract.

Fence erected at station.

At Rocky Ponds-

Fire-place fixed in waiting-room.

At Harden-

Reservoir for Locomotive Department impounded and fenced in.

20-ton truck weighbridge fixed and office erected.

Brick kitchen erected to driver's cottage.

Two rooms erected for guards.

Verandah erected to Pumper Scharff's house.

Stock reserve fenced in.

Kitchen erected to Beverley's house.

Hay gauge fixed.

Shields fixed to W.C's. at locomotive cottages.

Alterations to driver's cottage.

At Murrumburrah-

3-ton crane fixed and fender provided.

Platform lengthened 48 feet and widened to 17 feet.

Semaphore erected.

At Nubba-

Brick gatchouse erected.

Brick platform 50 feet long constructed.

W.C's. and urinals erected.

Hay gauge fixed.

At Wallendbeen-

Additions to station-master's residence.

Goods-shed and loading-stage enlarged.

At Wallendbeen-continued-

Cart weigh-bridge fixed and office erected.

Additions to station erected.

Stock-yards. Fencing and gates to stock reserve.

Bland road gates altered to close across line.

At Cootamundra -

Passenger station drained.

Platform lengthened.

Fender fixed to 5-ton crane.

Pumper's cottage fenced in.

Hay gauge fixed.

Gate fixed between railway paddock and association ground.

Trespass notice board erected.

Signals altered.

At Mullaly's Siding-

Distance signals erected.

At Cungegong-

Turnstiles fixed.

Distance signals erected.

At Bethungra-

Well bricked 2 feet above ground.

Tanks fixed at back of station.

Sheep-yards erected. .

Pumping-engine-house removed from Bomen erected.

Additional water supply and crane Loco.

At Illabo-

Distance signals erected.

Circular wicket-gate fixed.

At Junee Junction-

Four brick and four wooden cottages erected for Locomotive Department.

Brick house erected for engine-drivers.

Porter's house removed from Bomen erected.

Brick gate-house erected.

Driver's house removed from Bomen and erected as Locomotive Inspector's office.

Temporary water-closets erected.

3-ton crane erected.

Cesspit constructed.

Goods-shed and loading stage removed and re-erected.

Station-yard drained.

Brick platform constructed.

House removed from 6m. 20chs. South-western Line erected.

Gate, 15 feet, erected at entrance to Triangle. 10-ton crane removed to Narrandera.

Gates erected on and approaches formed to level crossing.

Two kitchens erected to porters' cottages.

Portable house constructed for Telegraph Department.

Additional bed-room to Station-master's residence.

Palisading erected around Locomotive Inspector's office.

At Junee Junction—continued—

Refreshment room erected.

Auxiliary down distance signal erected.

Water supply provided for Locomotive Department.

At Harefield—

Two lamps and posts crected.

Porter's house fenced in.

At Bomen-

Gatekeeper's cottage fenced in.

Down distance signals removed and re-erected.

At Wagga Wagga-

20-ton truck weigh-bridge fixed and office erected.

Locomotive cottages drained.

Two additional water-cranes erected.

Office erected to cart weigh-bridge.

Guard Wright's cottage fenced in.

Hay-gauge fixed.

Name-boards altered.

Gates at level crossing at 309m 25chs. altered to close across line.

Gates at level crossing at 309m. 75chs. altered to close across line.

At Sandy Creek-

Stop and Scotch blocks fixed to Dr. O'Connor's siding.

At The Rock-

Grate fixed in station.

Name-boards altered.

At Yerong Creek-

Sliding doors fixed to waiting-shed.

Loading-stage covered in.

Tank-stand erected.

At Culcairn-

Water laid on to Station-master's residence.

Stock-yards erected.

10-ton cart weigh-bridge and office.

Up distance signal removed and re-erected.

At Gerogery-

10-ton cart weigh-bridge and office.

At Yambla-

Sliding doors fixed to waiting-room.

Name boards altered.

At Ettamogah-

Gate-house at 382 miles 70 chains drained.

Distance signals erected.

At Albury—

Two drinking fountains fixed.

Alterations to urinals and w.-c's.

Refreshment rooms built and kitchen and store erected.

Engine-pits altered and drained.

Porters' houses drained.

Dock wall extended.

Hay-gauge fixed.

Cart weigh-bridge office erected.

At Albury-continued-

Buffer-stops fixed at cattle-yard.

Booking office covered in.

Level crossing-gates at Wilson-street made to close across line.

Six lamps and posts erected.

Victorian goods-shed nearly completed.

Shed for electric light engine erected.

Louvre frames fixed to openings in tower.

SOUTH-WESTERN RAILWAY.

At Old Junee-

3-ton crane fixed.

10-ton cart weigh-bridge fixed and office erected.

Two register grates fixed in porter's house.

Station fittings provided.

Scotch-block fixed.

Tank-stand erected.

Fender fixed round goods-shed.

At Coolaman-

3-ton crane erected.

Porter's house drained.

10-ton cart weigh-bridge fixed, and office erected.

Two lamps and posts erected.

Fender fixed to goods-shed.

At Devlin's Siding-

Additional level crossing gates erected.

Waiting-shed erected.

Distance signals erected.

Sleeper platform erected.

At Grong Grong-

Goods-shed erected.

Porter's house drained.

Urinals drained.

Gate opposite station removed.

Lamp-room covered in.

Coupling stand erected.

Two lamps and posts erected.

Distance signals erected.

Sleeper platform erected.

At Narrandera—

Alterations to w.c's and urinals.

Cess-pit constructed.

Well for locomotive water supply.

20-ton truck weigh-bridge fixed, and office erected.

Drainage of engine-pits altered.

Office erected to cart weigh-bridge.

Porter's cottage fenced in.

Buffer stops fixed.

Fender fixed to 5-ton crane.

Tank to porter Day's cottage.

Repeating signal altered at Jerilderie Junction,

At Albury-continued-

Temporary Customs office erected.

Two sets buffer-stops fixed near goods-shed.

Water laid on to goods-shed.

Semaphore and two distance signals erected.

Unloading bank constructed at cattle-yards.

Cattle-yards drained, pitched, and metaled.

Embankment formed to carry Victorian goods

At The Quarry—
Temporary office removed to Yanko...

At Yanko-

Verandah erected to temporary office.

Notice boards and name boards fixed.

Distance signals erected.

Home signal removed from The Quarry and erected.

At Whitton (late Hulong)—

3-ton crane fixed with fender.

10-ton cart weigh-bridge fixed, and office erected.

Passenger station drained.

Alterations to station-master's house.

Sides of verandah covered in to form bathroom.

W.C's and urinals removed and re-erected at Yanko.

Fittings provided in station-master's office.

Two lamps and posts erected.

Two turnstiles fixed.

Lamp-room covered in.

Notice boards fixed, and name boards altered.

At Darlington-

3-ton crane, fixed with fender.

Station drained.

Distance signals erected.

Lamp-room covered in.

Sleeper-platform removed to 20 yards Darlington side of gates.

Two name-boards fixed.

At Benerembah-

Distance signals erected.

At Bringagee-

Distance signals erected.

Register grates fixed in station.

Entrance gate fixed.

Porters' house fenced in.

Notice and name boards fixed.

Fittings provided in station-master's office.

At Kooroongal-

Station name-boards fixed.

Distance signal erected.

Level crossing at 130 miles 63½ chains altered to the American system.

At Carrathool-

3-ton crane erected.

Register grate fixed in station.

Level crossing at 142 miles 71 chains altered to the American system.

Distance signals erected.

Three station name-boards fixed.

Mr. D. E. Glover's late office removed to 157 miles 70 chains.

Fittings in station-master's office.

Coupling stands fixed.

Lamp-room covered in.

At Uardry-

Station name-boards fixed.

Distance signals erected.

Approach made to wool platform.

Platform constructed of old sleepers at 144 miles 50 chains.

Level crossing constructed at 142 miles 71 chains.

At Beabula-

Footbridge erected in front of station.

Staff-box, notice-board, and name-boards fixed.

Temporary platform, 50 feet long, erected.

Lamp-room erected.

Distance signals erected.

Grate fixed to office.

Approach made to wool platform.

At Waradgery-

Sheep races fenced with sheep-proof fencing.

Distance signals erected.

Station name-boards fixed.

Level crossing gates at 165 miles 40 chains, made to close across line.

At Hay-

5-ton crane erected.

10-ton cart weigh-bridge fixed, and office erected.

Two turnstiles fixed.

Entrance and level crossing gates raised.

Alterations and additions to stockyards.

Old temporary office removed and re-erected in station-master's yard.

Station name-boards and notice-boards fixed. Seats provided in station lobby.

Fittings in station-master's office, parcels office, goods-shed, and telegraph office.

Gate fixed near engine-shed.

Level crossing gates at 167 miles 18½ chains, made to shunt across line.

Lockers in guards' rooms.

Two platform lamps and posts erected.

Picket gates fixed at back of employees' cottages.

CULVERTS constructed during the year.

				8	J 02227	•
At Miles.	Chains.	Number.	Number of Openings.	Size of Openings.	Depth of Waterway.	Remarks.
Through Eveleigh 123 124 177 193 195 205 206 276 286 S.W. 552 Railway { 67	73 55 50 28 6 5 3 21 56 69 65	1 1 1 1 1 1 1 1 1 1	1 1 1 3 3 1 1 1 1 1 3	ft. in. 4 0 3 0 2 0 -5 0 3 0 2 3 2 0 15 0 15 0 15 0 15 0 15 0	ft. in. 5 0 3 0 2 0 5 10 11 6 5 0 3 10 3 6 3 0 5 10	Brick; 661 feet long. ,, 65 ,, 660 ,,

CULVERTS lengthened during the year.

Milea	Mileage.				.
Miles.	Chains.	Size of Culvert.	No. of Openings.	Depth of Waterway.	Lengthened.
355	61	ft. in. 6 0	1	ft. in. 1 6	26 feet.

mp o t	ellowing sidings have been laid in during the warr-			,	
The I	ollowing sidings have been laid in during the year:—				feet.
	No. 1 siding next to main "down" line; Darling Har	bour	•••	•••	824
	No. 2 do next wharf, do		•••	•••	671
	Through road to main lines, do		•••	•••	157
	Do to Nos. 1 and 2 sidings, do		•••	•••	156
•	Wilton's siding extended, do		•••	****	348
•	New cattle-yards siding, do		•••	•••	758
	Through road to do do		•••	••• `	156
	New through road to main lines, Sydney	•••	•••	•••	157
•	Scissors road to, do	•••	•••	•••	176
	Two pairs slip points to sidings, do	•••	•••	•••	34
	Dead end siding at tunnel, do	•••	••• `	•••	202
	Temporary connection between main lines, Eveleigh	•••	• • •	•••	405
	Siding to main Illawarra "up" line, do	•••	•••	•••	70
	Do do "down" line, do	•••	•••	•••	70
	Quadrupling line to Sydney, "up" line, do	•••	•••	•••	2,153
	Do do "down" line, do	•••	•••	:••	2,157
-	Through road to do do	•••	•••	•••	173
	Store siding No. 1 "up" line side, do	•••	•••	•••	$2,\!555$
	Slip points to do . do	•••	•••	• • • •	27
	Store siding No. 2 "up" line side, do	•••	•••	•••	956
	Through road to Nos. 1 and 2 sidings, do	•••	•••	•••	157
	No. 1 siding between stores, do	•••			419
_	No. 2 do do do			•••	222
•	No. 1 traffic siding, top lift, do				1,238
	Through road to do do				104
	Slip points to No. 1 siding, do				18
	No. 2 traffic siding, top lift, do	.,,			795
	No. 3 do do do	•••	•••		774
	No. 4 do do do			•••	774
	No. 5 do do do				774
	No. 6 do do do				753
-	No. 7 do do do				753
	Siding to engine turntable, do	,			157
	"Down" line siding to new engine shed, do	•••	•••		862
,	"Up" line do do do	•••	•••	. 	639
	No. 1 locomotive siding, bottom lift, do	•••	•••	•••	835
	No. 2 do do do	•••	•••	•••	641
			•••	•••	709
		•••	••• •	•••	540
	_	•••	•••	•••	601
		•••	• • •	•••	72
		•••	•••	•••	1,254
	2,000		•••	•••	1,065
		•••	•••	•••	600
	No. 8 do do do	•••	•••	•••	878
	No. 9 do do do do No. 10 do do	•••	•••	•••	710
		•••	•••	•••	513
	_	•••	•••	•••	796
	_	•••	•••	•••	790 587
	<u> </u>	•••	•••	•••	718
	_	•••	•••	•••	945
		•••	•••	•••	945 956
	No. 16 do do do	•••	•••	•••	956 774
	No. 17 do do do do	•••	•••	•••	519
	No. 18 do do do	•••	•••	•••	872 ·
-	No. 19 do do do	•••	•••	•••	665
	No. 20 do do do	•••	•••	•••	794
	No. 21 do do do do do	•••	•••	•••	794 582
	No. 22 do do do	•••	***	•••	002

Sidings

					
Siding	s laid in during the year—continued—	·			
					feet.
	No. 23 locomotive siding, bottom lift, Eveleigh	ı	• • •	•••	1,338
	No. 24 do do do			•••	1,723
	No. 25 do do do	•••		•••	1,100
	Through road to No. 14 siding, bottom lift, do	•••	•••		226
	Do to engine turn-table, Eveleigh	•••	•••		248
	Do to No. 25 siding, bottom lift, Evele	ígh		•••	184
	Dead end siding, "up" line side, Newtown, exten	ded	•••		79
	Slip points to do do		•••	•••	21-
	No. 1 siding extended, do				140
	Siding No. 3, do				657
	Siding No. 4, do	•••			549
	No. 2 siding extended, do				107
	Through road to "down" line and new sidings, N	ewlown			184
	The state of the s	do	•••	•••	423
	Junction of Northern line with main "up" line, F			•••	120
	No. 1 siding extended, Homebush Cattle-yards	icamyre	•••	•••	73
	No. 2 do do do	•••	•••	•••	211
		•••	•••	•••	
		•••	•••	•••	746
		••	•••	•••	1,375
	No. 5 do do do	•••	•••	•••	1,601
	Dead end siding, west end, do	•••	•••	•••	123
	Two new through roads to sidings, Homebush Ca	ttle-yards	•••	•••	313
-	Through roads to main lines, do		•••	•••	176
	Siding on top of dock, do		•••	•••	1,216
	New siding, "down" line side, Auburn	•••	•••	•••	858
	Slip points to do do		•••	•••	21
	No. 1 siding at 12 miles 10 chains extended	•••	•••	• • •	211
,	No. 2 do do do	•••	•••		211
	Dead end siding No. 3 at 12 miles 10 chains	•••		•••	609
	Through road to main lines, Clyde				166
	No. 1 siding, "up" line side, Granville				1,090
	No. 2 do do do	•••			1,218
	No. 3 do do extended	•••			277
	No. 4 do do do	•••			218
	No. 5 do do do do	•••			65 -
	No. 6 do do do				162
	No. 7 do do do	•••			123
•	No. 8 do do do do .		•••		261
	No. 9 do do do do				135
	No. 10 do do do do				205
	No. 11 do do do do				130
	No. 12 do do do do	•••		•••	263
	No. 13 do do do do				424
	Through road to sidings, Granville	٩	•••	•••	161
	Loop siding at Redbank	•••	•••	•••	1,980
	Block siding do	•••	•••		451
	Slip points, Austermere	•••	•••	•••	58
	Loop siding, Moss Vale	•••	•••	•••	2,674
	Siding for Ringwood Coal Company, 92 miles 45 of	··· Thaine		•••	404
	Slip points, Baker's siding	Juming	•••	•••	36
	Sidings at North Goulburn	•••	•••	•••	
	Do at Coulbum	•••	•••	•••	601
	Do at Murrumburrah to Young Junction	•••	•••	•••	15,042
	• =	•••	•••	•••	233
	Siding at Wallendbeen extended	•••	•••	•••	124
	Sidings for traffic, Junee Junction	•••	•••	•••	1,420
	Block siding, do	. ···	•••	•••	261
	Siding for Dr. O'Connor at 316 miles 53 chains	•••	•••	•••	339
	Do at Culcairn extended	•••	···· .	•••	912
	1188—I	•	•		

Sidings laid during the year—continued. Sidings at Albury

 Sidings at Albury ...
 ...
 ...
 3,404

 Devlin's siding extended ...
 ...
 ...
 ...
 503

 Sidings at Grong Grong ...
 ...
 ...
 ...
 675

 Do at Narrandera ...
 ...
 ...
 ...
 ...
 52

Total feet 86,210

feet.

PERMANENT WAY RELAID WITH STEEL RAILS.

	1877.	1878.	1879.	: 1880.	1881.	1882.	1883.	Total.
	feet.	feet.	feet.	feet.	feet.	feet.	feet.	feet.
Main "up" line, 1st mile	1,387		2,465	533	238		1,677	6,300
Main "down" line, 1st mile	1,173	2,587	•••••	424	153		1,674	6,011
Main "up" line, Darling Harbour Branch			····••	531		1,509		2,040
Main "down" line, Darling Harbour Branch				259		1,487	271	2,017
Main "up" line, between 1 and 4 miles			325	••••		5,359		5,684
Main "down" between 1 and 3 miles	••••	20		3,864		3,272		7,156
Main "up" line, between 10 and 11 miles					5,280			5,280
Main "down" line, at 13 miles				273				273
Main line, between 14 and 15 miles		•••••	1,302		1,338			2,640
Do do 15 and 16 miles		••••				•••••	1,473	1,473
Do do 18 and 19 miles			•••••				907	907
Do do 20 and 21 miles		*****	·				147	147
Do do 26 and 27 miles					1,238	*****	••••	1,238
· Do do 51 and 53 miles		•••••				2,793	1,779	4,572
Do at 68 miles	952					····••		952
,	3,512	2,607	4,092	5,884	8,247	14,420	7,928	46,690

SIDINGS RELAID WITH STEEL RAILS.

	1879.	1880.	1881.	1882.	1883.	Total.
, -	feet.	feet.	feet.	feet.	feet.	feet.
Sidings at Darling Harbour	•••••••	,			182	182
Do at Sydney	••••	3,810	3,455	1,495		8,760
Do at Newtown'					256	256
Do at Ashfield		•	178			178
Do at Duck River		•••		.4	374	374
Do at Granville	743	829	··· ··•••		169	1,741
Do at Cabramatta			576			576
Do at Liverpool			1,275			1,275
	743	4,639	5,484	1,495	981	13,342

The following sleepers have been used for renewals during the year:-	The following sl	eepers have been	used for renewals	during the year:-
--	------------------	------------------	-------------------	-------------------

 Sydney to Granville Junction
 ...
 ...
 ...
 ...
 ...
 ...
 1,786

 Goulburn to Albury
 ...
 ...
 ...
 ...
 ...
 6,512

Total 11,266

The following sle	epers have been	used i	n new	sidings	s laid i	n durin	g the y	ear :-	_		
Sidings at	Darling Harbo	ur	•••	•••					901		
$^{\cdot}$ $^{\cdot}$ $^{\cdot}$ $^{\cdot}$ $^{\cdot}$	Sydney						•••		102		
Do	Eveleigh					•••			12,887		
Junction	of Illawarra Lii	1e		•••		•••	•••		362		
Sidings at	Newtown					•••			345		
Junction	of Homebush to) Wara	tah Li	ine		•••			37		
Sidings at	Homebush	•••	•••			• • •	•••		2,006		
\mathbf{D}_{0}	Auburn		•••	•••	•••	•••	•••		300		
$\mathbf{D_o}$	12 miles 10 ch	ains		•••	•••	•••			140		
\mathcal{D}_{O}	Clyde		•••	•••	•••		•••		17		
\mathbf{D}_{0}	Granville		•••				•••		1,271		
\mathbf{Do}	$\operatorname{Redbank}$	•••			•	•••			801	•	
\mathbf{D}_{0}	${f A}$ ustermere		•••		•••				12		
D_{0}	\mathbf{M} oss \mathbf{V} ale		•••		•••			•••	889		
Sidings fo	or Ringwood Co	al Co.		•••	•	•••			131		
Sidings at	Baker's Siding			•••	•••	•••			8		
\mathbf{D}_{0}	North Goulbur	rn	:	•••				•••	148		
\mathbf{D}_{0}	Goulburn	•••	•••	•••	•••	•••	•••		5,279		
Junction	of Murrumburn	ah to Y	Toung	Line			•••		81		
Sidings at	Wallendbeen	•••	•••						40	•	
\mathbf{D}_{0}	Junee Junction	n,				•••			781		
Do	Culcairn						,		370		
\mathbf{Do}	Albury		•••	•••	•••		•••		1,154		
\mathcal{D} o	Devlin's and G	trong G	rong	•••	•••				412		
\mathbf{D}_{0}	Narrandera		• • •	•••	•••	•••	•••	•••	19	•	
			j	Cotal		•••	•••		28,493		
The following qu	antity of ballast	t has be	en us	ed duri	ng the	year :-	_	,			
Sydney to	Granville June	tion		•••		•••	٠	•••	19,361 cu	abic yard	ls.
Granville	Junction to Go	ulburn		•••			•••		12,473	"	•
Goulburn	to Albury		•••	•••		•••			13,367	,,	
Albury to	River Murray		•••	•••		•••	•••	•••	36	· "	
Junee to	Hay	•••	•••	•••	•••	. •••	•••	•••	3,902	"	
		Total	•••	•••			•••		49,139	,,	

RAILWAY FENCE WIRED DURING THE YEAR.

Bounding the property of	Sides.	_				37 4 377	7	
		From		То		No. of Wires.	Length.	
		miles. chs.		miles. chs.			miles. chs.	
Commissioner for Railways	. 1	151	50	151	66	4	υ	16
Mrs. White	. 2	151	66	152	30	4	1	8
Mrs. Stubbs	. 2	180	0	181	20	1	2	40
Crown	. 2	211	60	212	30	2 ,	1	20
Catherine Crow on one side and Crown Land on the other	. 2	212	30	212	60	2	0	60
Mr. Brown on one side and Crown Land on the other	. 2	212	60	214	13	2	2	66
Do do	. 2	214	13	215	34	2	2	42
Mr. Ryan	. 2	215	34	216	34	2	2.	0
Mr. Ryan on one side and Mr. Brown on the other	. 2	. 216	34	216	75	2	1	· 2
Mr. Ryan	. 2	216	75	217	35	2	1	0
Mr. Hillers	. 1	257	15	259	15	3	2	0
Mr. Summerfield	. 1	259	15	260	60	2	1	45
Mr. Cowley	. 2	271	60	273	33	3	3	26
Do	. 1	274	20	276	41	3	2	21
Do	. 1	274	22	276	16	3 .	1	74
Total	·	<u> </u>		l		1	26	20

GREAT WESTERN RAILWAY.

Granville Junction to Parramatta—Double Line—Length, 1 mile 9 chains.

* Parramatta to Nevertire—Single Line—Length, 325 miles 32 chains.

Nevertire to Nyngan—Single Line—Length, 35 miles 64 chains. Opened for public traffic on 9th June, 1883.

Wallerawang to Capertee-Single Line-Length, 22 miles 74 chains.

The whole of the works on these sections have been kept in good repair during the year.

Both rails and sleepers have been renewed to a considerable extent on the section, Springwood to Bathurst, and a very large number more still remain to be so done. On the section, Bathurst to Orange, the rails are wearing very fast. 5 miles and 30 chains of the line have been relaid during the year; the sleepers are also decaying very rapidly, rendering very excessive renewals necessary. The road on the other sections is in very fair condition.

The following works have been carried out during the year:-

At Parramatta-

New doors fixed to waiting-shed, Parramatta Domain.

New platform erected at Oakes' Orchard.

Box erected for gate-keeper at Harris Park.

Water laid on to station and goods-shed.

New cart weigh-bridge fixed and office erected.

Retaining wall erected.

Drinking fountain fixed.

Gas lamps erected.

Pump fixed at good-shed.

Up and down home-signals erected.

Extension of platform at Parramatta Park—400 feet nearly completed.

Foot overbridge almost finished.

At Westmead-

Waiting-shed erected.

At Wentworthville-

Two 12-feet gates erected.

Up and down distance-signals erected.

At Seven Hills-

3-feet brick culvert lengthened 80 feet.

At Blacktown-

10-ton crane erected.

Office erected for Inspector of Erection of Station Buildings.

Fender fixed to new goods-shed.

At Rooty Hill-

Gate erected at stock-yards.

At Mount Druitt-

Waiting-shed erected.

At South Creek-

Loading-stage erected.

5-ton crane erected.

New lamp fixed.

At Cross Roads-

Buffer-stops erected.

At Penrith-

Additional tank frame erected for Locomotive

New dock walls completed.

Cart weigh-bridge fixed and office erected.

At Penrith—continued—

Bath-room erected for workmen.

Two additional rooms erected at pumper's house.

Two cattle troughs fixed.

Watch-box erected for gate-keeper at Heard's Crossing.

Water laid on to pumper's house at Nepean Bridge.

Foundations put in for machinery in lifting shed.

Alterations to refreshment room carried out.

Cess-pit constructed.

Stock-yard erected.

Cess-pit constructed at engine-men's house.

Brick chimneys built to smiths' hearths.

Galvanized iron partition erected between road and railway on Nepean Bridge.

Office erected for Locomotive Inspector.

Additional closet accommodation provided.

Sand furnace, shed, and stage erected.

Coal stage erected.

Signal erected to protect running-shed.

Lengthening of running-shed east and west nearly completed.

Lifting-shed for Locomotive Department approaching completion.

At Emu Plains-

Office erected for Inspector of erection of station buildings.

Up distauce-signal erected.

At The Valley-

Platform lengthened 50 feet.

Waiting-shed enlarged.

Lamp erected.

Verandah erected at waiting-shed.

400-gallon tank and stand fixed.

At Springwood-

Office erected for Inspector of erection of Station Buildings,

Sand-house altered.

Level crossing removed.

Fence removed and re-erected at proper alignment.

At Faulconbridge-

Buffer stops erected.

Lamp to show green light on both sides, provided for attracting notice of drivers.

At Numantia-

Lamp to show green on both sides for attracting the notice of drivers provided.

At Linden-

House for porter in charge erected. Sand-house altered.

At Woodford-

Lamp to show green on both sides for attracting the notice of drivers provided.

At Lawson-

Buffer stops erected.

Drain pipes laid to ladies' w.c.

Additional closet accommodation provided for ladies and gentlemen.

At Wentworth Falls-

Water laid on from large tank to station.

Buffer stops erected.

Dam altered.

Stove fixed in office.

Level crossing and gates erected.

At Katoomba-

Drinking fountain erected.

At Medlow-

New platform 100 feet long erected.

Lamp to show green on both sides for attracting the notice of drivers provided.

1 12-feet gate erected.

1 15

1 wicket

Buffer stops erected.

At Blackheath-

Locomotive reservoir deepened and dam raised. Temporary urinals and w.c. erected.

Mount Victoria-

New weigh-bridge fixed.

Locks fixed in parcels office and ladies' waiting-room.

New platform erected.

Two rooms, 12 x 12 and 12 x 10, and bathroom erected for guards.

Hartley Vale-

Goods-shed erected.

Lamp to show green on both sides for attracting the notice of drivers provided.

Mount Wilson-

Culvert in connection with new siding erected.

Clarence Siding-

Buffer stops erected.

At Zig Zag-Top Points-

Distant signal erected.

At Zig Zag-Bottom Points-

Distant signal erected.

Eskbank-

Buffer stops erected.

Drinking fountain erected.

Up and down, home, and siding signals erected.

Drivers' barracks removed from Eskbank to Bowenfels.

Tank and goods-shed erected.

Waiting-shed erected.

Picket fence in front of Mr. Brown's on down platform erected.

Ten lamps and posts complete erected in yard. Signals erected at Mort's siding.

At Lithgow-

Down platform lengthened 130 feet.

Up platform lengthened 80 feet.

Platform widened from 8 to 12 feet.

1-3 feet flat-top flood opening of stone slabs constructed.

At Bowenfels-

Loco. ash-pit drained.

Stove fixed in gate-keeper's house.

Gates at crossing 98 miles 14 chains erected.

At Marrangaroo-

Lamp to show green on both sides for attracting the notice of drivers provided.

At Wallerawang-

Box culvert and drain through yard constructed.

One drinking fountain fixed.

5-ton crane erected.

Main battery stand, 6 feet long, with six shelves erected.

Culvert, 3 feet, extended 33 feet.

Gate in station-yard removed and front of station thrown open.

Fence shifted back.

Fence made sheep and pig proof.

Up and down distant signals for Wallerawang Coal Company.

Station-yard drainage altered.

At Piper's Flat—

Gate put in fence at rear of porter-in-charge's house.

Space between station and urinals covered in.

At Ben Bullen-

Lamp to show green on both sides for attracting the notice of drivers provided.

At Cullen Bullen-

Bank for new station piled.

Gate put in fence at Mr. Hughes' tramway.

At Capertee—

Buffer-stops erected.

Up distant and up home signals erected.

Temporary counter erected.

Staff-boxes fixed.

Six cottages erected for Traffic Department.

At Rydal-

Scales adjusted.

At Sodwalls-

Buffer stops erected.

Lamp to show green on both sides, for attracting the notice of drivers provided.

At Tarana—

New kitchen to Station-master's house erected. Verandah over platform erected.

Station-master's house connected with locomotive tank.

Additions and alterations to Station-master's house.

Sand furnace erected.

At Locksley-

Fence round porter in charge's house.

Buffer stops erected.

Kitchen erected to residence of porter in charge.

At Brewongle-

Level crossing at 134 miles 75 chains.

At Raglan-

Station-master's yard fenced in.

Surface drainage to Station-master's house.

Water supply provided to station.

At Kelso-

New sheep and cattle yards in place of those at Bathurst.

New platform erected.

Cart weighbridge fixed.

Verandah to Station-master's house erected.

At Bathurst-

Verandah to drivers' barracks erected.

New workshops for blacksmiths erected.

One of Sugg's patent gas lamps erected at station.

Goods office enlarged.

Flood opening at Vale Road Crossing.

Shed for seasoning timber erected.

New rack for iron erected "Store Department."

Old lamp room converted into gentlemen's waiting-room.

Position of distant signals altered.

Shed for painters and plumbers erected.

Hay-stage erected.

New stove fixed in Station-master's house.

Stove fixed in Telegraph Office.

Steam-hammer furnace erected.

Tanks fixed in trucks for water train.

Gas laid on to back room of drivers barracks.

Roller blinds fitted in windows of Locomotive Inspector's Office.

W.-c. and urinals erected at gents' waitingroom.

At Orton Park—

Lamp to show green on both sides for attracting the notice of drivers provided.

At Perth-

Buffer stops erected.

Kitchen erected to house of porter in charge. Water supply provided to station.

At George's Plains.

Lock on crossing-gate.

Fence erected round Station-master's house.

Water supply provided to station.

At Wimbledon-

Up and Down Distant and Home Signals erected.

Weighing scales fitted.

Small office, 12' x 10' erected.

Office removed from Narromine, and reerected for porter-in-charge.

W.-c. and urinals erected.

At Nèwbridge-

Cart weigh-bridge erected.

At Blayney-

Drinking fountain fixed.

Fence erected round gate-house.

10-ton crane erected.

Buffer stops erected.

Station yard drained.

At Spring Grove-

Buffer stops erected.

At Spring Hill-

Tank with appliances in case of fire fixed.

New 5-ton crane erected.

Water supply provided to station.

Hay-gauge removed to better position.

At Orange—

Lockers at guards' barracks fitted with locks. 6-feet paling fence erected round station-yard. 5-ton crane erected.

At Mullion Creek-

Level-crossing gate altered.

Opening in waiting-shed closed with doors.

Water supply provided to station.

At Kerr's Creek-

Floor under locomotive tank cemented. House for porter-in-charge erected.

At Warne-

Opening in waiting-shed closed with doors.

At Store Creek-

Dam extended.

At Ironbarks-

Carriage dock built.

Opening in waiting-shed closed with doors.

Hay gauge erected.

Gatekeeper's watch-box, for man-in-charge of main crossing, erected.

At Springs-

House erected for porter-in-charge.

'At Apsley -

Waiting-shed erected.

New brick culvert and drains put in at 247 miles 6 chains.

At Wellington-

Drinking fountain erected.

Station-yard drained.

Buffer-stops erected.

Approach to level crossing, Gabolion Terrace, fenced in.

Temporary refreshment-room erected.

Water laid on from engine-tank to Station-master's residence.

Water at engine-tank connected with bathroom at Station-master's residence.

Box, 8' x 6', made and erected at cattle yards.

At Mary Vale-

Stove fixed in waiting-shed.

Fence erected round residence of porter-incharge.

Level crossing at 254 miles 30 chains shifted.

At Murrumbidgerie-

Stove fixed in office.

At Stock-yards-

Two sets of buffer-stops erected.

Drafting-race erected.

Approach to stock-yards fenced in.

At Dubbo-

Drinking fountain erected.

Eight drivers' lockers fixed in engine-shed.

House for Locomotive Foreman erected.

Box erected for gatekeeper in charge of Dowling-street crossing gates.

Box erected for gatekeeper in charge of Brisbane-street crossing gates.

Verandahs and coppers erected to four houses.

Twelve small boxes with locks provided for guards and shunters.

Counter erected in parcels room.

Ten additional boxes fitted up for guards.

At Bourke Road-

Small office erected.

Up and down distant and home signals erected.

At Ballast Siding-

Two distant signals removed to Carey's Siding.

At Narramine—

Home semaphore and two distant signals erected.

Cart weigh-bridge fixed.

5-ton crane erected.

At Carey's Siding-

Staff-box fixed.

Two distant signals from ballast siding erected. 40 feet temporary platform erected.

At Trangie—

Small office, 12 feet x 10 feet, erected.

Staff boxes fixed.

Office, waiting-shed, w.c., and small goods-shed erected.

Gate put in fence.

Home semaphore and two distant signals erected.

Gates put in fence at Dandaloo Road.

Gates at 325 miles 40 chains replaced by wider ones.

At Nevertire-

Temporary w.c. erected.

W.c. and urinals improved.

Cart weigh-bridge fixed.

Wicket gate erected.

Home semaphore and two distant signals erected.

Gates re-hung and man-holes provided at stockyards.

Carriage dock erected.

At Mullengudgery-

Home, up and down distant signals erected.

At Nyngan-

Home, up and down distant signals erected.

Gates put in fence opposite O'Grady's Hotel.

10-ton crane fixed.

Small office, 12 feet x 12 feet, erected for clerical staff.

W.c. removed to better site.

Shower bath, 10 feet x 10 feet, fixed.

Two water-closets and urinals erected for drivers.

Station-yards pitched.

The following sidings have been laid in during the year:—

							, COO.
Through road, Wentworthville	•••	•••	•••	•••	•••	•••	178
Siding for Mr. Smith, do			•••	•••			409
Through road, Seven Hills	•••	•••	·	•••		•••	175
No. 1 siding, up-line side	•••		,		•••		818
No. 2 do do		•••			,		745
Slip points to do		•••	•••	•••		•••	36
Dead end siding, South Creek						•••	203

s laid during the y	ear—con	umueu.						F
No. 3 siding, down	n-line sid	le. Penrith						÷
No. 4 do	do	do						4
No. 5 do	do	do				•••		į
Slip points to	do				•••			
Through roads to	do	***		•••		•••		
	main lin	е	•••	•••	•••	•••		
No. 1 siding, up-l				•••				1,
No. 2 do	do	do	•••	•••	•••			•
No. 3 do	do	do				•••		
No. 4 do	do	do		•••				
No. 6 do	do	do		•••				
No. 7 do	do	do	•••	•••	•••	•••		
No. 8 do	do	do	•••	•••	•••	•••	•••	
Dead end to No.		· -	•••	•••	•••	•••	•••	
No. 1 locomotive	_		 hadean	•••	•••	•••	•••	
No. 2 do	siding, c	do	do	٠	•••;	•••	•••	,
	noin un		uo	•••	•••	•••		
Through road to	_		•••	•••	•••	•••	•••	
Siding to coal stag	-		•••	•••	•••		•••	2
Siding to long eng	_		•••	•••	•••	•••	•••	2
U			•••	•••	•••	•••	•••	
Dead end siding e		•	•••	•••	•••	•••	•••	
No. 2 coal stage s				•••	:	• • • •	•••	
Three through ro			ige sian	ıg	•••	•••	•••	
Through road to	-	irntable	•••	•••	•••	•••	•••	
Siding at Katoom		•••	•••	• • •	•••	• • • •	•••	
Do at Hartley			•••	•••	•••	•••	•••	
Do do	ext	tended	•••	•••	•••	•••	··· .	_
Sidings at Kelso				•••	• • •	• • • •	•••	1
Do at Wimbl			•••	•••	•••	•••	•••	
Do at Mullio		··· ·	• • •	•••		• • • •	•••	
Siding at Ironbar			•••	• • •	•••	•••	• ···	
Sidings at Wellin	••	•	• • • •		• • •	•••	• • •	1
Siding for Mann,	Carey, &	& Co., at 27	9 m. 20	chs.	•••		•••	
Do . ·	do	at 27	'9 m. 50	chs.	•••	•••	• • •	
Do at 296 m.	60 chs.		••••	•••		•••		
Sidings at Nárrar	nine, ext	ended			•••		•••]
Siding at 301 m.	50 chs.		•••		•••		•••	
Do at Trangie				•••		•••		
Do for Waller	awang C	oal Compar	v. at 10	8m. 10	chs C	apertee	e line	

CULVERTS PUT IN DURING THE YEAR:-

Total feet

At .	No.	No of Openings.	Size of Openings.
13 miles 36 chains	1 1 1 1 1 1	1 1 1 1 1 1	ft. in. 3 0 3 0 3 0 3 0 2 0 5 0 2 0

... 21,285

PERMANENT WAY relaid with Steel Rails:-

Between 13 and 14 miles, Up line												
Between 13 and 14 miles, Up line		·	_							•		-
Between 13 and 14 miles, Up line			1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	Total.
Between 13 and 14 miles, Up line	-	•	1	<u> </u>	<u> </u>	1	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
Do 13 and 14 miles, Down line.	- .			feet.	feet.	feet.	feet.	feet.	fect.	fect.	feet.	fcet.
Do 14 and 15 miles								175	******			17
14 and 19 miles			•••	•••		1,451	2,106	417	••••			3,97
18 and 27 miles					1,082		106					1,18
20 and 34 miles								٠				1,44
Do 33 and 36 miles		26 and 27 miles	•••			! 	,		572			57
10 35 and 30 miles			•••					l .				3,76
Do 36 and 37 miles		35 and 36 miles					****					4,86
Do 37 and 38 miles	$_{ m Do}$	36 and 37 miles				147				ł		2,44
Do 38 and 39 miles	\mathbf{Do}	37 and 38 miles	•••	l			Į.	l				5,28
Do 39 and 40 miles	\mathbf{Do}			i .		_		l				4,81
Do	\mathbf{Do}			1		, ,			1 .	1		
Do	\mathbf{D} o	41 and 43 miles		1			i		1			3,03
Do 44 and 45 miles		42 and 44 miles	ľ	i		l		ł	l			4,60
Do 45 and 45 miles			ľ					t	l		,	2,40
Do 46 and 47 miles				}			ł.	1	l		1	49
Do 47 and 48 miles				[ı	ļ		******		81
Do 43 and 50 miles				•••		• • • • • •	• • • • • • • • • • • • • • • • • • • •	******	3,387		•••••	3,38
Do 49 and 50 miles 5,280 5,280 5,280 5,280 1,518 4,224 1,4 miles 1,4 miles 1,4 miles 1,254 1,320 1,5 and 154 miles 1		47 and 46 miles	1	•••	••••	•••••		•••••	*****	660		66
Do 49 and 50 miles 5,285				•••	*****	*****				4,356		4,35
Do 50 and 53 miles 5,325 3,644 10,566		49 and 50 miles	. • • •			•••			5,280			5,28
Do 55 and 50 miles		50 and 53 miles	5,325	3,644	10,560			924			1	20,4
Do 56 and 57 miles		55 and 56 miles	697							2,640		5,2
Do 57 and 58 miles	\mathcal{D}_{0}	56 and 57 miles		ŀ			1	2,640	l			4,1
Do 58 and 62 miles	· Do	57 and 58 miles		1	l	l	l .					9,2
Do 62 and 63 miles.	\mathbf{Do}		1	1	į .	ı	l .		T	1 - :	1	
Do 63 and 67 miles	Do			1	i	l •.	l .	Į.				13,99
Do 66 and 68 miles	D_0			1		l	1	1				1,18
Do 68 and 69 miles			l	l		l	1 7 7				_	16,17
Do 76 and 77 miles				l .	l	l	1	ſ	'	1.		10,2
Do 89 and 90 miles				1		ŀ	1					3,30
Do			i .	l		l	l					2,6
Do 91 and 92 miles	_			ı	I	ı						3,0
Do	_			•••	******	••••			•••••	3,366	******	3,3
Do			l		• • • • • • •			4,884	•••••	396		5,28
Do			•••	•••					•••••	••••		4,2:
Do 149 and 150 miles		147 and 148 miles		•••	462							4
Do			•••	•••	990							9
Do 153-and 154 miles		149 and 150 miles			1,254							1,2
Do 154 and 157 miles		153-and 154 miles						5,214		1		6,5
Do 157 and 158 miles	Do 1	154 and 157 miles					i			1	1 -	9,7
Do 158 and 159 miles										ł		3,7
Do 160 and 162 miles	Do 1	158 and 159 miles		l	ł		1		ı			2,2
Do 162 and 163 miles	Do 1	160 and 162 miles					I		1			
Do 163 and 164 miles 924	Do 1	162 and 163 miles					1		ı			₋ 7,9:
Do 164 and 165 miles			1	ļ	1 -		!		l		1	I
Do 165 and 166 miles 858	Do 1	164 and 16z miles	l .	1					l	1	1	. 9
Do 166 and 169 miles		16z and 166 miles	;				1		1	l .	1	1,3
Do 170 and 171 miles	Do 1	166 and 160 miles		1	-		l		1			8
Do	Do 1	too and tot miles	l		i		l		1		-	22,9
Do 173 and 174 miles		tat and tae miles		i		ł .	ı					1
Do 174 and 176 miles		rea and rea miles	1				ı					5
Do 176 and 177 miles	י סת	1/3 and 1/4 miles						į	·····		1	2,6
Do 176 and 177 miles	בי בער די מרד	174 and 170 miles		1			ı		••••	4,884	2,772	7,6
Do 181 and 182 miles	no i	70 and 177 miles	t	•••		•••			••••			8
Do 181 and 182 miles					2,112				•••••		ļ	2,1
Do 186 and 188 miles		t81 and 182 miles	•••		1,254					1	1	1,2
Do 188 and 189 miles	Do 1	186 and 188 miles		ļ								5,2
Do 191 and 192 miles	T) .	188 and 189 miles	•••							, -		1,5
(Poto)	ז סעד			i	ı			l		1		1,4
Total	Do 1	191 and 192 miles										
1041	Do 1	191 and 192 miles					- 				-,+3-	-71,

PERMANENT WAY RE-LAID WITH RE-ROLLED IRON RAILS.

Between 54 and 55 miles		•••		•••		• • • •		4,686 feet.
Between 56 and 57 miles			• • •	•••				1,122 ,,
Between 61 and 62 miles				•••				2,310 ,,
Between 62 and 63 miles	•••	•••		•••		•••	• •••	3,498 ,,
	\mathbf{T}_{0}	otal		•••	•••	•••		11,616 feet.

SIDINGS RE-LAID WITH STEEL RAILS.

			1880.	1881.	1882.	1883.	Totals.
Sidings at Penrith Siding at Hartley Vale Sidings at Esk Bank	•••	•••	 feet. 277 697	feet: 166	feet. 628	feet. 101	feet. 895 277 697
Total	•••	•••	 974	166	628	101	1,869

iding at Wentw								990	feet.
iding at Katoon					• • • •	•••		1,191	,,
iding at Macoon					•••	•••	•••	546	"
iding at Mount iding at Hartley						•		558	,,
iding at marile	y vale		•••	•••	•••	•••	•••		
·		To	tal	•••	•••		•••	2,625	feet.
he following sle	onorg have	haan naed	in new	aidings	laid in	during	the v	ear :	
	Wentwort		III HOW	51411262	200200				134
Do Do	Seven Hill		•••	•••					211
			•••	•••				•••	16
D ₀	Blacktown		•••	•••	•••	•••	•••		3,794
Do	Penrith		•••	•••	•••	•••	•••		250
Do `	Katoomba	_	•••	•••	•••	•••	•••	•••	282
Do	Hartley V		•••	•••	•••	•••	•••	•••	
Do	Kelso		•••	••••	•••	•••	• • •	•••	600,
\mathbf{Do}	Wimbledo			•••	•••	•••	•••	•••	120
\mathbf{D}_{0}	Mullion Cr	eek		•••	• • •	•••	•••	•••	63
Do	Ironbarks	•••		•••			•••	••••	18
Do	Wellington	a				•••	•••	·	500
Do	279 miles 2	20 chains						•••	34
Do	279 miles				•••	•••	٠		34
Do	296 miles							•••	86
Do	Narramine								366
Do .	301 miles		•••						31
	•								80
Do Do	Trangie		Capart	 oo lina	• • •			•••	117
.Do	108 miles	to chains,	, Capert	eg mig	•••	•••	•••		
			Total	•••	•••		•••		6,736
The following sle	eners have	been used	l for ren	ewals d	uring t	the year	:		•
	Junction to							1	6,388
	to Nyngan					•••	: 		3,350
Dathurst	w ryngan	•••	•••	•••	•••	•••			
			Total	•••	•••	•••	•••	1	9,738
The following qu	antity of ba	llast has	been use	ed durir	ng the	year:—		~	•••
						•			ibic yard 1 970
	Junction to		•••	•••	•••	•••	•••		1,870
Orange to			•••	•••	•••	•••	•••		3,740
	Nyngan		•••	•••	•••	•••	•••	•••	2,884
\mathbf{W} alleraw	ang to Cap	ertee	•••	•••	• • •	•••	•••		200
	To	tal cublic	yards						8 ,694
The following sl	aanana harra	heen 1180	d for do	ablino t	he line	during	the v	 : ear	
rne ronowing si Doubling	eepers nave : line Parrar	natta to I	Penrith						300

RAILWAY FENCE WIRED DURING THE YEAR.

	Mil	eage.	No. of Wires.	Length.
Bounding the property of .	From	То	110. 01 111100	
	ms. chs.	ms. chs.		ms. chs.
Mr. Abbott	102 10	103 60	2	1 50
Mr. Greenbalgh	107 10	108 20	2	1 10
Mr. Mutton	154 0	156 55	3	2 55
Mr. Wilson	162 0	163 5	4.	0. 75
Total	.,,			6 30

RICHMOND LINE.

Single Line-Length, 16 miles 11 chains.

This line and the various works in connection with it have been kept in first-class order.

The timber bridge at $34\frac{1}{2}$ miles has been strengthened.

The following works have been carried out during the year:-

At Blacktown-

Distance signals erected.

At Schofield's Siding-

Retaining wall erected.

At Riverstone-

Water-closet and urinals erected.

At Mulgrave-

New water-closet and urinals erected.

At Windsor-

Temporary platform erected at Gosper's paddock.

Station removed from Richmond and re-erected.

Temporary parcels' room erected.

Office erected for Inspector of Erection of Station Buildings.

Retaining wall and fence erected.

New station erected by contract.

At Richmond-

Fittings provided in new station.

Hay gauge erected.

New goods-shed completed.

Cart weigh-bridge fixed and office erected to same.

5-ton crane erected.

Stock-yards erected.

Tank erected for Locomotive Branch.

Water-pipes laid from well to temporary tanks.

PERMANENT-WAY RELAID WITH STEEL RAILS.

	, 1878.	1879.	1880.	1881.	1882.	1883.	Total.
,	Feet	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.
Between 21 and 26 miles	2,642	3,192	,	10,563	2,215		18,612
Between 32 and 35 miles		••••		795	525	;	1,320
Between 37 and 38 miles		··········			1,659	********	1,659
Total	2,642	3,192		11,358	4,399		21,591

The following sleepers have been used for renewals during the year:—

Blacktown to Richmond

152

The following quantity of ballast has been used during the year:-

Ballasting permanent-way $262\frac{1}{2}$ cubic yards.

LIST OF MACHINERY IN WORKSHOPS ON 31ST DECEMBER, 1883:-

Carpenters' shop-

- 1 30-horse power semi-portable engine
- 1 dimension planer
- 1 wood-turning lathe
- 2 circular saw benches
- 2 tenoning machines
- 1 horizontal boring machine

- 1 cross-cutting machine
- 1 band saw machine
- 1 fret saw machine
- 1 variety wood-working machine
- 2 mortising machines
- 1 surface planing machine.

List

List of Machinery in Workshops-

Fitting shop —

2 12-inch lathes
1 10½-inch lathe

2 10-inch lathes

1 6-inch lathe

1 small hand or power drilling machine

5 vertical drilling machines
1 radial drilling machine
2 slotting machines

1 shaping machine 5 planing machines

2 screwing machines

1 wood-turning lathe.

Smiths' shop

1 12 horse power portable Engine

1 fan, to blow 16 fires

2 punching and shearing machines

2 steam hammers

1 10-horse power semi-portable engine.

Plumbers' shop-

2 burring machines 2 swedging machines 1 punching machine 1 guillotine machine 2 folding machines

1 set tinsmiths' rollers

1 washer punching machine

1 pipe-screwing machine 1 curving machine.

ACCOUNT of Permanent-way Rails, turned, renewed, and broken, from the opening of the various Extensions, Great Southern, South-western, Western, and Richmond Lines, to 31st December, 1883.

		Date	Time opened for traffic up to		Rails.	_
Extensions.	Length.	when opened for traffic.	31st December, 1883.	Number turned.	Number renewed.	Number broken.
Sydney Yard to 1st mile-post	ms. chs. 13 16 8 68 11 65	26 Sept., 1855 20 ,, 1856 17 May, 1858	yrs. ms. 28 3 { 27 3 25 7½	1,859 3,325 1,148 609	2,060 1,759 275 129	9 . 15 3 8
Campbelltown to Menangle Menangle to Picton Picton to Mittagong	6 50 12 28 23 75	1 Sept., 1862 1 July, 1863 1 Mar., 1867	21 4 20 6 16 10	227 769 3,438	70 351 1,184	12 1 10
Mittagong to Sutton Forest Sutton Forest to Marulan Marulan to Goulburn Goulburn to Gunning	8 62 28 57 19 73 30 20	2 Dec., ,, 6 Aug., 1868 27 May, 1869 9 Nov., 1875	16, 1 15 4 14 7 8 2	285 569 521 1,211	38 86 196 2,064	8 25 24 98
Gunning to Bowning Bowning to Binalong Binalong to Murrumburrah Murrumburrah to Cootamundra	29 26 14 42 19 48 25 13	3 July, 1876 1 Nov., ,, 12 Mar., 1877 1 Nov., ,,	7 6 7 2 6 9 ¹ / ₂ 6 2	1,018 302 128 211	2,111 417 401 298	42 3 1
Cootamundra to Bethungra Bethungra to Junee Junee to Bomen Bomen to South Wagga.	15 10 18 28 17 38	15 April, 1878 6 July, ,, 3 Sept., ,,	5 8½ 5 6 5 4	145 40 40	241 104 94	3
South Wagga to Gerogery Gerogery to Albury Albury to River Murray	5 1 58 63 18 37 1 0	1 ,, 1879 1 ,, 1880 3 Feb., 1881 14 June, 1883	4 4 3 4 2 11 0 6½	30	30	
Sydney to River Murray	387 20			15,875	11,908	262
Junee to Narrandera Narrandera to Darlington Darlington to Currathool Currathool to Hay	37 66 33 66	28 Feb., 1881 1 Sept., ,, 1 Mar., 1882 4 July, ,,	2 10 2 3 1 10 1 6	•••••	5 I 	5 3
Junee to Hay	167 29				6	8
Granville to Blacktown Blacktown to Rooty Hill Rooty Hill to South Creek South Creek to Penrith	8 24 3 66 3 75 4 66	4 July, 1860 12 Dec., 1861 1 May, 1862 7 July,	23 6 22 0½ 21 8 21 6	996 218 170 552	459 82 52 266	18 13 1
Penrith to Wentworth Falls Wentworth Falls to Mount Victoria Mount Victoria to Bowenfels Bowenfels to Wallerawang Wellowware to Rydel	27 70 14 70 19 49 7 46 6 11	11 ,, 1867 1 May, 1868 18 Oct., 1869 1 Mar., 1870 1 July, ,,	16 5½ 15 8 14 2½ 13 10 13 6	9,212 4,184 .4,249 916	3,705 1,671 1,408	5 13
Wallerawang to Rydal Rydal to Locksley Locksley to Brewongle Brewongle to Raglan Raglan to Kelso	.5 31 .5 3	1 July, ,, 20 April, 1872 1 July, ,, 4 Mar., 1873 1 May, 1875	13 6 11 8 11 6 10 10 8 8	337 1,660 614 214 276	165 10 24	3 4
Kelso to Bathurst Bathurst to Blayney Blayney to Orange Orange to Wellington	1 35 27 69 19 75	4 April, 1876 1 Nov., ,, 19 April, 1877 1 June, 1880	7 9 7 7 2 6 8½	299 818 180	15. 202 3,802 1,986	4 1
Wellington to Dubbo Dubbo to Nevertire Nevertire to Nyngan	55 55 28 11 63 5 35 64	1 Feb., 1881 20 Oct., 1882 9 June, 1883	3 7 2 11 1 2 0 7		3 3 	3
Granville to Nyngan	361 36			24,895	14,123	73
Wallcrawang to Capertee		15 May, 1882	I 7½			
Blacktown to Richmond	16 11	1 Dec., 1864	19 1	471	396	

Nore.—This statement does not include the relaying of the line from Sydney to Granville, laid originally with Barlow rails, and renewed with ble-headed rails, nor those portions of the Southern and Western Lines which have been and are being relaid with steel rails.

The following shows the number of men per mile of single line engaged in the maintenance of the permanent way:—

Great Southern, Western, and Richmond Railways.

Sydney to Granville Jun	ction.	includi	no Has	lem's	Craale C	'amatan	· r Dron	.ah	Men per mile.
Darling Harbour Bra								юц,	1.00
Granville to Goulburn		iu Diui	-60, -11	ma or .	Daning	114100	ur	•••	1.30
	•••	•••	•••	•••	·	•••	•••	• • • •	1.00
Goulburn to Albury	•••	•••		•••	•••	•••			1.08
Albury to River Murray		•••	•••		•••			•••	1.50
Junee to Narrandera	•••				•••				1.07
Narrandera to Hay		•••	·	•••					1.20
Granville Junction to Bath	hurst	•••		• • • •		•••	•••		0.70
Bathurst to Orange		•••			•••			•••	0.94
Orange to Wellington	·				•••				0.9
Wellington to Dubbo		•••						•••	1.00
Dubbo to Nevertire			•			•••			0.83
Nevertire to Nyngan			• • • •		•••				1.34
Wallerawang to Capertee					•••	•••			0.70
Blacktown to Richmond			•••	•••	•••	•••		•••	0.93

GREAT NORTHERN RAILWAY.

Newcastle to West Maitland-Double Line-Length, 20 miles.

The permanent way has been maintained in good condition.

With one or two exceptions the bridges are in good order, and all are safe beyond doubt.

The buildings and other works are in first class order.

West Maitland to Tamworth-Single Line-Length, 161 miles 28 chains.

The permanent way, bridges, and other works on this section, have been kept in a satisfactory state.

Tamworth to Uralla—Single Line—Length, 63 miles 57 chains.

With the exception of the occasional filling up of the side drains in deep cuttings, this portion of the line has not been troublesome to maintain.

Uralla to Armidale-Single Line-Length, 14 miles 72 chains. Opened for public traffic 1st February, 1883.

The permanent way and works on this section have been maintained in good order with little difficulty.

Bullock Island Branch-Double Line-Length, 1 mile 43 chains.

Morpeth Branch—Single Line—Length, 4 miles.

All the works on these branches have in every respect been kept in a satisfactory state.

North-western Branch, Werris Creek to Gunnedah—Single Line—Length, 40 miles 40 chains.

Gunnedah to Narrabri-Single Line-Length, 56 miles 5 chains.

The permanent way, bridges, &c., on these sections have been maintained in excellent order at a moderate outlay.

The following works have been carried out during the year :-

At Newcastle-

Two 100-candle lamps erected at steamer's wharf.

Gasaliers fixed in Traffic Manager's Office.

Loading stage for goods traffic erected.

Plank way laid from Great Northern Wool-dumping and Shipping Co.'s Stores to wharf.

Level crossing constructed from Newcastle Wool-dumping and Shipping Co.'s Stores to wharf.

Crane removed from eastern and re-erected in western goods-shed.

At Honeysuckle Point-

Mortuary station erected.

Permanent way workshops, 200 feet by 40 feet erected.

Offices erected for Permanent Way and Locomotive Branches.

At Honeysuchle Point—continued—

Store-yard fenced in.

Oil store erected.

Gas laid on to Permanent Way and Locomotive Offices.

Urinals erected at Mortuary station.

At Bullock Island Dyke-

Signals erected.

Iron-shed erected for store department.

At Hamilton-

Platforms lengthened and a waiting-room and closet erected.

A 60-feet coal weighbridge fixed. Signal boxes erected.

At Waratah-

Loading platform erected.

At Wallsend Junction-

Junction of Wallsend Coal Co.'s line doubled.

At Sandgate-

Gate-house erected.

Platform erected at General Cemetery.

At Hexham-

Waiting-room erected.

Wharf constructed.

At Tarro—

5-ton crane erected.

At Woodford-

Ticket office, waiting-room, and porters' residence erected.

At East Maitland-

Level crossing constructed at King-street. Well sunk for supplying water to engines.

At Morpeth-

Additional office erected.

At West Maitland-

Additions and improvements made to stationmaster's residence.

Gas laid on to goods offices.

Church-street kerbed and guttered from Steam-street to station.

Dwarf-wall erected in front of station.

Three-rail fence erected in Church-street, between station and station-master's residence.

At Farley—

Stages provided for unloading sheep from upper tiers of trucks.

At Allandale-

Goods-shed erected.

Ticket office erected.

Closet and urinal accommodation provided.

At. Greta-

5-ton crane erected.

At Branxton-

New goods-shed erected and approaches formed,

At Whittingham-

Stockyards erected.

At Singleton-

Commissioner's ballast land fenced in.

Pumping engine-house erected and well sunk for Locomotive Department.

At Scone-

Stockyards enlarged and improved.

At Wingen-

Platform lengthened.

Level crossing removed to Livingstone-street.

At Murrurundi-

Carpenters' shop erected.

Over-bridge erected in lieu of level crossing near Murrurundi.

At Willow-tree-

Station-master's residence fenced.

At Quirindi-

Passenger platform lengthened.

At Werris Creek-

Engine turntable fixed.

At West Tamworth-

Signals altered and improved.

At Tamworth—

Loading platform erected.

Wicket gates fixed at Denison and Fitzroy Streets.

Signals altered and improved.

Gas lamp erected at Brisbane-street crossing.

Gas fittings provided in house rented by Mr. Hole.

Fence erected at house rented by Mrs. Mason.

At Moonbi-

Room altered for accommodation of Post Office Department.

At Walcha Road—

Stockyard erected.

Wool stage erected.

At Wollon-

Platform and waiting-shed erected.

At Kentucky-

Station-master's residence erected.

Small platform and loading stage erected.

At Uralla-

Crane erected.

Signals altered and improved.

At Kelly's Plains -. .

Waiting-shed and platform erected.

At Armidale-

Dray weigh-bridge fixed.

5-ton crane erected.

Between Uralla and Armidale the gates of main road crossings have been altered to close across the line.

At Curlewis-

Additions to porter's residence erected.

Small goods-shed erected.

Sidings

At Emerald Hill-

Platform and waiting-shed erected.

At Baan Baa-

Platform and waiting-shed erected.

At Narrabri-

Twelve cottages erected for employés.

5-ton crane fixed.

Wool stage constructed and approach thereto metalled.

The points and signals have been interlocked and gas has been laid on to signals at the undermentioned places, viz.:—

Newcastle Station yard.

Burwood Junction, near Newcastle Station.

Merewether-street Crossing, near Workshop-yard.

Bullock Island Crossing, near Honeysuckle Point Station.

The following	sidings	have	been	laid	in	during	the	year:-
---------------	---------	------	------	------	----	--------	-----	--------

Siding for Newcastle Wool	Dum	oing a	and S	Shipping	Comp	any,	Feet.
Newcastle			•••				417
Siding for Great Northern W	ool Di	ampin;	g and	Shipping	Comp	any.	
Newcastle		•••			, 1	•••	495
Goods siding, Newcastle, exten	ded		• • •	•••	•••	•••	1,320
Siding to new store, Honeysucl		nt ·	•••	•			198
Siding in workshops-yard	•••	•••		•	•••		1,056
Coal sidings extended, Bullock	Island	Junct	tion				2,688
Goods siding extended, Hexhan		١		•••	····.		. 288
Do do Tarro	•••	· • •		•••			198
Siding to sheep stage, East Ma	itland			•••			102
T) 1 TO 1	•••					•••	441
Goods siding, Allandale							· 444
Siding, Whittingham							120
Goods siding, Singleton, extend		•••		•••	•••		1,608
Coal siding lengthened near Sir			•••				231
Siding, Quirindi					•••		651
Do to loading platform, Tar	nworth		•••		•••	•••	423
Do at Curlewis, extended		•••	•	•••	•••	•••	743
Do at Emerald Hill				•		:	264
,		_	•••		• • •	•••	
	Total	feet	•••	. •••	••• ,	·	11,687
7DI C 33 1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	•	_		_			
The following sleepers have been used	tor rer	iewals	durin	g the yea	r:		
Newcastle to Murrurundi	•••	•••	• • • •	•••	•••	•••	338
Werris Creek to Narrabri	•••	•••	•••	•••		•••	50
•	Total						388
The following quantity of ballast has b	een us	ed dur	ing th	e year :-	_		
No-contlate Manager					•		C. yards.
Newcastle to Murrurundi	•••	•••	•••	•••	•••	•••	2,047
Murrurundi to Tamworth	•••	•••	•••	•••	•••	•••	5,120
Tamworth to Armidale Werris Creek to Narrabri	•••	•••		•••	•••	,,,,	4,050
werns creek to Narraori	•••	•••	•••	•••	· , * • •	•••	2,300
	Total			••••	·		13,517
,					•		
The following sleepers have been used	in new	siding	gs laid	in durin	g the y	ear :	_
Sidings at Newcastle	•••	•,• •	•••	•••	••••		744
Do Honeysuckle Point	• • •	•••	•••	•••	.,.	•••	418
Do Bullock Island June	tion	•••		•••	•••		896
Do Hexham				•••	•••		96
Do Tarro	•••	•••	•••	·	•••	•••	66
Do East Maitland		•••	•••		•••	`	34
Do Farley	•••	•••	•••	•••	•••	•••	147
Do Allandale	•••			٠	•••	•••	148

					_				
Sidings at	Whittingham	•••		•••	•••		•••		40
\mathbf{D}_{0}	Singleton			•••				•••	613
\mathbf{D}_{0}	Quirindi	•••		•••	•••		•••	•••	217
\mathbf{Do}	Tamworth	•••	•••		•••	•••		•••	141
\mathbf{D} o	Curlewis	•••	`	•••	•••	•••		•••	248
$\mathbf{D} o$	Emerald Hill	•••	•••	•••	•••		•••	•••	88
			Total					-	3.896

RAILWAY FENCES WIRED DURING THE YEAR.

Pounding the grounds of	Mile	eage.	'No. of Wires.	Length.
Bounding the property of—	From	То	No. of Wifes.	Length.
Mr. Long	ms. chs. 118 16	ms. chs.	2	ms. chs.

ACCOUNT OF PERMANENT-WAY RAILS TURNED, RENEWED, AND BROKEN DURING THE YEAR.

			Date	Time o			Rails.	
Extensions.	Leng	th.	when opened for Traffic.	up to 31st Dec., 1883.		Number turned.	Number renewed	Number broken.
Newcastle to Murrurundi, including Morpeth and Bullock	ms.	chs.		yrs.	ms.			
Island branches	124	69				366	671	
Murruruudi to Quirindi	24	7 8	13 Aug., 1877	6	$4\frac{1}{2}$		761	
Quirindi to Tamworth	37	23	15 Oct., 1878	5	$2\frac{1}{2}$		114	. ·
Tamworth to Moonbi	12	0	9 Jan., 1882	2	0		4	
Moonbi to Uralla	51	57	2 Aug., 1882	1	5			
Uralla to Armidale	14	72	1 Feb., 1883	, 0	11		1	1
Newcastle to Armidale, including Morpeth and Bullock Island branches	265	59			····	366	1,551	1
Werris Creek to Gunnedah	40	40	11 Sept., 1879	4	31/2		37	
Gunnedah to Boggabri	24	5	11 July, 1882	1	5 <u>1</u>			
Boggabri to Narrabri	32	0	4 Oct., 1882	1	3			
Werris Creek to Narrabri	96	45					37	

LIST OF MACHINERY IN WORKSHOPS ON 31ST DECEMBER, 1883:-

1 band saw

1 planing machine

1 general joiner

1 25-h.p. horizontal engine

1 Gunther's fan

1 Cornish boiler

1 drilling machine

100 feet 3-inch shafting.

1 mortising machine

The following shows the number of men per mile of single line engaged in the maintenance of the permanent way:—

Men per mile.

								•	TOIL POL MINI	
Newcastle to Murrurundi, in	cludin	g Mor	peth an	d Bulle	ock Isla	ınd bra	nches	•••	0.80	
Murrurundi to Tamworth	•••	•••	•••	•••		•••		•••	1.10	
Tamworth to Armidale				•••					0.95	
Werris Creek to Narrabri				•••	•••	••			0.96	

No. 1—continued.

GENERAL REMARKS.

RAILWAYS.

A very considerable amount of work of every description has been carried out during the year.

The repairs to the timber bridges on the Southern Line have been very heavy, and must continue to be so in consequence (to a very large extent) of the inferior class of timber put in them. I am sorry to have to make this statement, but do so in order that nothing but the very best qualities of timber might be allowed to be used on any of the extensions; or; what would be much better, that timber might be done away with entirely as iron bridges can be constructed for less money than some of the timber ones are now being built for. Several timber bridges have also been repaired on the Sydney end of the Western Line, but only to keep them in safe working order until the duplication of the Line.

The repairs to the iron bridges were stopped by order of the Minister for Public Works in July last. Several of them will require a good many new rivets put in, and the work closed and painted.

The permanent way on all the lines is in excellent running order, but a very considerable number of sleepers has been and will require to be renewed, and this, I consider, is largely due to the bad description of timber allowed to be put in.

The running sheds at Penrith and Bathurst are nearly completed, and the large iron running shed at Eveleigh is approaching completion, with pits, roads, &c., capable of accommodating 126 locomotives.

The foundations for the locomotive workshops are half finished, awaiting the roof and columns from England; the other half will be put in hand without delay.

The interlocking of points and signals by Mackenzie and Holland's system has been carried out at sixteen of our stations, and instructions have been given to introduce the system at seventy-one other places.

A large building for the frozen meat business is being erected at Darling Harbour, the first story of which is already in a forward state.

I think it quite time that something should be decided on with regard to further accommodation at the Redfern terminus in the way of covered platforms, roads, &c.

The accommodation at Darling Harbour should be extended without delay. At this dull season it scarcely affords facilities for the conduct of the business, and when the Illawarra and Northern Lines are brought in, I am confident that it will be found altogether insufficient.

I have, &c.,

GEORGE COWDERY.

TRAMWAYS FOR 1883.

EXISTING LINES.

Lines.	Opened for Public Traffic.	Length of Single Line.	Length of Double Line.	Total	Length.
		ms. chs.	ms. chs.	ms.	chs.
Redfern to Hunter-street	15th September, 1879		1 39.29	1	39-29
Hunter-street to Bridge-street	15th August, 1882		0 19:99	0	19:99
Liverpool-street to Randwick Race-course	14th September, 1880		2 41	2	41
Race-course to Randwick	19th March, 1881		1 2.09	1	2.09
Randwick to Coogee	25th January, 1883		1 50.76	1	50.76
Darlinghurst to Ocean-street	12th March, 1881	0 6.80	1 40.36	1	47.16
Ocean-street to Waverley	13th April, 1881	1 25.84		.1	25.84
Woollahra Line	17th May, 1881	0 65.22		o	65.22
Crown-street Line	15th September, 1881	0 68.91	•••••	0	68'91
Redfern to Junction of George-street West and	15th August, 1882		0 43.94	0	43.94
Glebe Road. George-street West to Glebe Point	15th August, 1882	0 72.75	0 4.85	0	7 7·60
Junction of George-street West and Glebe Road to	15th August, 1882	0 57.06	0 6 [.] 53	0	63·59
Forest Lodge. University Gates to Johnson-street, Leichhardt	18th June, 1883	••••••	1 21 41	1	21.41
George-street West to Newtown Bridge	2nd October, 1882		1 27.09	1	27.09
Newtown to Marrickville	31st December, 1881	1 26.68	0 42.25	1	68·9 3
Redfern to Botany	17th May, 1882	2 52.09	4 14:03	6	66.12
Campbelltown to Camden	10th March, 1882	7 33	•••••	7	33
,	,				
		16 8.35	16 33.59	32	41.94

Not very great progress has been made with Tramway extensions this year. The roads are in fair running order, or as well as they can be kept with the description of rail used, which are too light for the service and not of the best pattern, as it is impossible to keep the joint in first-rate order.

Before any more extensions can be brought on to the Elizabeth-street lines it will be absolutely necessary to extend the facilities at the terminus, and as this is not easy to accomplish the better plan will be to continue the system round the city as was originally intended.

No. 2 carriage-shed has been erected at Randwick by contract, and other improvements carried out by the Department. These are particularised further on.

The following works have been carried out during the year :-

Coke-shed enlarged at Tramway yard, Pitt-street.

New gates fixed at Tramway yard, Pitt-street.

New waiting-shed and ticket-office erected at Treasury grounds, Bridge-street.

Buffer-blocks fixed at end of each road in shunting-yard, Bridge-street.

Ten panels of 6-ft. paling-fence erected between Tramway and Police yards, Bridge-street. Coke-shed enlarged at Sydney.

Suggs' lamp erected at corner of King and Elizabeth-street.

New coke-shed erected at Treasury allotment.

Shed erected for ambulance at Bridge-street.

New waiting-shed erected at Elizabeth-street, Sydney.

New waiting-room erected at Liverpool-street, Sydney.

New water-closets and urinals erected at Bridge-street.

New lamp erected in front of waiting-shed, and two lamps fixed inside of shed at Elizabeth-street.

New lamp erected in front of waiting-shed, and two lamps fixed inside of shed, at Liverpool-street.

Gratings fixed to drain-pipes in ash-pits at Tramway yard, Pitt-street.

Foot-paths in front of waiting-sheds asphalted at Elizabeth and Liverpool Streets.

New coke-stage erected at Bridge-street.

Dwarf-wall and galvanized-fence erected at Tramway-yard, Bridge-street.

New outer ring fixed at turntable, Bridge-street.

Verandah erected at corner of Market and Elizabeth Streets, Sydney.

New office, with fittings, erected for Traffic Foreman at Tramway-yard, Bridge-street.

Coke-shed enlarged at Moore Park.

Engine-pit drained at Moore Park.

Six lamps erected at stopping-places between Randwick and Coogee.

New spring-furnace erected at Randwick.

Four new forges erected at Randwick.

Water and gas laid on to house for Superintendent of Rolling Stock, Randwick.

Fittings in new store, Randwick.

New platform erected at store, Randwick.

New water-closets erected at Randwick.

New urinals erected at Randwick.

New iron store erected at Randwick.

New office erected for Inspector of Car-sheds at Randwick.

House for Superintendent of Rolling Stock erected at Randwick by contract.

Approaches, &c., to house for Superintendent of Rolling Stock at Randwick, tar-paved.

No. 2 Car-shed, Randwick, almost completed by contract.

New platform erected at Randwick Racecourse.

Waiting-shed removed, and re-erected at Randwick.

New sand-furnace erected at Randwick.

Gas laid on to store and store-offices at Randwick.

House erected over sand-furnace at Randwick.

New tank-stand erected, and pipes laid to same, at Coogee.

Suggs' lamp erected at corner of Oxford and Crown Streets.

Alterations to water-supply, Crown-street.

Waiting-shed enclosed at Queen-street, Woollahra.

Pair of gates erected at waiting-shed, Queen-street, Woollahra.

New water-crane erected at Queen-street, Woollahra.

New gas-lamp erected at junction of Ocean-street and Old South Head Road.

Coke-shed enlarged at Waverley.

New gas-lamp erected opposite the staffman's box at the loop line, Old South Head Road, Waverley.

New coke-shed erected at Queen-street junction, Woollahra.

Suggs' lamp erected at corner of Devonshire and Castlereagh Streets.

Box erected for pointsman, Waterloo terminus.

New well sunk at Botany.

New tank-stand erected at Botany.

Tank-stand enclosed at Botany.

New water-closets and urinals erected at Botany terminus.

Box erected for pointsman at junction of Newtown and Glebe Roads.

New water-crane erected at Newtown.

New lamp erected at Newtown bridge.

Water-crane removed, and hydrant fixed, at Newtown.

Watch-box erected for pointsman, Enmore.

Watch-box erected for pointsman, Forest Lodge.

New water-crane erected at Forest Lodge.

New waiting-shed erected at Forest Lodge.

New water-crane erected at Glebe Point.

Water supply, Leichardt Tramway.

New up and down line distant signals erected at Narellan.

New water-closet erected at Narellan.

New down line distant signal erected at Camden.

New stock-yards erected at Camden.

New dock-wall built at Camden,

Two water-closets erected at Camden.

New waiting-shed erected at Camden.

New tank-stand erected at Camden.

New ash-pit constructed at Camden.

Iron-plated guard rails fixed at level crossing on and near Camden bridge.

Seven trenches, on American plan, constructed at level crossings on Camden line.

Thirty-six notice boards fixed between Campbelltown and Camden.

New gates (2) erected at Kirkham-lane, Camden Tramway.

Twenty panels 3-rail fence erected on Tram Line, Campbelltown to Camden.

PERMANENT-WAY RELAID.

	1881.	1882.	1883.	Total.
	Feet.	Feet.	Feet.	·Feet.
Redfern to Bridge-street	4,620	9,931	********	14,581
Liverpool-street to Darlinghurst	2,932	5,570	*******	8,502
Darlinghurst to Moore Park	1,140	652	506	2,298
Crown-street Line	*******	153	2,587	2,740
Darlinghurst to Waverley	386	7,716	5,564	13,666
Woollahra		542	368	910
Redfern to Botany		384	8,610	8,994
Moore Park to Randwick		*******	420	420
Redfern to Glebe Point and Forest Lodge			4,650	4,650
Newtown to Marriokville			3,499	3,499
. Total	9,078	24,978	26,204	60,260

Siding	gs relaid during the yea	ır : 			•				
	Sidings at Randwick	workshops			•••	•••		1,0)98 feet.
	Do at Camden		•••		•••	•••	•••	1	.27 "
		Total	•••	•••			•••	1,2	25 feet.
The fo	ollowing sidings have b	een laid in	during	the ye	ar :—				
	0111 + D 11 +	. 357 3	. , ,	•					Feet.
	Sidings at Bridge-stre		tended	•••	•••	•••	••:	•••	66
	Through-road, Randw		•••	•••	•••	•••	•••	•••	126
	Sidings at coke-shed,		l	•••	•••	•••	•••	•••	483
	Through-road, do	do	•••	•••	•••	***	•••	•••	132
	* * '.	- do	•••	100	•••	•••	•••	•••	27
	Siding at Forest Lodg	_	•••	•••	•••	•••	• •••	•••	879
	Through-road, do		•••	•••	•••	•••	•••	•••	126
	Junction of Leichhar		•••	·	•••	•••	•••	•••	855
	Through-roads, Static		ewtow:	n	•••	•••	• • •	• • •	259
	Through-road, Bolance		•••	•••	•••	•••	•••	•••	129
	Siding at Curran's H	ill, Camden	line	•••	•••	•••	•••	•••	381
				Total	•••	•••	•••		2,463
The f	following sleepers have	been used	during	the ye	ar·:—				
	Doubling line, Newton		-	_		•••	•••		394
	Laying-in Leichhard	t Junction	•••	•••	···.		<u>.</u>		264

Renewals-

	Renewals—								•
	Redfern to Bridge-street		••		•••	•••	•••	٠	36
	Liverpool-street to Randwick	•		•••	•••			•••	37
				Total		•••	•••		73
•	New Sidings— At Curran's Hill			•••	•••		•••	•••	120

The following quantities of ballast have been used for maintenance of the various lines during the year:—

Section.		Grav	el.		Sands	tone t	allas	st.]]	Blue m	etal.		Blue n	netal s	creeni	ings.
	Tons.	cwts.	qrs.	lbs.	Tons. o	Tons. cwts. qrs. lbs.		Tons.	cwts.	qrs.	lbs.	Tons.	cwts.	qrs.	lbs.	
Redfern to Macquarie-street							73	0	1	12	293	3	1	16		
Liverpool-street to Randwick	Liverpool-street to Randwick 11 8 2		0					277	6	0	18	227	14	3	15	
Darlinghurst to Waverley & Woollahra	a		•••••		580	8	2	25	358	1	1	8				
Crown-street line					44	9	0	0	28	8	1	20				
Redfern to Forest Lodge & Glebe Point	270	13	0	0				424	3	3	24	241	7	2	11	
University gates to Leichhardt							189	19	2	13	160	3	1	3		
Parramatta-street to Marrickville		• • • • • • • • • • • • • • • • • • • •			ļ	·····			1,595	12	3	17	4	7	0	17
Redfern to Botany	22	10	. 3	0			·····		218	19	0	23	173	18	2	8
Campbelltown to Camden	••••••		132	0	0	0	••	•••••	•••••			•••••	•••••			
Total	304	12	1	0	132	0	0	0	3,403	19	3	20	1,487	4	2	14

The following line has been doubled by the Department during the year:—

Feet.

Newtown Bridge to Boland's Corner

2,733

List of new culverts constructed during the year :-

	No.	No. of openings.	Span of openings.	Depth of clear water-way.	Description.
At Narellan	1	1	9 feet	3 feet	Close top on driven piles.

The following shows the number of men per mile of single line engaged in the maintenance of the permanent way:—

						are	n per mue.
Redfern to Bridge-street		•••	•••	• • •	•••	•••	1.44
Liverpool-street to Randwick	•••	•••	•••	•••	•••	•••	1.55
Randwick to Coogee	•••	•••	**1	•••	•••	•••	0.90
Crown-street line	•••	•••	•••	•••	•••		1.16
Darlinghurst to Waverley and	Wooll	ahra	•••	•••	•••	•••	1.17
Redfern to Botany	•••		•••	•••	•••	•••	0.73
Redfern to Forest Lodge and G	lebe I	Point	•••		•••	•••	1.00
George-street West to Marrick	ville	•••	•••	•••	•••		1.38
Leichhardt line		•••	•••	•••			1.18
Campbelltown to Camden	• • •	•	•••	•••	•••	•••	0.81

No. 2.

The Locomotive Engineer to The Commissioner for Railways.

Department of Public Works, Railway Branch,

Sir,

Locomotive Engineer's Office.

In accordance with your instructions, I have the honor to submit the following report respecting the maintenance of the locomotive, carriage, and waggon stock on the Southern, Western, and Northern Lines during the year ending 31st December, 1883.

The whole of the locomotive stock available for traffic has been kept in good working condition, and more than the usual number have been repaired; but I am sorry to point out that the number of engines standing waiting for repair is increasing, and the boiler repairing has become very extensive. This indicates that it is now impossible to do all the repairing in our Redfern shops, and unless we soon get more accommodation the stock of engines, tenders, &c., wanting repair will increase very seriously. The repairs and renewals to engines have for a number of years been in arrear, consequent upon the inadequate workshop accommodation at our disposal, and when the new shops are handed over it will be a work of time to recover the ground that has been lost. The mileage and the number of vehicles are constantly being added to, which renders our difficulties in carrying on the traffic more serious. The speedy completion of the shops is a matter that cannot therefore be too earnestly urged to enable this Branch to be worked with efficiency and economy. The want of workshop and running-shed accommodation for the Northern Line is also productive of much inconvenience, and renders the carrying on of the work with despatch and efficiency a matter of difficulty.

I have placed additional machine tools in the shops at Redfern and Newcastle, and more mechanics have been employed. The result of this has been that more work has been turned out than in any previous year; but still it is very far short of what I consider is required to keep the lines equipped in that state of efficiency I desire to see them in. Means will have to be devised to make room for some additional machines in the Sydney workshops, in order to meet the increasing requirements, as, in addition to the general inconvenience arising from our inability to do all the work that I would like to see done through want of shop room, the cost of carrying out the work is considerably augmented. The erection of the shops and running-sheds is, however, I believe, being pushed on with all practicable despatch, and when we are given possession of them it is to be reasonably expected that we shall be able to show even more satisfactory results than we have been able to do this year.

No engines or vehicles have been allowed to run that were in anything approaching what was considered a dangerous state, as indeed special attention has been bestowed on the matter of examination of boilers, axles, tires, draw-gear, &c., so as to render impossible accidents that could be prevented by human foresight.

The six new suburban tank engines, ordered to replace six obsolete or worn-out engines, have arrived, and their cost will be charged against Revenue, less the present value of the old engines.

Twenty-eight new engines have been added to our stock during the year—four of these were made in the Colony, and our total number of locomotives now amounts to 296. Although there are more goods engines on order, and some arriving, I consider it highly necessary, in view of the increasing traffic, and the opening of new extensions, to order more, otherwise it will be exceedingly difficult to work the prospective traffic, more especially as our facilities for repairing are not increasing nearly so rapidly as I should wish.

The whole of the carriage and waggon stock available for traffic has been maintained in good working order; but it has been absolutely impossible to keep up the trimmings and decorations of the carriage stock in anything like the condition I desire to see them in, on account of the scarcity of shop room at disposal, and the pressure of the Traffic Department in asking for the use of carriages even when they are undergoing repair in the shops and yards.

The facilities for carrying on the repairs and renewals are not nearly commensurate with the magnitude of a railway system such as ours has become, and the vehicles brought in could not be turned out with that expedition which is so essential a part of economy in working. Damaged wagon stock had been accumulating for about three years, until their number reached nearly 100. With our appliances it was impossible to renew them, and a contract has therefore been entered into with a private firm for the renewal of 100 vehicles (mostly D wagons), the cost of which will, as usual, be made a charge against working expenses.

The recent removal of the work of repairing waggons from the Redfern yard to Eveleigh was not at first productive of any very beneficial result, either as regards economy of cost or general convenience, so far as this Branch was concerned. This, however, was only to be expected, as the transfer had to be

made

31

made before the necessary preparations at Eveleigh were complete, the removal being necessitated by the urgent demands of the Traffic Branch for more accommodation at Redfern. The latter branch of course at once benefited by the change; and as soon as the several temporary appliances for repairing waggons were completed the advantages of the work being carried on in a less confined space were reaped by this Branch, although the conveniences for carrying on the work is very far short of what is required.

On account of the severe drought during a portion of the year, and the dry nature of the country through which some of our lines extend, we suffered considerably at a great many places for want of water, and it has been necessary to adopt special appliances for supplying the locomotives. This has necessarily increased our working expenses; but I am happy to say that I have made provision at several stations to prevent scarcity of water in future. The following additions and improvements have been made:—

Additional water-tank at Penrith.

A complete (new) water supply at Linden.

A good 8" steam-pump placed at Blackheath.

A pulsometer pump put down at Tarana.

Pumping machinery removed and put higher up the River Bogan, at Nyngan.

Additional well sunk at Bethungra.

Two new water-cranes and an additional water tank erected at passenger station, Wagga.

An entire rearrangement of water supply, new tank, new engine, and pumps, at Richmond.

Extensive improvements at Yass.

Additional engine at Singleton.

The new offices for the Northern Division of this branch were completed and occupied early in the year.

The contracts entered into in 1879 for a five years' supply of rolling-stock, other than engines, expired at the close of the year, and were carried out in a very satisfactory manner by the contractors.

Fresh contracts were accepted for the ensuing five years' supply. The successful tenderers were as under:—

Contracts Nos. 6, 7, 8, and 9, Messrs. Hudson Bros., S.W. & R.

- Nos. 6, 7, 8, 9, & 10A, R. A. Ritchie, North, but subsequently transferred to Hudson Bros.
- ,, No. 10, Mr. Stephen Glasson, S.W. & R.

I am pleased to report that upon the whole this Branch has been successfully worked during the year, and, considering the disadvantage under which it is labouring, has been carried on with efficiency, and also with a minimum of accidents as compared with many other railways, which speaks well for the vigilance and competency of its employés.

Herewith I forward a complete list of returns in connection with your annual report, as shown below:—

- 1. Abstract of rolling stock on hand on 31st December, 1883, and the number and description of vehicles supplied in 1883.
- 2. Rolling stock on hand on 31st December, 1883.
- 3. Statement of the number and class of rolling stock manufactured by the different contractors during the year 1883.
- 4. Weights of locomotive engines and tenders, empty and loaded, on 31st December, 1883.
- 5. Weights of locomotive engines and tenders, and mileage run by each engine.
- 6. Abstract of total and average weights of rolling stock, empty.
- 7. Statement of the number and classification of persons employed in Locomotive Branch.
- 8. List and condition of locomotive engines and tenders on 31st December, 1883.
- 9. List of machinery on all lines, 31st December, 1883; and list of machinery added to stock during the year 1883.
- 10. List of machinery in workshops, 31st December, 1883.

I have, &c.,

W. SCOTT,

Locomotive Engineer.

MACHINERY

No. 2—continued.

MACHINERY IN WORKSHOPS.

No.			Description	n.			Remarks.	
	,	1		Machine	s Shop,	, Sydney	<i>}</i> •	
1	20-h.p. horizo			•••				In good order.
2	Old locomotiv	_	above	•••	• • •	•••		In fair order.
3	D_0	do	•••	•••	•••	•••	•••	· do
168	Duplex wheel		 1 +umnin a	10+ho	•••	•••		In good order.
172	8-ft. double-l 4-ft. 6-in.	do do	do do	lathe	•••	• • •		do , do
176	4-ft. 6-in.	do	do	•••	•••	•••	•••	do
5	4-ft. 6-in.	do	do	•••	•••	•••	:::	do
128	4-ft. 6-in.	do	do		•••	•••		do
6	3-ft. 6-in.	do	do					do
7	5-ft. 6-in. sin			ning lathe	э	• • •		In fair order.
8 9	4-ft.	do wtting lethe	do		•••	•••		In fair order.
129	15-in. screw-o 15-in.	do		. •••	• • • •	•••		In good order.
10	12-in.	do	•••	•••		•••	• • • • • • • • • • • • • • • • • • • •	do
120	12-in.	do	•••	•••	•••		•••	do
125	12-in.	do						do
12	11-in.	do				•••	• • • •	Not in use, being past repair, and about to
		•					1	be replaced with a new lathe; charged againt working expenses.
13	10-in.	do		•••		, •••	•••	In good order.
14	10-in.	do	•••		•••			do
15	10-in.	do		•••	•••		• • •	. do
121 124	10-in. 10-in.	do		•••		•••	• • • •	do
174	10-in. 10-in.	do do	•••	• • •		•••	•••	do do
16	9-in.	do	•••	•••	•••	•••		do
17	8-in.	do -	•••	•••		•••		In fair order.
122	8-in.	do	•••	•••	•••			In good order.
123	8-in.	do			•••			do
173	8-in.	do	•••	•••	• •.	•••	•••	do
131	6-in.	do	••••	•••	•••	*	• • • • •	, do
19 135	9-in. commo		е	•••	• • • •	•••	• • • •	In fair order.
49	Hand and sli		•••	•••	•••	•••	•••	In good order.
93	Brass finisher	na' latha	•••		•••	•••	•••	do
20	12-ft. planing				•••	•••		In fair order.
21	10-ft.	do	•••	•••				In good order.
22		do		•	• • •		•••	do
23 164			•••	•••	•••	•••		In fair order.
24	Circular shaq Double-head	nng macmm	e nachina	•••		•••		In good order.
$\mathbf{\tilde{25}}$	Single-heade	d do	пастице	•••	•••	•••	•••	In fair order.
126	do	do		•••	•••	•••		In good order.
134	do	do		•••	• • •			do
180	do	, do		•••	•••	•••		do
26	Bolt and nut		•••	•••	· ···	•••	• • •	do
$\begin{array}{c} 27 \\ 133 \end{array}$	do Bolt and nut	do : centreina r	 nachina	•••	•••	•••	•••	do do
184	Single-heade			•••	•••	•••	•••	Not yet erected.
152	Top grooving				•••	•••	•••	In good order.
165	Circular slot	ting machine	е	•••	•••	•••	•••	In good order.
28	Slotting mac	hine, 12-in.	stroke	•••	•••	•••		In fair order.
29 166	do Single genre	6-in.			•••	•••	•••	do
166 30	Single-geared Screwing ma		acnine	•••	•••	•••	** •	In good order. do
144	do	· · · · · · · · · · · · · · · · · · ·		•••		•••	•••	do
31	do		•••		•••	•••		· do
32	Cylinder bor			lathe)	•••	•••	•••	do
33	Radial drillir	ng machine		•••	•••	•••	•••	do
34 35	do	do	•••	•••	•••	•••	•••	do
36	do Vertical drill	do ina machina	•••	•••	•••	•••	•••	do \\\ do \\
143	do	do do	•••	•••	•••	•••	•••	do //
37	Small	do	•••	•••	•••	•••	•••	do
38	do	do	•••	•••	•••	•••	•••	do ,
127	Vertical	do	•••	•••	• • • •	•••	•••	do
163	Tire-boring r		•••	•••	•••	•••	•••	do .
167 40	Drill for whe		•••	•••	•••	•••	•••	do
ŦU	Official saw	nencii	•••	•••	•••	•••	•••	In use as table for "marking off" plate in fitting shop.

No. 2-Machine Shop, Sydney-continued.

	· 1					- ,		
No.	,	Desc	ription.		·,			Remarks.
41	Circular saw bench	•••	•••	•••	•••	•••		Worn out; about to be replaced with a new
42	Grindstone and trough	h			•			one; charged to Revenue.
43	Grindstone and trough		•••	•••	•••	•••	•••	In fair order. In fair order.
151	20-in. double emery w	heel	· • • •	•••	•••	•••	•••	In good order.
48	Twist drill grinding m	achine	•••	•••	•••	•••	•••	do
44	Pillar crane for lathe	•••	•••	•••	•••	•••		do
45	Jib crane for lathe	•••			•••	•••	.,,	do
46	Overhead crane for lat	the	•••	•••	•••	•••		do
47	do do do		•••	•••	•••	•••	•••	do
50	Overhead travelling cr	rane	•••	•••	•••	•••		do .
51	do do	C 11			•••	•••	•••	do
	Shafting, pulleys, &c.,	ior the	foreg	oing	•••	•••	}	do
				B_{i}	oiler S	hop.		•
55	10-h.p. portable engine			•••		•••	•••	Old boiler worn out and replaced with a new one, in good order.
56	Large punching and sl	hearing	machi	ne	•••	•••		In good order.
57	Small do		0	•••	•••	•••		do
58 50	Pillar vertical drilling	machin	e	•••	•••	•••		do
59 156	Plate-bending machine		•••	•••	•••	•••	•••	do
60	do do Fly punching machine	•••	•••	•••	•••	•••	•••	Not yet erected.
61	Circular saw for cutting	 ar tuba		•••	•••	•••	•••	In good order.
62	Blast fan	ig tube	s	· •••	•••	•••	•••	do do
63	Vertical saw	•••	•••	•••	•••	•••	•••	Transferred to Junee.
96	Plate-heating furnace	•••	•••		•••			In fair order.
94	Tube-cleaning machine	·		•••	•••			In good order.
	Shafting, pulleys, &c.,	for the	foreg	oing	•••	•••	l	do
				Pa	ttern S	hop.		•
52	14-in. pattern-maker's	lathe						In good order.
53	Small wood-turning lat		•••	• • • •		•••		do
54	Wardell saw bench	•••		•••		•••		do
145	Band saw		•••			•••		do
153	Moulding tool grinder	•••	•••			•••		do
98	Vertical saw	•••	•••	•••	•••	•••	•••	do .
		•		Black	csmith's	s Shop.		- ,
64	Tire-bending machine	•••	•••	•••	•••		•••	Not in use (not being required for steel tires now in use).
65	Tire-stretching do	and fur	nace	•••	•••	.:.		In good order.
66 67	Iron crane for wheels	• • • •	•••	•••	•••	•••	•••	do
68	do do do 45-cwt. steam hammer		•••	•••	•••	•••	•••	do
69	3-ton crane do	ana rur do		•••	•••	•••	••••	do
70	Vertical boiler and don			r furn	100	. ***	•••	do In fair order,
71	15-cwt. steam hammer	•••				•••		In good order.
72	20-cwt. crane for do	•••	•••		•••	• •••		do
73	5-cwt. steam hammer		•••	•••	•••	•••		do
75	do do	•••	•••	•••	•••			do
74	3½-cwt. do	•••	• • •	•••	•••	•••	•••	do
74 161	Blast-fan	•••	•••	•••	•••	•••	•••	do
75	20-cwt. crane for fires	•••	•••	•••	***	•••	•••	do - do
, ,	- Constitution of the second	•••	•••	•••	•••	•••	••••	do
				Car	rioge S	hop.		
97 99	14-h.p. portable engine Band saw	and bo	iler	•••	•••	•••		In fair order. In good order.
60	12-in. sweep cutting-say	w	•••	•••	•••	•••		do
.00	General joiner	•••	•••	•••	•••	•••		do
01	Vertical drilling machin	ne	•••	•••	•••	•••		do
02	Screwing machine	•••	•••	•••	•••	•••	•••	do .
.03 .54	Grindstone and trough		•••	•••	•••	•••	•••	do
.04	Moulding tool-grinder 5½-in. scroll saw	•••	•••	•••	•••	•••	•••	do
55	Wood planing machine	•••	•••	•••	•••	•••	•••	do
	3½-in. morticing and box	 ring ma	chine	•••	•••	•••	•••	do do
	Shafting, pulleys, &c., f	or the	forego	 ing	•••	•••	•••	do
1				. 6	•••	•••]	40
	1188M	 ,						

No. 2 (continued).

o.			Descri	iptio:	n.				Remarks.
				Ge	eneral at L	Sydney-	contin	ued.	
6 3	Locomotive engine and 2-h.p. engine and	ne weig I vertic	ghing-n cal boile	ach er	ine		•••		In fair order. Transferred from Rydal; formerly numbered under pumping
8	Steam travelling	erana	•••				,		machinery as No. 27. In fair order.
7	Travelling crane				•••				do
'8	\mathbf{D}_{O}				•••		• •••		do
9	Oil tester	•••	•••	•••	•••	•••	•••		In good order.
30 31	Small turntable Do		• • •	•••	•••	•••	•••		do do ,
2	Do	•••	•••		•••	•••			do
33	\mathbf{p}_{o}				•••	•••	••		ģó
4	Do	•••	• • •	•••	•••	•••	•••	•••	do do
5 6	$egin{array}{cccc} { m Traverser} & \dots & & \\ { m Do} & \dots & & \end{array}$	•••	•••		•••	***	•••		do
9	Do					•••	•••	•••	do
7	Crab-winch for l		engines	•••	•••	•••	•••	•••	do
8 9	$egin{array}{c} \egin{array}{c} \egin{array}{c} \egin{array}{c} \egin{array}{c} \egin{array}{c} \egin{array}$	do do		٠.,	•••	••••	•••	••••	do do
)	$\mathbf{D_0}$	do		•••	•••	•••	•••		do
Ĺ	5-ton jib crane	•••			•••	• • •	•••		do
7	Hand fire-engine	·	•••	•••	•••	•••	•••		do
$\frac{5}{2}$	10-ton jib crane Tube-tester			•••		•••	•••	•••	, do do
0	Valve facing mag	chine (for out	side	cylinders	3)	•••		do
8	Do	lo (for insi		do)			do
9	Shaft straighten			•••	••• ,	· <i>:</i> ·	•••		do
$_2^0$	Saw-sharpening Hydraulic press			•••	•••	• ••	•••	•••	Not yet erected. In good order.
9	Do Do						•••		do (lent to Tram Dept.)
L	Hydraulic testin	g mach	$_{ m ine}$		•••		•••		do
7	Five pairs portal				•••	•••	• • •	•••	do
)	Travelling crane Do	•••	•••		•••	•••	•••	•••	do do
	Steam port-facin	ıg macl	$_{ m hine}$		•••		•••		do ,
					Brake Blo	ock Sho	p. Sydn	eu.	
2	6-h.p. portable e	ngine			•••	*	•••		In good order.
9 1	Cutting-off saw Do		•••	•••	•••	•••	•••		Not yet erected. In good order.
Ö	Band saw		•••		•••	•••	•••		do
6		l bench	ı			•••			do
	*					Penrit	h.		
7	10-in. screw cut			•••		•••	•••	•••	In good order.
8.0	5-in. do Drilling-machine	, d		٠,٠٠		•••	•••	•••	do do
1	Screwing-machin					•••	•••		do
2	Portable punchi	ng and		ng-n	$\operatorname{nachine}$				In fair order.
1	12-in. screw cut			• • •		•••	•••		In good order.
$\frac{2}{3}$	Radial drilling-n	; пяситте	· · · ·	•••			•••	•••	do ,
0	12-h.p. Tangye l	norizon	tal eng	ine			•••		do
9	10-h.p. boiler for					•••	•	• •••	do
5 4	Blast fan Goliath					. •••	•••	•••	do do
6	4-h.p. vertical er					•••	•••		Transferred to Richmond, and re
		Ü				•			numbered amongst the pumping machinery as No. 88.
	Shafting, pulley	s, for t	the fore	goir	ng	•••	<i>:</i>	<i></i>	In good order.
					7	Bathur	st.		
38	4-h.p. portable e	engine	and boi	ler	•••	•••	•••	•••	In good order.
16 17	Large vertical d	rilling. c				· •••	•••	# • •	do do
18	10-in. screw cut			•••	• •••		•••		do
37	6-in. do	· c	lo ·				•••	•••	do
39	Screwing-machin			•••		•••	<i></i>	•••	do -
10	Small shaping-n	1acmne	· · · ·					•••	do
19 92	Hand fire-engin	A							do .

No. 2 (continued).

No.	Description .	Remarks.				
		Bar	thurst—c	ont d .		
186	12-in. screw cutting lathe					In good order.
187	Planing-machine		•••			do
195	Punching and shearing-machine					do
188	Radial drilling-machine		•••	•••		do
	Shafting, pulleys, &c., for the fores	going	•••	•••	•••	do
			Goulburn	ı.		
113	2-h.p. vertical engine and boiler			.,.		In good order.
114	10-in. screw cutting lathe		•••	•••		do
136	6-in. do do					do
115	Small drilling-machine		•••	•••		do
	Shafting, pulleys, &c., for the fore	going	•••	•••	••••	do
			Harden.			
170	4-h.p. vertical engine and boiler		•••	.: .	.::	In good order.
11	11-in. screw cutting lathe		···			In fair order.
	Shafting, pulleys, &c., for the fore	going	•••	•••		In good order.
			Junee.			·
192	6-h.p. portable engine and boiler				1	Transferred from Penrith; formerly
		•				numbered 20 amongst the pump-
10						ing machinery. In fair order.
18 109	6-in. screw cutting lathe	•••	•••		•••	In good order.
109	10-in. shaping-machine	•••	•••	•••	•••	In good order; transferred from Penrith.
	Shafting, pulleys, &c., for the fore	oning				In good order.
	8, I === 7 s, sees, === 2020,	5*****	•••	•••	••••	·
	Mach	ine Sho	p, Honey	suckle	Poin	t.
1	25-h.p. horizontal engine and boiler			• •	1	
$\overline{2}$	Duplicate boiler for above		•••	•••	•••	In good order.
3	10-h.p. diagonal engine with boiler		•••	•••		do
4	Self-acting slide surfacing brake la		•••	• • •		do <u>.</u>
5	5-ft. double-headed wheel lathe		•••	• • •	•••	do
69 60	4-ft. do do	•••	•••	•••		do
68	Duplex wheel lathe Do do	•••	•••	•••	•••	do do
6	17-in. screw cutting lathe (gap)	•••	•••		•••	In fair order.
7	12-in. do do	•••	•••			In good order.
70	12-in. do do					do
8 9	i III-in latha—not colt coting					
	10-in. lathe—not self-acting		•••	• • •		do
	9-in. screw cutting lathe (gap)		•••	•••		do.
$\begin{array}{c} 10 \\ 12 \end{array}$	9-in. screw cutting lathe (gap) 9-in. do do	•••		•••		do. do
10 12 56	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe	•••		•••		do.
10 12 56 13	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine	•••	•••		 	do . do do . do do
10 12 56 13 14	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do		 	.:.		do . do do do do do
10 12 56 13 14 15	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke			.:. ;••		do . do do do do do
10 12 56 13 14	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18	 8-in. sta	 	.:.		do . do do do do do do
10 12 56 13 14 15 16 57	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke	 3-in. str		.:. ;••		do . do do do do do
10 12 56 13 14 15 16 57 17 58	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke Bolt-screwing and nut-tapping machine, do do do	8-in. str	 roke			do . do do do do do do do do do do do do do
10 12 56 13 14 15 16 57 17 58 18	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke Bolt-screwing and nut-tapping machine, 18 Cylinder boring-mill, fixed on bed	8-in. str	 roke			do . do do do do do do do do do do do do do
10 12 56 13 14 15 16 57 17 58 18	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke Bolt-screwing and nut-tapping machine, 18 Cylinder boring-mill, fixed on bed Radial drilling-machine	8-in. str	 4 lathe			do . do do do do do do do do do do do do do
10 12 56 13 14 15 16 57 17 58 18	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke Bolt-screwing and nut-tapping machine, 18 Cylinder boring-mill, fixed on bed Radial drilling-machine Vertical do	S-in. str.	 4 lathe 			do . do do do do do do do do do do do do do
10 12 56 13 14 15 16 57 17 58 18 19 20 21 22	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke Bolt-screwing and nut-tapping machine, 18 Cylinder boring-mill, fixed on bed Radial drilling-machine Vertical do Vertical do Do do	8-in. str	 4 lathe			do . do do do do do do do do do do do do do
10 12 56 13 14 15 16 57 17 58 18 19 20 21 22 23	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke Bolt-screwing and nut-tapping machine, 18 Cylinder boring-mill, fixed on bed control of the con	S-in. str	 4 lathe 			do . do do do do do do do do do do do do do
10 12 56 13 14 15 16 57 17 58 18 19 20 21 22 23 25	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke Bolt-screwing and nut-tapping machine, 18 Cylinder boring-mill, fixed on bed Radial drilling-machine Vertical do Vertical do Vertical do Punching and shearing-machine Do do Punching and shearing-machine	S-in. str	 4 lathe 			do. do do do do do do do do do do do do do
10 12 56 13 14 15 16 57 17 58 18 19 20 21 22 23 25 27	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke Bolt-screwing and nut-tapping machine, 18 Cylinder boring-mill, fixed on bed Radial drilling-machine Vertical do Vertical do Vertical do Punching and shearing-machine Do do Punching and shearing-machine Fan blast	S-in. str	roke 4 lathe			do. do do do do do do do do do do do do do
10 12 56 13 14 15 16 57 17 58 18 19 20 21 22 23 25	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke Bolt-screwing and nut-tapping machine, 18 Cylinder boring-mill, fixed on bed Radial drilling-machine Vertical do Do do Punching and shearing-machine Do do Plate-bending machine Fan blast Circular saw bench	S-in. str	roke 4 lathe			do. do do do do do do do do do do do do do
10 12 56 13 14 15 16 57 17 58 18 19 20 21 22 23 25 27 28 30 31	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke Bolt-screwing and nut-tapping mach do Cylinder boring-mill, fixed on bed Vertical do Vertical do Do do Punching and shearing-machine Do do Plate-bending machine Fan blast Circular saw bench Grindstone with wooden frame Do do do	S-in. str	roke 4 lathe			do. do do do do do do do do do do do do do
10 12 56 13 14 15 16 57 17 58 18 19 20 21 22 23 25 27 28 30 31 62	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke Bolt-screwing and nut-tapping mach do Cylinder boring-mill, fixed on bed Radial drilling-machine Vertical do Do do Punching and shearing-machine Do do Plate-bending machine Fan blast Circular saw bench Grindstone with wooden frame Do do do Do do do	S-in. sta	roke 4 lathe			do. do do do do do do do do do do do do do
10 12 56 13 14 15 16 57 17 58 18 19 20 21 22 23 25 27 28 30 31 62 32	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke Bolt-screwing and nut-tapping mach do Cylinder boring-mill, fixed on bed Radial drilling-machine Vertical do Do do Punching and shearing-machine Do do Plate-bending machine Fan blast Circular saw bench Grindstone with wooden frame Do do do Emery twist drill-grinder	S-in. sta	roke 4 lathe			do. do do do do do do do do do do do do do
10 12 56 13 14 15 16 57 17 58 18 19 20 21 22 23 25 27 28 30 31 62 43	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke Bolt-screwing and nut-tapping mach do Do do do Vertical do Vertical do Do do Punching and shearing-machine Do do Plate-bending machine Fan blast Circular saw bench Grindstone with wooden frame Do do do Grindstone with wooden frame Do do do Emery twist drill-grinder Do grinder	S-in. sta	roke			do. do do do do do do do do do do do do do
10 12 56 13 14 15 16 57 17 58 18 19 20 21 22 23 25 27 28 30 31 62 43 61	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke Bolt-screwing and nut-tapping mach do Cylinder boring-mill, fixed on bed Radial drilling-machine Vertical do Do do Punching and shearing-machine Do do Circular saw bench Grindstone with wooden frame Circular saw bench Grindstone with wooden frame Do do do Do do do Do grinder Do grinder Do tool-grinder	8-in. stine chine	**************************************			do. do do do do do do do do do do do do do
10 12 56 13 14 15 16 57 17 58 18 19 20 21 22 32 52 7 28 30 31 42 71	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke Bolt-screwing and nut-tapping mach do Do do do Vertical do Vertical do Do do Punching and shearing-machine Do do Plate-bending machine Fan blast Circular saw bench Grindstone with wooden frame Do do do Grindstone with wooden frame Do do do Emery twist drill-grinder Do grinder	8-in. stine chine	roke			do. do do do do do do do do do do do do do
10 12 56 13 14 15 16 57 17 58 18 19 20 21 22 23 25 27 28 30 31 42 43 61 42	9-in. screw cutting lathe (gap) 9-in. do do 8-in. lathe, on wooden bed 6-in. screw cutting lathe 6-ft. planing-machine 6-ft. do Slotting-machine, 18-in. stroke Double-headed shaping-machine, 18 Shaping-machine, 8-in. stroke Bolt-screwing and nut-tapping machine Do do do Cylinder boring-mill, fixed on bed Radial drilling-machine Vertical do Do do Punching and shearing-machine Do do Circular saw bench Grindstone with wooden frame Circular saw bench Grindstone with wooden frame Do do do Emery twist drill-grinder Do grinder Do tool-grinder Overhead traverser for wheel lathe	S-in. sta	**************************************			do. do do do do do do do do do do do do do

No. 2 (continued.)

No.	Descr	iption					Remarks.
	Mac	hine	Shop, H	Coneysuc	kle Po	int—	contd.
59	Tire drilling and tapping-mach	ine			•••	•••	In good order.
63	12-h.p. semi-portable engine ar	ıd bo	iler (Ro	bey's)	•••		do
67	Small turntable for wheels	• • •		• • •	•••	•••	do
	Shafting and pulleys	•••	•••	•••	•••]	do
	-		Black	csmith's	Shon		
44	5-cwt. steam hammer		Diaon	omotiv 6	•	,	In mand and an
64	Fan blast	•••	•••	•••	•••		In good order. do
75	5-ton jib crane		•••	•••			do
76	Traverser for wheels	•••					do
·					_		
			Car	riage Si	hop.		
45	General joiner	•••	•••				In good order.
46	Band saw	•••	•••	•••	•••	•••	do
47 48	Wood shaping-machine		•••	•••	• • •		do
49	10-h.p. vertical engine and boil Circular saw bench with rising	and	falling	onindla	•••		do
50	Mortising and boring-machine		raming :	opinuie	•••	• • •	do do
51	Emery grinding-machine		•••	•••			do
52	Plane-iron grinding-machine		•••				do
53	$10\frac{1}{3}$ -in. lathe, wooden bed	•••		•••	•••		do
54	Grindstone with wooden frame			•••	•••		do
l	Shafting, pulleys, &c	• • •	•••	•••	•••	• • •	do
			(General			
24	Hand punching-press (small)						In fair order.
26	Do bear	•••	•••	••	•••		do
29	Slide-valve facing-machine	•••	•••	•••	•••		In good order.
74	Do do	:••	•••	•••	•••		do
33	Weighing-machine for loco. en	gines	• • • • • • • • • • • • • • • • • • • •	•••	•••	•••	In fair order.
34	Hydraulic press	•••	•••	•••	•••	•••	In good order.
35 36	Portable crane Do	•••	•••	•••	•••	•••	In fair order.
37	Crab winch for lifting carriage	 s and	 โพลฮฮกา	ns	•••	:::	In good order.
38	Do fixed on gauntree f	or lif	ting cus	zines. b			do
39	Do with mallcable iron			•••	•••		In fair order.
40	Do with cast-iron fram	e	•••	•••	•••		do .
41	Hydraulic test-pump	•••	•••	•••	•••		In good order.
73	Traverser for wheels	•••	•••	•••	•••	1	do
			S	ingleton	ı .		
65]	6-in. screw cutting-lathe	•••	•••	•••	•••		In good order.
	,		71.5	urru run	di	•	. <u>-</u>
66	6-in. screw cutting-lathe		14.		w	ı	In good order.
00	o in seron causing mono	•••	•••		- ···	••••	in good order.
			G	lun ne da	h.		
11	6-in. screw cutting-lathe	•••	•••	٠	•••		In good order.
	LIST OF MACHINERY at H	Onev	enekla I	r Point ac	lded to	etook	during the year 1883:—
77	1 circular saw, wooden frame		suckie 1	t Ollo at	iucu io		
78	1 hydraulic wheel-press	•••	•••	•••	•••	i	In good order.
79	1 steam gauge tester	•••	•••	•••	•••	:::	do
80	1 horse-hair teasing-machine		•••	•••	•••		do
	T M + S 1		1 11	a	,,		N 1 1 1 1 1000
	LIST OF MACHINERY at Sydne	e y an	d other	Station	s adde	d to S	
173	8-in. screw-cutting machine	•••	•••	•••	•••		Turning shop, Sydney.
$\begin{array}{c} 178 \\ 179 \end{array}$	Travelling crane	•••	•••	•••	•••	•••	General at Sydney.
180	13-in. shaping machine	•••	•••	. •••	•••	•••	do do Turning shop, Sydney.
181	12-in. screw-cutting lathe	•••	•••	•••	•••		Machine shop, Penrith.
182	Radial drilling machine	•••			•••		do do
183 .	Planing machine		•••	•••	•••		do do
184	Shaping machine	• • •	•••	•••			Not yet erected.
185	Blast fan	•••	•••	•••	•••	•••	Machinery shop, Penrith.
186	12-in. screw-cutting lathe	•••	•••	•••	•••	• • •	do Bathurst.
187. 188	Planing machine Radial drilling machine	•••	•••	•••	•••	•••	do do
189	12-h.p. Tangye horizontal engir	 1e	•••	• • •	•••	••	do do do do Penrith.
190	10-h.p. boiler for same		•••	•••		•••	do fenrin. do do
	to a reserve and a serve	•••	•••	•••	•••	•••	40
<u>`</u>							

No. 2-continued.

List of Machinery at Sydney, &c.—continued.

No.	Description.	Remarks.			
191 192	Steam port-facing machine 6-h.p. portable engine and boiler	 	•••	•••	Ma Jaine and Mind and T
193	2-h.p. vertical engine and boiler	 •••			machinery. To drive the machinery in iron foundry, Sydney; was formerly at Rydal, and numbered 27 amongst
194 195	Goliah for lifting engines Punching and shearing machine	 			the pumping machinery. Machine shop, Penrith. do Bathurst.

Engines, Pumps, &c., for supplying Water.

1			<u> </u>	Descr	iption.				Remarks.
	Sydney		6-h.p. engin	e, and two	pairs	of 7-in.	pumps	with	In good order.
6	Do	••	4-h.p. engin	e and two	boile	rs and 7	-in. d	ouble	
23	Do		acting p 4-h.p. Garre	tt & Marsh	all's	pumping	engin	ie	ferred from Picton Lakes. Not at present in use; trans-
2	Do		3½-in. hand	numn					ferred from Lawson.
8	The .	••	4-h n Angin	pump and bailer		4 in de	 blo a		Used for testing air-brake cylinder.
	, 50	••	4-h.p engin pump.	e and boner	, апо	. 4-111. (1 0	u Die-a	cung	Formerly at Barber's Creek; condemned and written off books; replaced with No. 75; charged to revenue.
10	Do	••	Tangye stea	m-pump, 6"	x 4"	•••		•••	Attached to locomotive No. 69 for temporary water
20	Do	••	Pair 3½-in. p	umps	•••	•••	•••		supplies. Formerly at Penrith; in fair order.
37	. Do	•••	2-h.p. engine	and boiler	and	pair 3-in	. pum	ps	Transferred from Richmond; in fair order.
86	Do		2-h.p. engine pumps.	and vertic	al bo	iler and	pair 8	3 <u>1</u> -in.	Notat present in use; requires repairing; transferred from Mulgrave.
92	Do	• • •	Pillar crane	•••		•••	•		In good order.
93	Do		do					[do
94	Do		do	•••					do
95	Do		do						do
96	Do		do	•••		•••	•••		· do ·
97	До		14,000-gallor	ı tank		•••	•••	•••	-
98	Do	•••	do d		•••	•••	•••	•••	do
71	Eveleigh	•••	10-h p. verti		 md b	oilon	• • • •	•••	do
$7\hat{2}$	D	••	Poin Tongro	Cin congrue a	ына ю	oner	•••	•••	do
73	T) -	•••	Pair Tangye	o-m. geared	ı puu	1ps	•••		do
99	7).		Tangye steam	n-pump, 8	X 4.	•••	•••		do
76	Duck River		20,000-gallor	ı tank		•••	•••	•••	do
100	Granville	•••	Tangye stear	ո-րսար, 8		•••	•••		do
	m -		20,000-gallor	i tank	•••	•••	•••		do
101	Do	•••	Pillar crane		•••		• • •		do
3	Liverpool	•••	4-h.p. engine	and boiler	and p	pair 5½-ii	ı. pum	ps	In fair order.
4	D₀		Windmill pu	mp	•••	•••	•••		Out of order; not worth repairing.
15	Do	••	Tangye stear	n-pump, 8″	x 5"	•••	•••		Transferred from Yass tem-
700	TD							ŀ	porarily; in fair order.
102	Do	•••	36,000-gallor	ı tank, with	ı jib-c	crane att	tached		In good order.
103	Do		Pillar crane	•••	•••	•••	•••		, do
104	1)o		do	•••			•••		do
5	Menangle]	6-h.p. engine	and boiler	and 1	pair 7-in	. punn	os	In bad order; about to be repaired.
105	Do		12,000-gallor	tank, with	i jib-d	rane att	ached		In good order.
67	Picton Lakes	•••	8-h.p. horizo	ntal engine	and	boiler.	with	6-in.	do
			geared pi	ımp.				ا.ت.	40
42	Do		Blake's pater	at steam-nu	mp. 1	10" x 6"			do
106	Do		34,000-gallor	tank	₁ , .		•••	• • •	do
107	Do			do	•••	••• ,	•••		_
108	Do		Pillar crane		•••	•••	•••	***	do
50	Mittagong	•••		e"	- 9"	•••	•••	••••	do
109	Do	•••	Tangye steam	и-ришр, 6"	x o	•••	;	•••	do
100	ناط	•••	9,000-gallon	tank, with	Jib-cr	ane atta	ched	•••	do

No. 2—continued.

Engines, Pumps, &c., for supplying Water—continued.

<u>.</u>			Description	Remarks.
No.	Place.		Description.	Tremarks.
7	Wingecarribee			In good order.
110	$ m ar{Do}$		7,000-gallon tank, with jib-crane attached	do
111	_ Do	•••	10,000-gallon tank, do do	do
75	Barber's Creek	•••	Tangye steam-pump, 8" x 4"	do
112	Do	•••		do . do
113	· Do	•••	14,000-gallon tank, do do	do
9	Goulburn Do	•••	17,000-gallon tank, supplied by gravitation Pillar crane	do
115 11	Do Mulwaree Ponds	•••	Tangye steam-pump, 6" x 4"	do
78	Do	•••	Blake's steam-pump, 10" x 6"	do
12	Do		8-h.p. vertical boiler for same	do
116	Do		20,000-gallon tank, with jib-crane attached	do
13	Fish River	•••	4-h.p. Garrett and Marshall's pumping engine and vertical boiler.	In fair order.
117	Do		13,000-gallon tank with jib crane attached	In good order.
14	Yass		Tangye steam pump $8'' \times 4'' \dots \dots \dots$	do
86	Do		8-h.p. engine and one 6-in. geared pump	, do
87	Do	•••	10-h.p. boiler for above	do
118	Do	٠	20,000-gallon tank with jib crane attached	' do
119	Do	•••	$egin{array}{cccccccccccccccccccccccccccccccccccc$	do
120 16	Do Rocky Ponds	•••	Pillar crane	do
122	Do	•••	20,000-gallon tank with jib crane attached	do -
17	Illalong Creek	•••	Pair 4-in. hand pumps	do ,
121	Do		20,000-gallon tank with jib crane attached	do
41	Harden		Tangye steam pump 8" x 4"	do
74	$\stackrel{\sim}{\mathbb{D}}_{0}$	•••	do do ,8" x 4"	do
$\begin{array}{c c} 124 \\ 125 \end{array}$	Do Do	••	20,000-gallon tank do do	do do
126	Do Do	•••	Dillon arono	do '
$\frac{120}{127}$	Do	•••	do	do
128	Do	•••	do	do
40	Cootamundra		Tangye steam pump 6" x 3"	do
18	Do·	•••	4-h.p. vertical engine and boiler and pair 5-in.	do
130	Do		14,000-gallon tank with jib crane attached	do
$18\frac{1}{2}$	Bethungra		Tangye steam pump 8" x 5"	do
77	<u>D</u> o	•••	do do 6" x 5"	do
131	Do	•••	20,000-gallon tank with jib crane attached	do do
$\frac{132}{18\frac{3}{4}}$	Do Junee Junction	•••	Pillar crane $2\frac{1}{2}$ -in. double-acting hand pump	In fair order.
177	Nevertire	•••	20,000-gallon tank with jib crane attached	In good order.
82	Nyngan	•••	Tangye steam pump 8" x 5"	Formerly at Narramine, in
	9,			good order.
178	Do	• • •	20,000-gallon tank with jib crane attached	
81	Piper's Flat	• • •	Tangye steam pump 6" x 3" Pair 4-in. deep well pumps	do do
48 · 49	Mulgrave Do	••••	Pair 4-in. deep well pumps 3-h.p. vertical engine and boiler	l ` aa ' .
179	Do	• • • •	1 10 000 - 11 - 4 - 1 - with the same attacked	do
44:	Richmond		Pair Tangye 4-in. deep well hand pumps	Formerly at Store Creek, in
89	Do		4-h.p. vertical engine and boiler	good order. In good order; formerly No.
_				106 in the list of shop
			•	machinery; transferred from Penrith.
180	Do		16,000-gallon tank with jib crane attached	In good order.
28	Tarana	•••	4-h.p. engine and boiler, and 4-in. double-	
4 5 ·	. Do		acting pump. No. 5 pulsometer pump	Transferred from Dubbo in
58	. Do	·	Tangye steam-pump, 8" x 4"	good order. Transferred from Richmond
30		-		in good order.
1 67 29	Do · Bathurst	·	12,000-gallon tank with jib crane attached 3-h.p. vertical engine and boiler, and 5-in. deep-	
			well pump geared.	in use.
51	. Do	·	6-h.p. vertical engine and boiler	In good order.
65	Do	••••	l	do do
$\begin{array}{c} 168 \\ 32 \end{array}$	Do ' Reedy Creek	•••		do
34	Blayney	•••	Tangye steam-pump, $S'' \times 4''$	do
169	Do	• • •		do .
			<u> </u>	1

No. 2—continued.

Engines, Pumps &c., for supplying Water—continued.

No.	Place.		Description.	Remarks.
35	Orange		4-h.p. portable engine and boiler attached and 6-in. single lift-pump.	In fair order.
170	· Do		20,000-gallon tank with jib crane attached	do
64	Kerr's Creek		No. 5 pulsometer pump	do
171		• • •	20,000-gallon tank with jib crane attached	do
172 46	D _o	•••	do do do	do
47	W-11:	• • •	Tangye steam-pump, 8" x 5" 7-h.p. Tangye horizontal engine and boiler and	do do
2.	Wolling volt		pair 4-in. geared Tangye deep-well pumps.	a.v
30	Do		Tangye steam-pump, 8" x 5"	do
173			20,000-gallon tank with jib crane attached	do
174	Do		Pillar crane	do
59	Dubbo	•••	Tangye steam-pump, 8" x 4"	do
63 175	TD -	•••	No. 5 pulsometer pump 20,000-gallon tank with jib crane attached	do do
88	Mamamina		6-h.p. engine and boiler, and pair 5-in. deep	
	, .	```	well-pumps.	40
176	Do		20,000-gallon tank with jib crane attached	do
85			Tangye steam-pump, $7'' \times 5''$	do
38	NT		do do 6" x 3"	do
89 90	T)	• • •	3-h.p. horizontal engine with vertical boiler 3-in. double-acting deep-well pump	do do
148	Donnith		Pillar crane	In good order.
149	T) a		· do	do
150	τ\		do	do
66	Glenbrook	•••	Tangye steam-pump, 6" x 3"	In good order. Temporarily required to supplement
21	Do		11,000-gallon tank, supplied by gravitation	gravitation supply. In good order.
152	Do		Pillar crane	. do
22	Lawson		4-h.p. Garrett & Marshall's pumping-engine	In fair order.
181		• • • •	12-h.p. vertical boiler	In good order.
68 153	Do	•••	8-h.p. Tangye horizontal pumping-engine, and 10-h.p. boiler with 6-in. geared pumps.	_
155 154	Do .	•••	30,000-gallon excavated tank do do	do do
155	D.		Pillar crane	do
156	D _a	•••	do	do
157	Do	•••	do	do .
· 43 158	Wentworth Falls Do	•••	Tangye steam-pump, 6" x 3" 20,000 gallon tank and two jib cranes attached	do do
24	Dlaskasth		4-h.p. engine and boiler, and 4-in. double-acting	Notworth repairing; about to
	200000000000000000000000000000000000000	•••	pump.	be condemned and replaced.
$20\frac{1}{2}$	Do	•••	Tangye steam-pump, 8" x 5"	Transferred from Penrith.
1.50			11 000 - 11 - 1 - 11 - 11 - 11 - 11	In good order.
$\frac{159}{25}$	TATA Trinkania	•••	11,000 gallon tank with jib crane attached Pair 3-in. hand-pumps	In good order. • do
181	D _o		Pair 3-in. hand-pumps 3,000-gallon tank and jib crane attached	do
26	T:these		150,000-gallon tank, supplied by gravitation	do
161		• • • •	Pillar crane	do
162	D £.11.	• • •	do	do
33 163	D _a		Tangye steam-pump, 8" x 5" 20,000 gallon tank with jib crane attached	do do
83	Manusana	• • ·	10-h.p. vertical boiler and Tangye-pump, 9" x 5"	
164	Do		150,000-gallon reservoir	do
165		• • •	20,000 gallon tank with two jib cranes attached	do
27	Rydal	•••	Pair 3-in. pumps	In fair order; not at present
166	Do		8,000-gallon tank with jib crane attached	in use. In good order.
31	1 1114		Tangye steam-pump, $6^{\prime\prime}$ x $3^{\prime\prime}$	In fair order.
39	T) a		do do '6" x 3"	Transferred from Sydney in
. 100	T)		90,000	fair order.
· 133 57	013 T	•••	20,000-gallon tank with 2 jib cranes attached Tangye steam-pump, 4" x 3"	
60	Sauth Warms	••	6-h.p. horizontal engine and vertical boiler	do do
61	I Do		Pair 4-in. deep well-pumps	do
134	Do		20,000-gallon tank	do
129	Do		do do	do
135	. π _ο ·	• • •	Pillar crane	do do
136 1 137	T) a	•••	do	do do
-01	100	•••	uo	

No. 2-continued.

Engines, Pumps, &c., for supplying Water-continued.

		HNES, PUMPS, &C., FOR SUPPLYING WATER—	·
No.	Place.	Description.	Remarks.
62	Dudal, Cooma .	Tangye pump, 7" x 5"	In good order
138	Do	20,000 gallon tonk with jih arang attached	In good order do
53	Culcairn	No. 5 nulsometer numn	ا ا
139	Do	20,000 gollon tonly with the same authority	do do
54	Albury	No. 5 pulcometer nump	do
140	\mathbf{Do}	30 000-gallon tank	do
141	_ Do	Pillar crane	do
55	Boggy Creek .	No. 5 pulsometer pump	do
52	Do	Tangye steam-pump, $8'' \times 4'' \dots$. do
142	Do	20,000-gallon tank with jib crane attached	. do
$\begin{array}{c c} 56 & \\ 19 & \end{array}$	Narrandera . Do	Tangye steam-pump, 8" x 6" do do 8" x 4"	∴ do ·
143	T) o	20 000 gollon tonle with ith some attack it	do
80	Bringagee	4-h.p. vertical engine and boiler, and pair 4-i	do n. do
	2.125.600	deep-well pumps.	u. uo
144	Do	20,000-gallon tank with jib crane attached	do
7 9	Hay	4-h.p. vertical engine and boiler, and pair 4-i	
	•	deep-well pumps.	
145	Do	20,000-gallon tank with jib crane attached	do
84	Tarago		do
123 69	$egin{array}{cccc} oldsymbol{\mathrm{Do}} & \dots & \dots & \dots \\ oldsymbol{\mathrm{Penrith}} & \dots & \dots & \dots \end{array}$		do
70		8-h.p. vertical engine and boiler	do
146	Do Do	00.000 11 1 11 11 11	do do
147	$\widetilde{\mathbf{Do}}$	do	do do
15		7½" x 6½" Garrett & Marshall's engine and boil	er do
1 & 2	Bullock Island Jun	2 Tangye Bros. steam-pumps and boilers, 7" x	5" do
3	Morpeth	1 pair $3\frac{1}{2}$ " hand-pumps	In fair order.
4	West Maitland .	Garrett & Marshall's $7\frac{1}{2}$ " x $6\frac{1}{2}$ " engine, boile	r, do
6	Singleton	and pumps.	D*
12	Singleton Glennie's Creek .		Requires repairs. In fair order.
7		$7\frac{3}{16}$ x $4\frac{3}{4}$ double acting pump fixed on boiler	do
8	Aberdeen	7" v 4" onging boiler and names	do -
9	Wingen	$3\frac{1}{3}$ hand-pump	do
10	Murrurundi .	7" x 4" double acting pump fixed on boiler	Requires repairs.
11	Unificott's Creek .	7 x 4 ½" Tangye Bros.' engine, boiler, and pun	p In fair order.
13 14	Quirindi St. Helena .	6" x 5" Tangye Bros.' steam-pump	In good order.
16	(T)	011 111 12	Under repair at Murrurundi.
$\overline{22}$	Swamp Oak .	7" x 5" do do	In good order.
23	M'Donald River .	7" x 5" do do	do . do
17	Breeza	$8'' \times 5''$ do do	. do do
18	Gunnedah	6" x 5" do do	do
19	$\mathbf{D_0}$	6" x 4" Shanks & Sons' engine, boiler, and pum	os do
20	Boggabri	$7'' \times 4''$ do do	do
21	Narrabri	$S'' \times 4''$ do do do	l _s
		•	
_	\mathbf{P}	IPING MACHINERY added to Stock during the Y	ear 1883.
84	Tarago	Tangye steam-pump, 7" x 5"	New extension of line.
123	Do	20,000-gallon tank with jib crane attached	New extension of lines.
85 86	Trangie Yass	do do 7" x 5"	do
87	Do	10 h n hailan fan ahaya	To replace pump No. 15, sent to Liverpool.
ļ	•	· -	-
88	Narramine	6-h.p. engine and boiler, and pair 6-in. deep-we	
90	Nevertire	pumps.	to Nyngan.
91	Do	3 in double acting door well number	New extension of line.
89	Richmond	4 h n ventical engine and hailen	To replace pump No. 37,
		1	transferred to Sydney. This
		•	engine was formerly at
			Penrith, and numbered 106
		•	amongst the machinery.
1			Ţ

No. 2-continued.

GREAT SOUTHERN, WESTERN, AND RICHMOND RAILWAYS.

LIST AND CONDITION OF LOCOMOTIVE ENGINES AND TENDERS ON 31ST DECEMBER, 1883.

ĺ	Stock		Maker's	01			Cylinders.		Number of wheels	Coupled or single	Dia	meter of whee	ls.	Commenced	Condition.
	No.	Maker's Name.	No.	Class.	Description.	Position.	Diameter.	Length of stroke.	on engine.	wheels.	Leading.	Driving.	Trailing.	to run.	Condition.
}							Inches.	Inches.		(1)	ft. in.	ft. in.	ft. in.		
. [ı	Beyer, Pencock, & Co	1892	Goods	Tender engine	Inside do	18 18	24	6 6	All coupledd	4 0	4 0	4 0	April, 1880	In good order. In fair order.
'	2	Do	1893 1894	do	do do	do	18	24 24	6	αο do	4 0	4 0	4 0	do	In good order.
ı	3	Do Do	1895	do	do	do	18	24	6	do	4 0	4 0	4 0	do	In fair order.
- [4	Hawthorne & Sons	944	Passenger.	do	do	14	22	6	4 wheels coupled	4 6	4 6	3 6	Nov., 1856	do .
	6	Fairburn & Sons		do	do	Outside	15	22	6	Single	3 6	5 6	3 6	Mar., 1856	Obsolete; about to be replaced by a new engine No. 285.
	7	Do		do	do	do	15	22	6	do	з 6	5 6	, з б	April, 1856	Obsolete; about to be replaced by a new engine No. 286.
	8	Railway Foundry	634	do	Tank engine	do	15	22	6	do	3 6	5 6	з б	Jan., 1859	Obsolete; about to be replaced by a new engine No. 287.
	9	Do	635	do	Tender engine	do	15	22	6	do	з б	5 9	з б	Dec., 1858	Obsolete; about to be replaced by a new engine No. 288.
1	10	Railway Works, Sydney	1	do	do	Inside	17	24	6	4 coupled	3 6	5 6	5 6	June, 1870	In good order.
	11	Manning, Wardle, & Co	8	do	do	do	15	22	6	Single	3 6	5 9	3 6	April, 1861	Obsolcte; about to be replaced by a new engine No. 289.
	12	Do	. 11	do	Tank engine	Outside	15	22	6	do	3. 6	5 6	з 6	May, 1861	Obsolete; about to be replaced by a new engine No. 290.
1	13	Do	43	do	Tender engine	do	16	22	6	4 coupled	3 6	5 0	5 0	Jan., 1863	In fair order.
H	14	Beyer, Peacock, & Co	541	do	1 7 -	Inside	16	20	6	Single	3 6	6 o	з 6	Nov., 1865	In good order.
- 1	15 16	Do	543	do	do	do	16	20	6	do	3 6	6 o	36	Jan., 1866	In fair order.
1		Do	542	do	do	do	· 16	20	6	do	36	6 o .	36	Dec., 1865	Under repairs.
1	17	R. Stephenson & Sons	1541	Goods	do	do	18	24	6	4 coupled	4 0	4 ° j	4 0	May, 1865	In fair order.
ı	18	. Do	1542	do	. do	do	18	24	6	do	4 0	4 0	4 0	Sept., 1866	do Waiting four parkailan
۱	19	Do	1543	do	do	do	18	24	6	do	4 0	4 0	4 0	,, 1865	Waiting for new boiler and cylinders.
١	20 21	Do Do	1547	do do	do	do do	18 18	24 24	6 6	do	4 0	4 0	4 0 4 0	Jan., 1867 do	In good order. Waiting for new boiler
- 1	21		1546	uo		αυ	10	24			4 0	4 0	4	40	and cylinders.
	22	Do	1549	do	do	do	18	24	6	do	4 0	4 0	4 0	do	do
1	23	Beyer, Peacock, & Co	443	Passenger.	2-wheel bogie and tender	Outside	18	24	6	do	3 0	5 9	5 9	April, 1867	In good order.
-	24	Do	444	do	do	do	18	24	6	do	3 0	5 9	5 9	Feb., 1867	In fair order.
ı	25	Do	445	do	do	do	18	24	6	do	30	5 9	5 9	April, 1867	In good order.
١	26	Do	449	do	do	do	18	24	6	do	3 0	5 9	5 9	Oct., 1865	In fair order.
Į	27	<u>D</u> o	450	do		_do	18	24	6	do ,	3 0	5 9	5 9	Nov., 1866	Requires repairs.
į	28	Do	451	do	do	_do	18	24	`6	do	3 0	5 9	5 9	Mar., 1867	In fair order.
j	29	Manning, Wardle, & Co	88	do		Inside	11	17 .	6	All coupled	3 0	3 0	3 0	,, 1864	do
1	30	Do	109	do		do	11	17	6	. do	3 0	3 0	3 0	Aug., 1864	In good order.
	31 32	Do Beyer, Peacock, & Co	928	do do	do 2-wheel bogie and tender	do Outside	18	17 24	6 6	do 4 coupled	3 0	3 ° 5 6	3 o 5 6	do Nov., 1870	In fair order.

No. 2—continued.

List and Condition of Locomotive Engines and Tenders on 31st December, 1883—continued.

Stock	Maker's Name.	Maker's	Class.	Description.		Cylinders.		Number of wheels	Coupled or single	Dia	meter of whe	els.	Commenced	Q.,, 277.
No.	maker's Name.	No.	Class.	Безсприон.	Position.	Diameter.	Length of stroke.	on engine.	wheels.	Leading.	Driving.	Trailing.	to run.	Condition.
						Inches.	Inches.			Ft. in.	ft. in.	ft. in.		
33	Beyer, Peacock, & Co	929	Passenger.	2-wheel bogic and tender	Outside	18	24	6	4 coupled	30	5 6	5 6	Nov., 1870	In good order.
34	Do	930	do	do	do	18	24	6	do	3 0	5 6	5 6	Dec., 1870	Under repairs.
35	Do	931	do	do	do	18	24	6	do	3 0	5 6	5 6	do	In good order.
35 36	Mort & Co	1	Mixed	Tender engine	Inside	16	24	6	do	5 6	5 6	3 6	Sept., 1870	In fair order.
37	Do	2	do	do	do	16	24	6	do	5 6	5 6	3 6	Nov., 1870	do
37 38	Do	3	do	do	do	16	24	6	do	5 6	5 6	3 6	Dec., 1870	do
39	Do	4	do	do	do	16	24	6	do	5 6	5 6	3 6	Feb., 1871	do
40	Vale & Lacy	5	Goods	do	do	18	24	6	All coupled	4 0	4 0	4 0	Dec., 1870	do
41	Do*	6	do	do	do	18	24	6	do	4 0	4 0	4 0	Jan., 1871	Under repairs.
42	Do	7	do	do	do	18	24	6	do	4 0	4 0	4 0	Mar., 1871	In fair order.
43	Do	8	do	do	do	18	24	6	do	4 0	4 0	4 0	do	Under repairs.
44	R. Stephenson & Sons	1981	do	do	do	18	24	6	do	4 0	4 0	,	Dec., 1870	In fair order.
45	Do	1982	do	do	a.	18	24	6	3.	4 0		T -	Feb., 1871	do
46	Do	1983	do	,	do	18	24 24	6	ما م	4 0	4 0	T -	Mar., 1871	dο
47	Do	1984	3.	1	100	18	24	6	3.	4 0	T *	T -	_' '	Under repairs.
48	n.	2181	,	,	ا ئد		26	6	a .	T - 1	4 0	4 0	do	
	η.	2182	3	,	do	19		6	3.	4 0	4 0	4 0	Dec., 1874	In good order.
49	η.					19	26	_	do	4 0	4 0	4 0	do	In fair order.
50	n-	2183	do	do	do	19	26	6	do	4 0	4 0	4 0	do	In good order.
51	Do	2184	do	do	do	19	26	6	do	40	4 0	4 0	do	do
52	, <u>D</u> o	2348	do	do	do	18	24	6	do	40	4 0	4 0	July, 1879	do
53		2185	do	do	do	19	26	6	do	4 0	4 0	4 0	Feb., 1875	do
54	<u>D</u> o	2187	do	. do	do	19	26	6	do	40	4 0	4 0	May, 1875	Waiting for repairs
55 56	<u>D</u> o	2188	do	do	do	19	26	6	do	40	4 0	4 0	do	In fair order.
56	Do	2189	do	do	do	19	26	6	do	4 0	4 0	4 0	Aug., 1875	do
57		2190	do	do	do	19	26	6	do	4 0	4 0	4 0	July, 1875	In good order.
57 58		2191	do	do	do	19	26	6	do	4 0	4 0	4 0	Aug., 1875	Requires repairs.
59 60	Do	2192	do	do	do	19	26	6	do	4 0	4 0	4 0	do	In fair order.
60	Do	2194	Passenger.	do	do	19	28	6	do	5 0	5 0	5 0	Oct., 1874	In good order.
61	Do	.2193	do	do	do	19	28	6	do	5 0	5 0	5 0	Nov., 1874	Requires repairs.
62	Do	2195	do	do	do	19	28	6	do	5 0	5 0	5 0	Dec., 1874	In good order.
63	Do	2196	do	do	do	19	28	6	do	5 0	5 0	5 0	do	do
64	Do	2108	do	do	do	19	28	6	do	5 0	5 0	5 0	do	In fair order.
65	Do	2197	do	do	do	19	28	6	do	5 0	5 0	5 0	Jan., 1875	do
	Manning, Wardle, & Co	182	do	Tank engine	do	12	17	6	do	3 0	3 0		Feb., 1874	do
67	Mort & Co.	15	3	1 1	اما		20	6	ā.	· ·	4 0	9	Mar., 1875	do
68	Do	16	٦.	, ,	αο do	13	20	· 6	a_	4 0	4 0		do	In fair order.
69	D.	17	ā.	, ,	4.	13	20	6	1	7 -	T -	T -	July, 1875	in fair order.
70	D-	18	do	n	ایا	13	20	6	3	4 0	4 0	4 0	July, 1075	ln good order. do
71	T7 1 0 T	Nil.	3.	3		13		6	3.	4 0	4 0	4 0	do	*
	n. "	do		1	do	13	20	6		4 0	4.0	4 0	do	do .
72	η.	do		do	do	13	20	-	do	4 0	4 0	4 0	do	In fair order.
73	TO:		do	do	do	13	20	6 6	• do	4 0	4 0	4 0	do	In good order.
74	TO '1 TOT. 1	do	do	do	do	13	20	-	do	4 0	4 0	4 0	Aug., 1875	In fair order.
75	*Th	do	Mixed	Tender engine	do	16	24	6	4 coupled	5 6	5 6	3 9	,, ī 1876	In good order.
76	Do	do	do	do	do	· 16	24	6	do	5 6	5 6	3 9	April, 1877	do
77	Do	do	do	do	do	17	24	6	do	56	5 6	3 9	Sept., 1877	Under repairs.
78	Do	do	_do	do)	do	17	24	6	do	5 6	5 6	3 9	Dec., 1877	In fair order.
79 80	Beyer, Peacock, & Co	1624	Passenger.		Outside.	18	24	8	do	3 0	5 6	5 6	May, 1877	do
	<u>D</u> o	1625	do	do	do	18	24	8	do	3 0	5 6	5 6	do	do
81	Do	1626	do	do!	do	18	24	8	do	3 0	5 6	5 6	do	do

No. 2—continued.

List and Condition of Locomotive Engines and Tenders on 31st December, 1883—continued.

Stock	Makara Nama	Maker's	Class	Desgription	••	Cylinders.		Number	Coupled or single	Dia	meter of whee	els.	Commenced	G. W.
No.	Maker S Name.	No.	Olass.	Безстрион.	Position.	Diameter.	Length of Stroke.	on engine.	wheels.	Leading.	Driving.	Trailing.	to run.	Condition.
	Maker's Name. Beyer, Peacock, & Co Do Do Do Do Do Do Do Do Do Do Do Do Do D	No. 1627 1628 1629 1630 1631 1632 1633 1634 1635 1636 1637 1643 1644 1645 1646 1647 1648 1676 1683 1684 2349 1686	Passenger do	4-wheel bogie and tender do .	Position. Outside do	-	Stroke. Inches. 24 24 24 24 24 24 24 24 24 24 24 24 24	of wheels	4 coupled	ft. in. 3 0 3 0 3 0 0 3 0 0 3 0 0 3 0 0 3 0 0 4 0 0 0 4 0 0 0 4 0 0 0 4 0	Driving. ft. in. 5566666666666666666666666666666666666	Trailing. ft. in. 5 5 6 6 6 5 5 6 6 6 6 6 6 6 6 6 6 6 6		Under repairs. Requires repairs. In fair order. de do In good order. In fair order. In fair order. In fair order. In fair order. In fair order. Under repairs. Will shortly require repairs. In good order. Under repairs. Will shortly require repairs. In good order. In good order. In good order. In good order. In fair order. In fair order. In fair order. In fair order. In fair order. In good order. Un good order. In fair order. In good order. In fair order. In good order. do In fair order. In good order. do In fair order. In good order. do In fair order. In good order. In good order. In good order. In good order. In good order. In good order. In good order. In good order. In good order. In fair order. In fair order. In fair order.
121 122 123 124 125 126 127 128 129	Do Do Do Do Do Do Vulcan Foundry Do Do Baldwin Locomotive Co	1768 1769 1770 1772 1774 1776 833 834 835 4395	do do do do do do do do do do do	do do do do	do do do do do do do do do do	18 18 18 18 18 18 12 12 12	24 24 24 24 24 27 17 17 24	8 8 8 8 8 8 6 6 6 6 8.	do do do do do do do do do do do do do d	3333333333	555555553335	555555533355	do do Jan., 1879 do do do do do do do do do	In fair order. In good order. do In fair order. In good order. Will shortly require repairs. In fair order. In good order. do do do

No. 2—continued.

List and Condition of Locomotive Engines and Tenders on 31st December, 1883—continued.

Stock		Maker's	C 11	Donal Com		Cylinders.		Number of wheels	Coupled or single	Dia	meter of whee	els.	Commenced	Condition.
No.	Maker's name.	No.	Class.	Description.	Position.	Diameter.	Length of stroke.	on engine.	wheels.	Leading.	Driving.	Trailing.	to run.	· ·
<u> </u>						Inches.	Inches.			ft. in.	ft. in.	ft. in.		
131	Baldwin Locomotive Co	4405	Goods	2-wheel bogic and tender	Outside	20	24	10	8 coupled	26	4 0	4 0	April, 1879	Will shortly require repairs.
132	Do	4414	do	do	do	20	24	10	do	26	40	4 0	do	In good order.
133	Do	4525	do	do	do	20	24	10	do	26	4 0	4 0	Sept., 1879	Under repairs.
134	Do	4526	do	do	do	20	24	10	do	26	40	4 0	do	do
135	Do	4527	do	do	do	20	24	10	do	26	4 0	4 0	Aug., 1879	In fair order.
136	Do	4528	do	do	do	20	24	10	do	26	4 0	4 0	Sept., 1879	do
137	Do	4529	do	do `	do	20	24	10	do	26	4 0	4 0	do	do
138	Do	4530	do	do	do	20	24	10	do	26	4 0	4 0	do	Under repairs.
139	Do	4531	do	do	do	20	24	10	do	26	4 0	4 0	Aug., 1879	In fair order.
140	Do	4533	do	do	do	20	24	10	do	26	4 0	4 0	Sept., 1879	Requires repairs.
141	Do	4535	do	do	do	20	24	10	do	26	4 0	4 0	do	In fair order.
142	Beyer, Peacock, & Co	1890	do	Tender engine	Inside	18	24	[6	All coupled	4 0	4 0	4 0	Dec., 1879	In good order.
143	Dubs & Co	1275	Passenger	4-wheel bogie and tender	Outside	18	24	[8	4 coupled	3 0	56	56	April, 1880	do
144	Do	1269	do	do	do	81	24	8	do	3 0	5 6	5 6	Mar., 1880	In fair order.
145	, Do	1270	do	do	do	18	24	8	4 coupled	3 0	5 6	5 6	do	Under repairs.
146	Do	1271	do	do	do	18	24	8	do	3 0	5 6	5 6	do	In good order.
147	Do	1272	do	do	do	18	.24	8	do	3 0	5 6	5 6	do	Will shortly require repairs.
148	Do	1273	do	do	do	18	24	8	do	3 0	5 6	5 6	do	do
149	Do	1274	do	do	do	18	24	8	do	3 0	5 6	5 6	do	In fair order.
150	Do	1276	do	do	do	18	24	8	do	3 0	5 6	5 6	April, 1880	do .
151	Do	1277	do	do	do	18	24	8	do	3 0	5 6	5 6	do	In good order.
152	. Do	1278	do	do	do	18	24	8 -		3 0	5 6	5 6	do	do
153	Do	1279	do	' do	do	18	24	8	do	3 0	5 6	5 6	do,	do
154	Do	1285	do	do	do	18	24	8	do	3 0	5 6	5 6	May, 1880	In fair order.
155	Do	1286	do	do	_do	18	24	8	do	3 0	5 6	.5 6	do	Waiting for repairs.
156	Do	1287	do	do	do	18	24	8	do	3 0	5 6	5 6	do	In fair order.
157	Do	1288	do	do	do	18	24	8	do	30'	5 6	5 6	do	In good order.
158	Beyer, Peacock, & Co	1909	do	4-wheel bogie and tank	Inside	16	24	8	do	3 0	5 0	5 0	Sept., 1880	do
159	Do	1910	do	do	do	16	24	8	do	3 0	5 0	5 0	Aug., 1880	do
160	Do	1911	do	do	do	16	24	8	do	3 0	5 0	5 0	do	. do
161	Do	1912	do	do	do	16	24	8	do	3 0	5,0	5 0	Sept., 1880	do
162	Do	1913	do	do	do	16	24	8	do	· 30	5 0	5 0	do	ďo
163	Do	1914	do	do	_do	16	24	8	do	3 0	5 0	5 0	July, 1880	do
164	Do	1930.	Goods	Tender engine	Outside	18	24	6	All coupled	4 0	4 0	4 0	Sept., 1880	In fair order.
165	Dubs & Co	1430	Passenger	4-wheel bogie and tender	do	18	24	8	4 coupled	3 0	5 6	5 6	April, 1881	In good order.
166	Do	1431	do	do	do	18	24	8	do	3 0	5 6	5 6	do	do
167	<u>D</u> ₀	1432	do	do	do	18	24	8	do	3 0	5 6	5 6	do	do
168	<u>D</u> o	1433	do	do	do	18	24	8	do	3 0	5 6	5 6	Mar., 1881	do
169	Do	1434	do		do	18	24	8	do	3 0	5 6 5 6	1 5	April, 1881	do do
170	Do	1435	do		do		24		do	3 0		1 5	Nov., 1881	do do
171	Beyer, Peacock, & Co	2060	do	7.	do	18 .	24	8	do	3 0		1 3 -		i do
172	Do	2061	do	1.	do	_0	24	8	do	3 0		1 5	do	do do
173	Do '	2062	do		do		24	8	3-	3 0		1 2	do	do do
174	Do	2063	do	do	do	18	24	8	do	3 0		1 3 -	Jan., 1882	do
175	Atlas Company, Sydney	ı	do	J	do	18	24	8		1 5	1	1 5 -	Mar., 1882	do
176	Do	. 2	do		do		24	8	1	3 0		1 3 -	Feb., 1882	do do
177	Do	3	do	do	do	18	24	8	3 -	3 0		1	Mar., 1882	do
178	Do Do	4 5	do	do	do do	18	24	8	1 3.	3 0	5 6	5 6	Sept., 1882	do
179			αο	αο '					ι αο					

No. 2—continued.

List and Condition of Locomotive Engines and Tenders on 31st December, 1883—continued.

tock		Maker's	~·	5 00.00		Cylinders.		Number	Coupled or single	Dia	meter of whee	els.	Commenced	G 1111
No.	Maker's name.	No.	Class.	Description.	Position.	Diameter.	Length of stroke.	of wheels on engine.	wheels.	Leading.	Driving.	Trailing.	to run.	Condition.
						Inches.	Inches.			ft. in.	ft. in.	ft. in.	<u> </u>	
τ8ο	Atlas Company, Sydney	6	Passenger	4-wheel bogie and tender	Outside	18	24	8	4 coupled	3 0	5 6	5 6	Oct., 1882	Will shortly require repair
ι81	Do	1 1	do	do	do	18	24	8	do	3 0	5 6	5 6	Dec., 1882	In fair order.
182	Do	7 8	do	do ·	do	18	24	š	do	3 0	5 6	5 6	do	In good order.
183	Beyer, Peacock, & Co	2064	Goods	Tender engine	Inside	18	24	6	All coupled	4 0	4 0	4 0	Oct., 1881	Waiting for repairs.
184	Do	2065	do	ا ہے	do	18	24	6	do	4 0	4 0	4 0	do	Under repairs.
85	Do ·	2066	do		do	18	24	6	do	4 0	4 0	4 0	do	In fair order.
186	Do	2067	do	do	do	18	24	6	do	4 0	4 0	4 0	do	Will shortly require repa
187	Do	2068	do	do	do	18	24	6	, go	4 0	4 0	4 0	do	In fair order.
188	Do	2069	do	do	do	18	24	6	do	4 0	4 0	4 0	do	Will shortly require repa
189	Do ,	2070	do	. do	do	18	24	6	do	4 0	4 0	4 0	Nov., 1881	In fair order.
190	Do	2071	do	do	do	r8	24	6	do	4 0	4 0	4 0	do	In good order.
191	Henry Vale, Sydney	16	do	do	do	18	24	6	do	4 0	4 0	4 0	April, 1882	Will shortly require repair
192	Do	17	do	do	do	18	24	6	do	4 0	4 0	4 0	May, 1882	In fair order.
93	Do	18	do	do	do	18	24	6	do	4 0	4 0	4 0	July, 1882	do
94	Do	19	do	do	do	18	24	6	do	4 0	4 0	10	do	In good order.
95	Do	20	do	do	do	18	24	6	do	4 0	4 0	4 0	Mar., 1883	In fair order.
96	Do	21	3.	do	do	18	24	š	do	4 0	4 0	4 0	do	In good order.
	Do	22	7		do	18	24	6	do	. 4 0	4 0	4 0	, go	do
97	Τ.	23		1	do	18	24	6	do	4 0	4 0	4 0	do	do
98	Beyer, Peacock, & Co	2073	3.	2-wheel bogie and tender	Outside	18	26	š i	6-wheeled coupled.	2 0	4 0	4 0	Jan., 1882	In fair order.
05 06	· •	2074	3.	, 0	do	18	26	8	do	2 9	4 0	4 0	do	do
	Τ.		3.	J	do	18	26	8	do	2 9	4 0	4 0	do	do
08	Τ) -	2075 2076	3-	ا ء ا	a.	18	26	8	ا ہدا	2 9	4 0	4 0	do	Under repairs.
	m.		1.	3.	do	18	26	8		2 9	4 0	4 0	Feb., 1882	In fair order.
09	70-	2077		J	J	18	26	8	ا	2 9	4 0	4 0	do	Under repairs.
019	7)-	2070	do de	3	do	18	26	8 .	ایا	2 9	4 0	4 0	Mar., 1882	In good order.
	η.	2080	٦.	3.	do	18	26	8	3	2 9	4 0	4 0	Feb., 1882	In fair order.
12	n.	2081	,		a	18	26	8	i a. i	2 9	4 0	4 0	Mar., 1882	Will shortly require repo
13	5	2082		ا م	30	18	26	- 8	6 1.1	,	4 0	10	ا مر	In fair order.
14	TO .		3.		do	18	26	8	ا عث	,	4 0		April, 1882	do
15	5	2083		po ,	do	18	26	8	7.	29	4 0	4 0	do	Under repairs.
16	T) -	2084	1.	3.	do	.18	26	8	3-	29	4 0	4 0	do	In fair order.
17	TD	2085	-	3.	4.	18	26	8	3.	29	4 0	4 0	do	In good order.
18	Τ).		3.	3.	do	18	26	. 8	3.	2 9		4 0	May, 1882	In fair order.
19	n.	2091	3.	ا	ـ د	18	26	8	ا ہدا		4 0	4 0	do	do
20	Υ.	2092	,	3.	do	18	26	8	J	29	4 0	4 0	Sept:, 1883	In good order.
25	T) -	2308	-	do	do	18	26	8		2 9	4 0	4 0	1 " 1 " "	do
26	η.	2309	,	3.	dο	18	26	8	3.	2 9	4 0	4 0	do	do
27 28	Τ).	2310		3.	do	18	26	8	40	,		T 1	3.	do
	70 -	2311		l a. ' l	dο	18	20 26	8	3. 1	29			ا عد ا	do
29	The	2312			do	18	20 26	8	5.	2 9	T -	T -	do	do
30	Τ.	2313			Inside		20 26	8	13	- 2	4 0 6 0	4 ° 6 °	Nov., 1882	do
55	T) -	2150	Passenger do		, I	17	20	8			. 6 0	6 0	Dec., 1882	do
56	η.	2151	a. I	do		17		8					do	do
57	T) -	2152	do	do	do	17	26	8 1	do	3 6	_ :	_	Jan., 1883	do
58	Do	2153	do	do	do	17	26 26	8	do	3 6			1 1 -	In fair order.
59	n.	2154	do	do	do	17	26	° I	do	3 6			do	do
60	Do	2155	do	do	do	17	26	. 8	do	3 6	6 0	6 o 6 o		
72	Dubs & Co	1771	do	do	do	17	26	ŏ	do	3 6	6 0		Dec., 1883	In good order.
74	Do	1773	do :	do	do	17	26	ð	do	36	60/	6 0	do	do

No. 2—continued.

GREAT NORTHERN RAILWAY.

List and Condition of Locomotive Engines and Tenders on 31st December, 1883.

Stock	Maker's name.	Maker's	Class.	Description.		Cylinders.		Number of wheels	Coupled or single .	Dia	meter of whee	els.	Commenced	Condition.
No.	Maker's hame.	No.	VIASS.	Description.	Position.	Diameter.	Length of Stroke.	on engine.	wheels.	Leading.	Driving.	Trailing.	to run.	Condition.
1					·	Inches.	Inches.			ft. in.	ft. in.	ft. in.		
1	Fairbairn & Sons		Passenger	Tender engine	Inside	16	24	6	Coupled	5 6	5 6	3 9	Mar., 1857	In good order.
. 2	Do		do	do	do	16	24	6	do	5 6	5 6	3 9	do	Undergoing general repairs.
3	Do		do	do	do	16	24	6	do	5 6	5 6	3 9	do	In good order.
4 1	Do		do	do	do	14	22	6	do	46	46	3 0	Mar., 1856	In fair order.
5	Manning, Wardle, & Co	10	do	do	Outside	15	20	6	Single	36	5 9	3 6	Mar., 1861	In good order.
, 6	Do	39	Goods	Tank engine	do	16	24	6	Coupled	3 0	4 6	4 6	Mar., 1863	In moderate condition.
8	Do Pete, Brassey, & Betis	38	_do	do	do	16	24	6	go	3 0	46	4 6	do	do
- 1	Manning, Wardle, & Co	77	Passenger Goods	Tender engine	do	15	20	6	Single	3 6	6 0	3 6	Jan., 1864 June, 1864	In good order.
9	Do Do	1 32	la. I	Tank engine	Inside Outside	12 16	17	6 6	Coupled	3 O 3 G	3 0	3 0	Sept., 1864	go .
11	Stephenson & Co	42 1544	ا د ا	Tender enginedo	Inside	18	22	6	do	3 6	5 0	5 0	July, 1865	In fair order.
12	Do	1545	do	١	٠, ١	18	24 24	6	3.	4 0	4 0	4 0	do	In good order.
13	Do	1546	do	do	do	18	24	6	do	4 0	1 0	4 0	do	Requires repairs.
14	Beyer, Peacock, & Co	446	do	do	Outside	18	24	6	do	3 0	5 9	5 9	Sept., 1865	In fair order.
15	Do	447	do	do	do	18	24	6	do	3 0	5 9	5 9	do	In good order.
16	Do	448	do	do	do	18	24	6	do	3 0	5 9	5 9	do	In fair order.
17	Manning, Wardle, & Co	9	Passenger	do	dο	15	20	6	Single	3 6	5 9	3 6	Mar., 1866	In good order.
18	Mort's Co	8	Goods	do	Inside	18	24	6	Coupled	4 0	4 0	4 0	May., 1871	do
19	Do	9	do	do	do	18	24	6	do	4 0	4 0	4 0	do	Requires repair.
20	Kittson & Co.	1620	do '	Tank engine	do	16	24	6	do	.4 0	4 0	4 0	June, 1872	In good order.
21	Vale & Lacy		do	Tender engine	do	18	24	6	do	4 · 0	4 0	4 0	Nov., 1873	In fair order.
22	Do		do	do	do	18	27	6	do	4 0	4 0	4 0	do	In good order.
23	Mort's Co	12	do	do	do	18	24	6	go	3 9	3 9	3 9	July, 1874	do In fair order.
24	D.	τ4	do	do	do	18	24	6	do	3 9	3 9	3 9	Aug., 1874 June, 1875	In fair order. In good order.
25 26	n.	11	ا	do	do	18 18	24	6	do	3 9	3 9	3 9	do	Undergoing general repairs.
27	Beyer, Peacock, & Co	1620	Passenger.	4-	Outside	18	24	8	40	3 9	3 9 5 6	3 9 5 6	July, 1877	In moderate condition.
28	Do	1621	do	do	do	18	24 24	8	do ,	3 0	5 6	5 6	Aug., 1877	In fair order.
29	Do	1622	do	do	do	18	24	8	do	3 0	5 6	5 6	do	In good order.
30	Do	1623	do	do	do	18	24	l š	do	3 0	5 6	5 6	do	do
31	Do	1677	Goods	do	Inside	18	24	6	do	4 0	4 0	4 0	Oct., 1877	Requires repairs.
32	Do	1678	do	do	do	18	24	6	do	4 0	4 0	4 0	do	In good order.
33	Do	1679	do	do	do	18	24	6	do	4 0	4 0	4 0	do	In fair order.
34	<u>D</u> o	168ó	do	do	do	18	24	6	do	4 0	4 0	4 0	do	do
35	<u>D</u> o	1681	do	do	do	18	24	6	do	4 0	4 0	4 0	Sept., 1877	Requires repairs.
36	Do	1687	_do	do	do	ì 18	24	6	do	4 0	4 0	4 0	do	In good order.
37	<u>D</u> o	1771	Passenger.		Outside	18	24	8	do	· 3 o	5 6	5 6	Feb., 1879	, do
38	Do	1773	do	do	do	18	24	8	do	3 0	5 6	5 6	do	In fair order.
39	Do	1775	do	do	_do	18	24	8	do	3 0	5 6	5 6	do	In good order.
40	Do	1887	Goods	do	Inside	18	24	6	do	4 0	4 0	4 0	Feb., 1880	In fair order.

No. 2—continued.

List and condition of Locomotive Engines and Tenders on 31st December, 1882—continued.

No.	Maker's Name.	Maker's	Class.	Description.		Cylinders.		Number	Coupled or single	Dia	uneter of whe	els.	Commenced	
	morel a Hame,	No.	Class.	Description.	Position.	Diameter.	Length of stroke.	of wheels on engine.	wheels.	Leading.	Driving.	Trailing.	to run.	Condition
41 42	Beyer, Peacock, & Co Do	1888	Goods	Tender engine		Inches. 18	Inches.	6	Coupleddo	ft. in. 4 0 4 0	ft. in. 4 0 4 0	ft. in.	Feb., 1880	In fair order. In good order.
43	<u>D</u> o	1896	do	do	1 -	18	24	6	do	4 0	, 4 0	4 0	May, 1880	Requires repairs.
44	Do	1897	do	do		18	24	6	do	4 0	4 0	4 0	June, 1880	In good order.
45	Do Do	1898	do	do		18	24	6	do	4 0	4 0	4 0	Aug., 1880	In fair order.
46 47	D-1- 0 C	1899	do Passenger.	do do		18	24	6	do	4 0	4 0	4 0	do	In good order.
48	Duos & Co	1281	J	٠	Outside	18 18	24	8 8	do	3 0	5 6	5 6	Dec., 1880	do
49	Do	1282	do	í	. do	18	24	8	do	3 0	5 6	5 6	do	Requires repairs.
50	Do	1283	do		. do	18	24 24	8	d a	3 0	5 6	5 6	Jan., 1881	In good order.
51	Do	1284	do	do	. do	18	24	8	3.	3 0	5 6 5 6	5 6 5 6	do Feb., 1881	do In fair order.
221	Beyer, Peacock, & Co	2087	03-	ا ا		I	1	<i>i</i>		(2 9)	•	5 6	1	
.21	Deyer, I eacous, & Co	2007	Groods	αο	. do	18	26	8	do	14 05	4 0	4 0	May, 1882	Requires repairs.
222	Do	2088	do	do	. do	18	26	8	do	$ \begin{cases} 2 & 9 \\ 4 & 0 \end{cases} $	4 0	4 0	do	do
223	Do	2089	do	do	do	18	26	8	do	$ \begin{cases} 2 & 9 \\ 4 & 0 \end{cases} $	4 0	4 0	do	Under repair.
224	Do	2090	do	do	do	18	26	8	do	$ \left\{ \begin{array}{ccc} 2 & 9 \\ 4 & 0 \end{array} \right\} $	4 0	4 0	do	In fair order.
231	Do	2314	do	do	. do	18	26	8	do ,	$ \begin{cases} 2 & 9 \\ 4 & 0 \end{cases} $	4 0	4 0	Oct., 1883	In good order.
232	D ₀	2315	do	do	. do	18	26	8	do		4 0	4 0	do	do
233	Do	2316	do	do	do	18	26	8	do	$ \begin{cases} 2 & 9 \\ 4 & 0 \end{cases} $	4 0	4 0	do	do
234	Do ,	2317	do	do	. do	18	26	8	do	$ \begin{cases} 2 & 9 \\ 4 & 0 \end{cases} $	4 0	4 0	do ,	do
235	Do	2318.	do	do	. do	. 18	26	8	do	$\begin{cases} 2 & 9 \\ 4 & 0 \end{cases}$	4 0	4 0	Nov., 1883	do
236	Do	2319	do	do	. do	18	26	8	do	$\begin{cases} 2 & 9 \\ 4 & 0 \end{cases}$	4 0	4 0	do	do
237	Do	2320	do	do		18	26	8	do	$ \begin{cases} 2 & 9 \\ 4 & 0 \end{cases} $	4 0	4 0	Dec., 1883	do
238	Do	2321	do	do	. do ·	18	26	8	do	$\begin{cases} 2 & 9 \\ 4 & 0 \end{cases}$	4 0	4 0	do	do
261	Dubs & Co	1760	Passenger.	do	Inside	18	26	8	do	3 6	6 0	6 o	Oct., 1883	do
262	Do	1761	do	do	. do	18	26	8	do	3 6	6 0	6 0	l i	do .
263	<u>D</u> o	1762	do	do	do	18	26	8	do	3 6	6 0	6 0 '	a.	do
264	Do	1763	do	do	ا .د	18	26	8	, do	3 6	6 0	6 0	do	do
29I	Beyer, Peacock, & Co	1891	Goods	do	. do	18	24	6	do	4 0	4 0	4.0	Feb., 1883	do

No. 3.

The Superintendent of Tramway Rolling Stock to The Commissioner for Railways.

Department of Public Works, Railway Branch,

Tramway Locomotive Superintendent's Office,

Sir,

Randwick, 1st May, 1884.

I have the honor to report as follows on the maintenance and general condition of the rolling stock, machinery, &c., under my supervision during the year ending December 31st, 1883:—

At the commencement of the year forty-three independent engines and a combined engine and car were in stock available for traffic, also two independent engines for yard shunting; of this number thirty-four were in use daily working the traffic, and one in use shunting.

The cars in stock, January 1st, 1883, comprised thirty-four double-decked, seating ninety passengers; thirty-eight double-decked, seating sixty; five single-deck, seating fifty-six; five single-deck, seating seventy; one double-decked combined car, seating fifty; being a total of eighty-three cars, with a seating capacity for 6,020 passengers; of this number about seventy-three were in the hands of the traffic daily.

An addition has been made during the year to the engines in stock by the arrival of ten independent engines from the Baldwin Locomotive Works, one independent engine from Messrs. Merryweather & Sons, and a compound engine of the combined type, from a design furnished by the Department, and made by the Baldwin Locomotive Works.

The stock of cars has also been increased to the number of fifteen, viz., four double-decked, seating sixty, made by Messrs. Hudson Bros. (Limited); nine double-decked, seating sixty; one single-deck, seating eighty, made by Mr. T. Wearne; and one double-decked car, seating eighty, for the compound engine made by Messrs. J. G. Brill & Co.

During the year the Leichhardt line was opened, and two engines put on to work the traffic; and in June the Woollahra running was altered, which compelled the putting on of two extra engines on that line. The Merryweather engine has been employed in haulage of stores and watering the different lines.

The number of engines daily used for traffic now amount to thirty-nine.

The wear and tear of the engines still continues to be very great, and the repairing expenses consequently heavy. The limited accommodation for performing this work, and the fact that so much has to be done at night, in which the men have to be paid a full day for six hour work, increasing the cost of same 25 per cent., is a reason for part of this heavy expenditure. The state of the roads, and the conditions under which we have to run, also account in part for it.

I desire to urge upon the Commissioner the necessity for providing suitable workshop accommodation. Hitherto proper shops have not been erected, and the running and car sheds have had to be temporarily occupied for repairing purposes; this is not only inconvenient but adds to the cost of performing the work.

The mileage of thirty-seven engines during the year gives an average of nearly 25,000 miles per engine. Twenty of the number range from 20 to 25,000, thirteen from 25 to 30,000, and four from 30 to 34,000.

I would suggest the desirability of increasing, during the coming year, the amount of rolling stock to the extent of at least twenty engines and cars beyond those on order. Were these engines obtained a change can be made in the running that would tend to reduce the repairing expenses, and give a better opportunity of keeping them longer in an efficient condition.

During the year five engines were laid up requiring new boilers, and about seven will have to be taken off the road next year for the same purpose, one has been replaced, and the others are awaiting the arrival of boilers on order.

The whole of the machinery in the turning and temporary boiler-shops, together with the boilers and engines for driving same, have been kept and are now in efficient working order.

A number of machines suitable for car repairing is in stock, and I purpose utilizing No. 2 carriageshed as a car-repairing shop when completed by the contractors, and fixing and working these in it to facilitate and decrease cost of repairs.

Attached is a detailed report of engines and other rolling stock, also returns of machinery in workshops, &c.

I have, &c.,

GEO. DOWNE.

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LIST OF TRAMWAY MOTORS ON HAND ON 31ST DECEMBER, 1883.

• (Stock No.	Maker's Name.	Maker's No.	Class.	Description.			Cylinders.		Number of wheels	Coupled or single		Diameter of wh	eels.	Commenced	Condition.
			<u> </u>				Position.	Diameter.	Length of stroke.	on motor.	wheels.	Leading	g. Driving. Trailing. to run.		Condition.	
1								inches.	inches.			ft. in	ft. in.	ft. in.	<u> </u>	
.188	1 2	Baldwin & Co Do	4 16 C 19	Passenger. do	1 1		Outside.	11	16 16	4	Coupled	l	2 11		15 Sept., 1879	
	3	Do	,, 16	do	ـ اتـ		ا مد	11	16	4	do do		2 11	******	15 do 1879	do
Ö	4	Do	,, 17	do	، مه	•••••	ایہ	II	16	4	J.		2 11		15 do 1879	do l
_ [5	Do	,, 22	do	` مة	••••	ایدا	11	16	4	do	I	2 11		15 do 1879	In fair order.
	ŏ	Do	,, 21	do	` مہ ا	••••••	46	11	16	4	4.		2 11	•••••	6 do 1880	Laid up.
	7	Do	,, 20	do	ا م	• • • • • • • • • •	40	11	16	4	3-	1	2 11		6 do 1880	In fair order.
	8	Do	,, 23	do	40	•••••	do	II	16	j 4	40	1	2 11	*******		do
	9	T) _o		do	·			·		4		2 II	2 11	•••••	12 Dec., 1880	Laid up; requires new boiler.
	10	Do	,, 24		J.	•••••	do	11	16	4	do		2 11		19 do 1880	do
	II	T) _a	,, 25 4 14 C 29	do	ا م		do	11	16	4	do	I	, 2 11	•••••••	5 do 1880	do
.							do	10	14	4	do	2 11	2 11		25 April, 1881	Fair order; soon require overhaul.
Ì	12	D.	6 16 ¹ 3 C 2	do	Motor 6 wheels \cdot		do	11	16	6	do	2 11	2 11	2 0	17 do 1881	l do l
Ì	13	~	4 14 C 28	do			do	. 10	14	4 1	do	2 11	2 11		18 do 1881	In good order.
	14	Do Do	6 16 3 С 1	do			do	11	16	6.	do	2 11	2 11	2 0	30 do 1881	do
	15	Do	4 14 C 30	do			do	10	' 14	4	do	2 11	2 11		9 June, 1881	Fair order.
	17	Do	" 3 ¹	do			do	10	14	4	do	2 11	2 11		11 do 1881	In good order.
1	18	T) ₀	,, 3 ²	do			do	10	14	4	do	. 2 11	2 11		6 July, 1881	do ·
	19		33	do	do .		do	10	14	4	તo	2 11	2 11		13 do 1881	do →
	20		6 16 ¹ 3 C 9	do		•••••	do	11	16	6]	do	211	2 11	2 0	15 do 1881	do
			"	do		••••••	do	11	16	. 6	do	2 11	2 11	2 0	23 do 1881	Fair order; soon require overhaul.
	21	Do	" 5 " 8	,do			do	11	16	6	do	2 11	2 11	2 0	23 do 1881	do
· ·	. 22	Do Do		do			do	11	16	6	do		2.11	2 0	31 do 1881	do
- 1	23		,, 4	do			do	11	16	6	do		2 11	2 0	2 Aug., 1881	Under repair.
1	24	Do	» 7 l	do	do .		do	11	16	6	do	2 11	2 11	2 0	31 July, 1881	Fair order; soon require
	25	Do	" 4	do	do .		do	11	16.	6	a.				• •	overhaul.
j	26	Do	4 14 C 34	do	Motor tombers		do	10	14	7 1	4.	·	2 11	2 0	2 Aug., 1881	Fair order.
	27	Do	4 11 C 45	do	do	- 1	a	,	14	7 1	d'a	1 - 0	2 11	•••••••	4 do 1881	do
	28	Do	,, 59	do	do		أمة	2	12	4	do		1 -	•••••	28 Oct., 1881	. do
	29	Do	,, 59 ,, 56	do	do		3.	9	12	4 1	do	- 0	2 8 2 8		28 Dec., 1881,	In good order.
	1	ļ	•	- '''			uo	9		4 . [αο	2 8	2 8.	••••••	16 do 1881	do
ı				. 1		ł	1	1	j	l l		1	. ['
_												1		·		

List of Tramway Motors on hand on 31st December, 1883—continued.

Stock						Cylinders.		No. of wheels on	Coupled or single	Die	ameter of whee	ėls.	Commenced to	Condition.
Stock No.	Maker's Name.	Maker's No.	Class.	Description.	Position.	Diameter.	Length of stroke.	Motor.	wheels.	Leading.	Driving.	Trailing.	,run.	Condition.
		1									1			
						inches.	inches.			ft. in.	ft. in.	ft. in.		
30'	Baldwin & Co	4 11 C 60	Passenger.	Motor, 4 wheels	Outside.	9	12	4	Coupled	2 8	2 8	••••••	26 Jan., 1882	Fair order; soon require overhaul.
31	Do	., 55	do	do	do	9	12	4	do	28	` 2 8		26 do 1882	do
32	Do	1	do	do	do	وَ	12	4	do	28	28		26 do 1882	In good order.
33	Do	57	do		do	9	12	4	do	28	28		16 Feb., 1882	_ do
34	`Do	1 4 - 6 (1) 0 -	do		do	11	16	4	do	2 11	2 11		1 July, 1882	Fair order.
35	Do		do		do	II	16	4	do	2 11	2 11		1 do 1882	Under repair.
35 36	Do	-6	do	do	do	II	16	4	do ,	2 11	2 11	•••••	20 June, 1882	Fair order; soon require
		1 .	ĺ		İ		_						T	overhaul.
37 38	Do	: » 37	do		do	11	16	4	do	2 11	2 11		3 July, 1882	Fair order.
38	Do		do		do	11	16	4	do	2 11	2 11		23 Aug., 1882	In good order.
39	Do	,, 31	`do		do	11	16	4	do	2 11	2 11	· · · • • • · · •	22 do 1882	do
40	Do	" 33	do		do	11	16	4	do	2 11	2 11	••••	25 do 1882	do do
41.	$\mathbf{D_{0}}$		do		do	11	, 16	4	do	2 11	2 11	••••••	24 do 1882	Fair order.
42	Kitson & Co	" 59	do	Motor, 6 wheels	do	113	18	6	do	2 6	26	2 6	2 Oct., 1882	Laid up; wheel broken.
43	Do	60	do		do	117	18	6	do	2 6	26	26	21 do 1882	Fair order.
44	Baldwin & Co	4 II C 37	do	Motor, 4 wheels	do	10	14	4	do	2 11	2 11		14 Dec., 1882	do
45	Do	, 36	do		do	10	14	4	do	2 11	2 11		16 do 1882	In good order.
46	Do	, 38	do	do	do	10	14	4	do	2 11	2 11	*******	1 Mar., 1883	Fair order; soon require overhaul.
47	Do	" 40	do	do	do	10	14	4	do	2 11	. 2 11		3 do 1883	In good order.
48.	Do	I	do	1 5.	do	10	14	4	do	2 11	2 11	·	6 do 1883	do
49	Do	1	do	do	do	10	14	⁻ 4	do	2 11	2 11		6 do 1883	do
50	Kitson & Co		do	Combined motor and can	Inside	7₺	12	4	do	2 4 ½	2 4½		11 Nov., 1882	Fair order.
51	Baldwin & Co	1 4 - 4 0 4-	do	M-411-	Outside	10	14	4	do	2 11	2 11	•••	28 April, 1883	do
52	Do	1 4-	do	i'	do	10	14	4	do	2 11	2 11		28 do 1883	do
53	Do		do	7	do	10	14	4	do	2 11	2 11		1 May, 1883	`do j
54	Do		do	j J.	do	10	14	4	do	2 11	2 11		1 do 1883	do
	Merryweather	,, 41	Goods	. do	Inside	71	12	4	do	2 31/4	2 31		6 June, 1883	In good order.
55 56	Baldwin & Co	1 10	Passenger		Outside	10	14	1 4	do∴	2 11	2 11		16 do 1883	do
57	Do	_ i _ i _	do	do	do '	10	14	4	do	2 11	2 11	,,	18 do 1883	do
70		4 14½ C 1	do	1 2 2	Inside		12	4	do	2 6	2 6		Notcommenced	
1	j · · · · · · · · · · · · · · · · ·	*****		T	1	´ -		l '.	1	i			to run yet.	}
1		Į.	Į.	I	Į.	l	l	l	٠	l		<u> </u>	1	<u> </u>

List of Cars on hand on 31st December, 1883.

 ,		1	CARS ON HARD ON		
[Class.	Numbers.	Description.	Number of wheels.	To carry.	Remarks.
A {	3, 4, 5, 6, 7, 8	Double-deck	Two 4-wheel bogies	90 passengers	In good order.
A1 {	1, 2, 42, 43, 44, 45, 46	} Double-deck	Two 4-wheel bogies	90 passengers	In fair order.
	28, 29, 31, 32, 33, 36 21, 22, 24,	Double-deck	Two 4-wheel bogies	90 passengers	In good condition.
A2 {	25, 26, 27, 30, 34, 35, 38, 39, 40, 41, 47	Double-deck	Two 4-wheel bogies	90 passengers	These cars are now running, but require a thorough overhaul and painting.
	37	***************************************		**********	In workshop for overhaul.
A3	48, 49, 50	Double-deck	Two 4-wheel bogies	60 passengers	In fair running order, but require painting.
A 4	51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80	Double-deck	Two 4-wheel bogies	бо passengers	In good running order, but require var- nishing, and some instances painting.
A ₅ {	81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92 93, 94	Double-deck	Two 4-wheel bogies Two 4-wheel bogies	60 passengers 60 passengers	In fair working order, but require var- nishing; some require painting. Under-carriages good, bodies require over-
	93,94	Double-ucon	2 wo 4 whoor bogies	oo passengers	haul.
A6	95, 96, 97, 98	Double-deck	Two 4-wheel bogies	60 passengers	In fair running order, require varnishing, and some painting.
в	9	Single-deck box car	Two 4-wheel bogies	56 passengers	In fair running order.
B1 {	11, 12, 16 23	Single-deck box cars Single-deck box car		56 passengers 50 passengers	In fair running order. Requires painting.
c {	17, 18, 19, 20 10, 99	Single-deck, open sides.	Two 4-wheel bogies Two 4-wheel bogies	60 passengers 70 passengers	In fair running order.
ъ	50	Combined car and motor of Kitson type.	4 wheels	50 passengers	In fair running order.
D1	100	Combined car and motor, Department type.	4 wheels	80 passengers	Not running yet.

LIST OF MACHINERY ON HAND	AT WORKSHOPS, RANDWICK,	on 31st December, 1883.
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- 1 10-h p. vertical boiler with horizontal cross tubes and all fittings complete. No. 1.
 - 2. 18-h.p. horizontal engine, with force pump complete.
 - 1 Wheel lathe, 4' 6" centres.
 - 1 Screw cutting lathe, $10\frac{1}{2}$ centres, 16 feet bed, with gap and change wheels complete.
- 1 \mathbf{D}_{o} $9\frac{1}{2}''$ 16 do \mathbf{Do} 94" do 15 do D٥ 15 dο do \mathbf{D}_{0} 16 do do Do 14 do do
- 1 Brass finishers' lathe, 6" centres, and 5 feet bed. 10.
- \mathbf{Do} 6" 11.
- 1 Planing machine, 6' x 2' **12**.
- 1 Slotting machine, 8" stroke. 13.
- 1 Double table shaping machine, 14" stroke.
- $\mathbf{D}_{\mathbf{0}}$ do
- 1 Vertical drilling machine, 18" space, with round movable table. 16.
- 17. \mathbf{D} o 15"
- 18. 1 Small vertical drilling machine with hand power attached.
- 19. 1 Screwing machine.
- 20. 1 Wood-turners' lathe (headstock only), fixed on bed, No. 9.
- 1 Small screwing machine with hand power.
- 22. 1 Grindstone, 5 feet diameter, on wooden frame.
- 1 2½-cwt. steam-hammer.
- 1 No. 2 patent silent fan.
- 1 Screw cutting lathe, $7\frac{1}{2}$ centres, with gap and change wheels complete.
- 1 Punching and shearing machine.
- 1 Whitworth screw cutting lathe, 10" centres, with change wheels complete.
- 34.
- 35. 36. 1 Double table shaping machine, 12" stroke (Whitworth's)
- 1 Hydraulic press.

Machinery in Pitt-street Workshops.

- 16-h.p. vertical boiler, with engine attached.
- 1 Screw cutting lathe, $7\frac{1}{2}$ centres, 8 feet bed, with gap and change wheels complete. 27.
- 28. Do do do
- 29. 1 Shaping machine, 6" stroke.
- 1 Vertical drilling machine, 15" space, with round movable table. 30.
- 1 Grindstone on wooden frame.
- 1 Screw cutting lathe, 8" centres, 10 feet bed, with gap and change wheels complete.

Woodworking Machinery at Randwick not yet erected.

- 1 Surface plane.
- 1 Moulder and shaper.
- 1 Band saw, setting and filing machine.
- 4 Chisels and bits, extra.
- 5 Band saw blades, extra.
- 1 Set of knives, extra.
- 1 Automatic knife-grinder.

- 1 Side moulder.
- 1 Standard saw bench.
- 1 Emery grinder.
- Do wheels.
- 1 Planing machine.
- 1 Morticing and boring machine.
- 1 Band saw machine.

No. 4.

Dates of Opening, and the length in miles of the different sections of Railway Lines, from the commencement to 31 December, 1883.

	Date of opening.	To where opened.	Southern Line.	Western Line.	Northern Line.	All Lines
26 Sept.,	1855	Parramatta	14	•••		14
26 Sept.,	1856	Liverpool	9			9
		Total, 1856	23			23
5 April,	1857	East Maitland			- 17	17
	-	Total, 1857	23		17	40.
	1858 1858	Newcastle	12		1	I 12
	1858	West Maitland			2	2
		Total, 1858, 1859	35	:	20	55
	1860 1860	Lochinvar		8	7	7 8
4 0 41,	1000	Total; 1860		8		
ta Dec	1861	Rooty Hill	35	_	27	70
12 Dec.,	•			3		3
M	-96-	Total, 1861	35	11	27	73
ı May,	1862 1862	Branxton		5	8	8 5
	1862 1862	Penrith	6	5		5 6
•		Total, 1862	41	21	35	97
	1863	Singleton	13		14	14
		Total, 1863	54	2 I	49	124
	1864 1864	Morpeth		16	3	3
•		Total, 1864, 1865, 1866	54	37	52	143
	1867	Mittagong	24	**********		24
	1867 1867	Weatherboard Sutton Forest	:9	28		28 9
		Total, 1867	87	65	52	204
	1868 1868	Mount Victoria Marulan	28	15	*******	15 28
		Total, 1868	115	80	52	247
	1869 1869	Muswellbrook Goulburn	20		31	31 [°] 20
	1869	Bowenfels		20	•••••	20
		' Total, 1869	135	100	83	318
1 Mar., 1 July,	1870 1870	Wallerawang Rydal	********	. 8 . 6		. 8 6·
o Oct.,	1870	Aberdeen	•••••		7	7
		Total, 1870	135	114	- 90	339
	1871 1871	Scone	••••••	*******	9	9 10
	1	Total, 1871	135	114	109	358

No. 4-continued.

	Date of opening.	To where opened.	Southern Line.	Western Line.	Northern Line.	All Lines
		Total, 1871	135	114	100	358
_ T	- 0			•		
	1872 1872	Sidings, Collingwood, &c	I	••••••	1 14	2 14 .
	1872			19		19
	1872	. Macquarie Plains		5		5.
•	·	m. 1. 0.				
		Total, 1872	136	138	124	398
4 Mar.,	1873	. Raglan		5		5
		Total, 1873, 1874	136	143	124	403
4 Feb.,	1875	. Kelso		3		3
9 Nov.,	1875	. Gunning	31			, 3ĭ
		Total, 1875	167	146	124	437
. 4	-0-6		,			
	1876 1876		29	2		2 29
	1876		14			14
	1876			27		27
,	•	i			i	
		Total, 1876	210	175	124	509
	1877		20	••••		20
	1877			- 20	·	20
	1877		•••••		24	24
I Nov.,	1877	Cootamundra	25			25_
		Total, 1877	255	195	148	598
2 April,	1878	Bullock Island Branch			11/2	11/2
	, 18 7 8		15			15
	1878		18		•••••	18
	1878		18	·		18
4 Oct.,	1878	Tamworth			38	38
		Total, 1878	306	195	1871	688]
5 Mar.,	1879	Breeza			15	15
	1879		5			. 5
ı Sept.,	1879	Gunnedah			26	26
		Total, 1879	311	195	2281	7341
_			3		120,	_
	1880	1 0		56	•••••	56
ı sept.,	1880	Gerogery	. 59			59
		Total, 1880	370	251	228½	849½
ı Feb	1881	Dubbo	•••••	30		30
з Feb.,	1881	Albury	18			18
8 Feb.,	1881	Narrandera	60			60
ı Sept.,	1881	Darlington	38	•• •••		38
		Total, 1881	486	281	2281	995
	1882				12	12
	1882		34		********	34
	1882		24	23 `		23
	1882 1882		34		24	34
	1882		•••••		51	51
1 Oct.,	1882	Narrabri			32	32
	1882			63		63
		Total, 1882	554	367	3471	1,268
	1883				15	15
9 June,	, 188 3	Nyngan		36		36
4 June,	, 1883	River Murray	I			1
			555	403	362}	1,320

No. 5.—Table A.

Abstract of the total Quantity and Cost of Land taken for Railway Purposes to the 31st December, 1883, under the Government Railways Act of 1858.

Railway Lines.	Length.	Qua	tity taken.	Total.	Amount claimed.	-	Amoun	t paid.	Probable		Rat	te.
		Private.	Crown.		Amount Claimed.	For Land and Buildings.	Severance.	As costs of Claimants' Conveyance	para.	Total Cost.	Per Mile of Line.	Per Acre.
GREAT WESTERN LINE. Granville to Bathurst Bathurst to Orange Orange to Dubbo Dubbo to Nyngan Nyngan to Bourke Wallerawang to Mudgee Richmond Branch	47 75 85 25th	38 2 3 727 1 38	1,600 2 25 ³ 141 2 21 899 3 9 2,325 3 4 3,175 1 17 1,162 0 30	a. r. p. 2,941 2 254 749 2 39 1,237 0 11 2,364 1 35 3,175 1 17 1,889 2 28 144 2 38 144 2 38	£ s. d. 85,027 15 4 37,439 11 0 34,336 6 6 2,987 10 0	£ s. d. 38,418 11 2 12,795 9 9 12,522 6 9 1,334 6 11	392 0 7	37 16 6 1,521 19 987 11 5 440 18 1 165 2 0 607 9 	1,874 7 11 1,344 4 11 7 2,164 0 0 320 1 0	47,641 3 9 17,668 14 8 16,783 17 9 1,794 18 1 	£ s. d. 362 12 8½ 368 11 6¾ 196 14 4¾ 18 0 4¼	£ s. d. 35 10 6½ 29 1 14 49 15 3½ 46 7 9
Total, Great Western			$\frac{7}{12}$ 9,322 3 16 $\frac{1}{4}$	-	192,878 6 11	3,540 3 9 75,675 13 3	11,443 18 9	1,195 14 11 3,446 2		·	366 12 2½ 175 14 0½	46 8 3½ 32 12 9
GREAT NORTHERN LINE. Newcastle to Murrurundi Murrurundi to Tamworth Tamworth to Uralla Uralla to Glen Innes Glen Innes to Tenterfield Morpeth Branch Bullock Island Branch	119 44 62 36 63 44 78 36 57 45 ¹ / ₂ 1 25 ¹ / ₂	1,479	380 2 38 253 2 32 ³ / ₄ 1,118 0 25 737 2 27 1 2 28 ³ / ₄	884 0 14	169,915 8 9 14,134 6 7 46,520 14 4 37,470 16 5 26,852 15 2 32,367 4 10 14,680 2 0	57,731 11 3 5,002 6 10 18,474 4 5 8,547 12 8 151 13 8 18,088 0 9 9,465 16 3	2,738 9 4	15 15 0 154 19 1,568 10 2 519 10	239 10 7 2,739 16 11 3,867 18 9 4,883 13 5	7,153 3 7 26,040 11 3 16,293 13 8 5,052 12 7 20,631 19 0	602 3 103 114 10 104 409 15 32 207 13 103 87 15 54 5,991 2 7 7,418 16 3	48 13 3½ 14 4 2¾ 59 18 7½ 27 5 0½ 16 18 9½ 591 7 2 498 14 2½
Total, Great Northern	386 26 1	3,367 3 21	2,873 0 394	6,241 0 2112	341,941 8 1	117,461 5 10	17,885 7 2	4,012 6 11 3,323 15	14,265 4 6	156,947 19 11	406 5 14	46 12 0 1
GREAT SOUTHERN LINE. Sydney to Granville Granville to Goulburn Goulburn to Yass Yass to Cootamundra. Cootamundra to Wagga Wagga Wagga to Albury Albury to the River Murray Murrumburrah to Young Goulburn to Bungendore Cootamundra to Gundagai	77 49 1 311 17 66 39 321 32 341	252 3 35; 1,312 0 4 549 1 12; 469 0 16 210 3 21; 591 3 10 47 2 2 211 3 0 542 3 24 493 2 27	679 3 32 226 2 35 511 3 14 566 3 37 637 0 12 	280 3 383 1,991 3 36 776 0 7½ 980 3 30 777 3 18 1,228 3 22 47 2 2 344 0 11 621 2 6 649 2 22	46,839 4 0 79,997 3 0 42,389 3 9 15,951 9 3 12,266 9 6 60,847 4 0 33,576 10 0 50,276 4 11 36,080 16 2 29,943 19 10	27,508 18 7 34,170 3 9 16,314 17 2 5,078 17 5 7,501 1 0 21,294 2 4 8,968 12 11 3,951 8 0	7,295 2 10	317 13 6 596 17 175 10 6 184 8	2,738 9 9 1,103 0 0 1,025 11 7 194 12 10 1,273 11 8 2,779 18 6	46,337 11 6 20,814 18 4 7,026 6 7 8,729 6 7 29,372 8 6 12,974 9 2 16,409 2 7 10,303 14 5	384 2 1½ 383 11 11½ 108 12 4¾ 157 9 3 378 8 11¾	125 0 54 35 6 44 37 17 10 14 19 64 41 7 104 49 12 78 273 1 52 77 9 104 18 19 7 25 6 5
TOTAL, GREAT SOUTHERN	480 25%	4,681 3 32 ₃	3,017 2 1	7,699 I 33-10	408,168 4 5	124,788 1 2	20,122 3 2	2,562 18 10 3,104 3 11	45,517, 10 8	196,094 17 . 9	408 5 13	41 17 8

No. 5.—Table A—continued.

Abstract of the total Quantity and Cost of Land taken for Railway purposes—continued.

٥			Quantit	y taken.						Amoun	nt paid		Probable		Ra	ate.
Railway Lines.	Length.	Priv	rate.	Cro	wn.	To	otal.	Amount claimed.	For Land and Buildings.	Severance.	As costs of Arbitration.	Claimants' Cost on Conveyances.	Amounts to be paid.	Total Cost.	Per Mile of Line.	Per Acre.
	Miles chns.	а.	r. p.	a.	r. p.	a.	r. p.	£ s. d.	£ . s. d.	£ s. d	. £ s. d	. £ s. d.	. £ s. d.	£ s. d	. £ s. d	l. £ s. d.
DARLING HARBOUR BRANCH. Sydney to Darling Harbour	1 11½	16	3 9½			16	3 9½	54,036 0 0	45,088 15 0		348 15	300 14 0	850 0 0	46,588 4 6	40,732 17 0	2,771 11 23
NORTH-WESTERN LINE. Werris Creek to Gunnedah Gunnedah to Navrabri	41 22 55 43		3 28 3 38	378 1,407	3 3 3 4	781 1,642	2 31 3 2	10,242 II 7 5,280 I 10	6,368 5 7 1,980 5 6	382 8 6 488 10 6	6 697 II 6	82 7 2 5 10 8 0	548 O 7	8,078 12 10 3,292 8 2	195 14 6 59 5 7	
Total, North-Western	96 55	637	3 26	1,786	2 7	2,424	1 33	15,522 13 5	8,348 11 1	870 18 (830 14	92 15 2	1,228 1 9	11,371 1 0	117 12 1	17 16 6
SOUTH COAST RAILWAY. Sydney to Bottle Forest Coal Cliff to Macquarie River	24 18 1 26 20		0 33 1 21½		o 10 ¹ / ₃		1 3 0 36½	281,675 11 7	36,440 16 11	2,589 0	680 19	639 13 4	114,200 10 9 75,000 0 0		6,378 19 10	
TOTAL, SOUTH COAST	50 38 1	715	2 14½	131	3 254	847	1 39 4	281,675 11 7	36,440 16 11	2,589 0	680 19	639 13 4	189,200 10 9	229,551 0 2	4,547 10 8	320 15 82
SOUTH-WESTERN LINE. Junee to Narrandera Narrandera to Hay Narrandera to Jorilderie	61 323 106 573 64 714	517 793	3 9½	717	2 30 3 12	1,511	0 2I 2 2I ¹ / ₂		4,631 12 8 260 15 2	288 0 6 4,579 10 6	0	39 0 8	885 o c 8,241 8 5	8,602 3	53` 4 8 94 12 0 132 11 3	19 10 3 1 10 16 8
Total, South-Western	233 I ³ 4	1,422	0 321/2	2,668	0 26	4,090	1 18½	44,935 9 11	7,194 12 10	4,967 10	······	39 0 8	9,766 4 2	21,967 7	94 5 5	15 8 11
SOUTHERN AND NORTHERN JUNCTION RAILWAY. Homebush to Hawkesbury River Hawkesbury River to Hamilton Platform.	28 55 3 63 78½	334 690	1 31	264 506			3 36 3 16	73,347 0 10 160,634 0 5					40,385 17 2 32,500 0 0	1	1,407 6 6 507 19 2	\$ 120 15 1\$ \$ 47 1 11\$
Total, Southern and Northern Junction Railway	92 544	1,024	2 I	771	1 11	1,795	3 12	233,981 1 3				•••	72,885 17 2	72,885 17	786 8 9	71 2 104
Total on all Lines to 31st December, 1883		15,046	2 35 31	20,571	2 6 1	35,618	1 1 3 ;	3 1,573,138 15 7	414,997 16 1	57,878 17	7 9,631 9	4 10,946 4 1	345,735 6 11	839,189 14 10	434 10 3	55 15 5

No. 5—continued.

TABLE B.

ABSTRACT of the total Quantity and Cost of Land taken for Railway purposes to the 31st December, 1883, under the Public Railways Land Resumption Act of 1874.

Ī					Amounts paid.		Probable		Rat	e.
	Railway Lines:	Length.	Quantity taken.	For Land.	For Improvements.	Claimants' Costs on Conveyances.	Amounts to be paid.	Total Cost.	Per Mile.	Per Acre.
	Great Western Line. Orange to Dubbo	Miles chns. 85 25\frac{1}{2} 99 49\frac{1}{4}	a. r. p. 7 1 29 60 2 26	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d. 14 17 2 148 5 1	£ s. d. 0 3 5 4 1 9 9 4	£ s. d. 1 19 11\frac{3}{4} 2 8 10\frac{1}{2}
	Nyngan to Bourke Wallerawang to Mudgee	125 49 : 84 54	6 0 0	16 2 11	75 12 6	25 12 8	666 6 11	958 17 3	0 1 11 9 5 1½ 2 8 6¼	2 0 0 6 13 11½
	Total, Great Western	395 17%	191 0 17	143 1 4	92 15 0	29 10 10	693 4 1	950 17 3	2 0 04	5 0 44
	SOUTH-WESTERN LINE. Junee to Narrandera Narrandera to Hay Narrandera to Jerilderie	61 323 106 573 64 713	238 0 16½ 1,240 3 31 96 1 15	57 <u>15</u> 11 634 6 6	557 0 0 357 7 6	30 17 0 9 5 6	408 2 9 3,208 17 8 192 13 9	1,053 15 8 4,209 17 2 192 13 9	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4 8 6½ 3 7 10¼ 2 0 0
	Total, South-western	233 13	1,575 I 22½	692 2 5	914 7 6	40 2 6	3,809 14 2	5,456 6 7	, 23 8 34	3 9 34
	GREAT NORTHERN LINE. Tamworth to Uralla Uralla to Glen Innes Glen Innes to Tenterfield	63 44 78 36 57 45 ¹	227 3 3 129 2 28 34 I 7	47 10 5	108 0 0	. 10 5 8	366 9 7 295 0 0 68 11 9	53 ² 5 8 295 0 0 68 11 9	8 7 6 ¹ / ₄ 3 ¹ 5 2 ¹ / ₂ 1 3 ¹⁰	2 6 8 ³ / ₄ 2 5 6 2 0 0
	Total, Great Northern	199 454	391 2 38	47 10 5	108 0 0	10 5 8	730 I 4	895 17 5	4 9 91/2	2 5 83
	NORTH-WESTERN LINE. Gunnedah to Narrabri	55 43	105 0 30	123 8 9			117 7 9	240 16 6	4 6 834	2 5 9½
	SOUTH COAST RAILWAY. Sydney to Bottle Forest	24 18 1	29 3 14				59 13 6	59 13 6	2 9 34	2 0 0
	Gebat Southern Line. Goulburn to Bungendore Cootsmundra to Gundagai	39 32 ³ 4 32 34 ³ 4	67 3 22 10 1 10	••••			172 15 6 25 12 6	172 15 6 25 12 6	4 7 81 0 15 91	2 10 10 ³ / ₄ 2 9 8 ¹ / ₄
	Total, Great Southern	- `71 67 <u>}</u>	78 0 .32			:	198 8 0	198 8 0	2 15 23	2 10 9
	SOUTHERN AND NORTHERN JUNCTION RAILWAY. Homebush to Hawkesbury River Hawkesbury River to Hamilton Platform	28 55 1 63 78½	28 0 I 44 3 29				514 17 0 89 17 3	514 17 0 89 17 3	17 18 9 ³ 4 1 8 1	18 7 8
	Total, Southern and Northern Junction	92 541	72 3 30				604 14 3	604 14 3	6 10 6	8 5 94
	Total on all Lines to 31st December, 1883	1,072 7	2,444 I' 23½	1,006 2 11	1,115 2 6	80, 5 0	6,213 3 1	8,414 13 6	7 16 113	,3 8 10 1

RETURN OF PERMANENT-WAY MATERIAL, RAILS FOR RENEWALS, AND MISCELLANEOUS ARTICLES IMPORTED DURING THE YEAR ENDING 31st DECEMBER, 1883.

No. 6.

Date Invoice.	Name of Ship.		T. Rails.		F	ishplates.	Bol	ts and Nuts.		Spikes.		Screws.	Name of Contractor.	Rate	Invoice Cost	Freight.	Colonial	English	Total Cost.	Cost	Date o
invoice.		No.	Tonna	ge.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.		per ton.		110.g.u.	Charges.	Charges.	Total Cost.	per ton.	Arriva
	•				t fo			••					, Western, and R	ichmond	l Railways	, 6th Fel	oruary, 18	883.	1		<u> </u>
1883. 8 Sept 8 ,, 7 ,, 4 ,, 8 ,, 2 ,,	Gulf of Venice Pericles Etna Sorata Parramatta Midlothian	1002 741 1113 879 438 887	230 6 171 4 220 19	1. lbs. 0 2 3 26 2 11 0 15 2 13 0 12		T. c. q. lbs.		T. c. q. lbs.		T. c. q. lbs.	 	T. c. q lbs.	Bolckow, Vaughan, & Co	£ s. d. 5 6 6 5 6 6 5 6 6 5 6 6	£ s. d. 1226 7 1 911 18 0 1176 14 3 1069 5 11 531 6 8 1067 8 6	£ s. d. 117 17 8 83 9 6 113 1 10 102 15 8 48 12 10 97 14 5	£ s. d. 33 2 9 25 13 2 31 16 11 27 11 7 14 19 1 30 0 4	£ s. d. 12 12 7 7 5 9 12 2 5 11 0 7 4 6 2 8 10 0	£ s. d. 1390 0 1 1028 6 5 1333 15 5 1210 13 9 599 4 9 1203 13 3	£ s. d. 6 0 8 6 0 1 6 0 8 6 0 7 6 0 1 6 0 1	25 Dec. 23 Nov 7 ,, 24 Dec.
		5060	1123 11	1 23							. : .			•	5983 0 5	563 11 11	163 3 10	55 17 6	6765 13 8		- "
				'			•	<u> </u>		·	,			<u> </u>	<u>'</u>			<u>1</u>	<u>. </u>	<u> </u>	<u>!</u>
						Indent for	Perr	nanent-wa	у Ма	terials requ	uired	for 647 m	iles of Railway Ex	tension	s (includi	ng sidings	s).			•	
1883. 3 Nov	Potosi	390	98 14	1 10					 				Charles Cammell & Co	5 8 0	533 1 5	50 10 9	13 9 10	5 11 11	602 13 11 .	6 2 1	1883 31 Dec
July	Dallam Tower	•••	•••••	. 1	••						111878		Patent Nut & Bolt Co. (Limited.)		968 3 6	33 11 6	14 9 8	2 3 4	1018 8 0	20 10 3	1 Nov
∯ " L " L "	Star of India	•••			::		42054 116358	67 13 0 0	::		113568	50 8 0 0	93 99	15 10 0 19 10 0 15 10 0	378 19 6 982 16 0 1048 11 6	16 10 9 34 1 9 45 15 0	6 4 2 14 14 11 17 5 10	1 1 5 2 3 4 2 18 0	402 15 10 1033 16 0 1114 10 4	16-9 6 20 10 3 16 9 6	16 ,, 16 ,,
		390	98 14	1 10			158402	92 2 0 0			225446	100 1 0 0	,	•••••	3911 11 11	180 9 9	66 4 5	13 18 0	4172 4 1		,,,
1883.)			ì	I	١	Ind	ent fo	or Permane	ent-w	ay Materia	als, fo	r Sidings t	o Cattle-yards, H	1	h, 1st Maj	, 1882.				1	1883
4 Nov 6 ,, 8 ,, 9 ,,	Chimborazo John Elder Star of Germany City of Hankow Roslin Castle	670 241 468 977 244	51 4 102 16 207 16	1 2 2 14 1 2 2 8 1 4	5200	25 10 2 24	:::::::::::::::::::::::::::::::::::::::		:::		::		Bolckow, Vaughan, & Co	5 16 6 5 16 6 5 16 6 5 16 6 5 16 6 7 6 6	857 10 5 298 8 5 598 17 9 1210 12 0 309 7 10 187 1 0	71 15 5 24 19 7 50 2 6 101 6 3 25 18 0 16 17 2	19 18 2 7 4 3 15 17 11 32 1 5 8 3 4 4 9 7	8 2 5 2 18 0 4 8 8 8 16 2 2 5 9 1 2 9	957 6 5 333 10 3 669 6 10 1352 15 10 345 14 11	6.10 1 6.10 2 6.10 2 6.10 2	2 Jan 7 ,, 30 ,, 27 Feb 1 Mar
4 Sept 4 ,,	Parramatta	::			:.		10396	5 16 1 12	13408	5 4 0 20	23824	10 13 3 26	Bayliss, Jones, & Bayliss		81 9 0 192 11 8 67 14 4	3 19 10 7 6 9	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0 17 0 2 0 0	209 10 6 87 13 9 204 18 4	8 4 1 15 1 4 19 3 0	1 ,, 3 Jan. 3 ,,
9 ,,	Loch Eck											switches— 16 sets.	Ransomes & Rapier	15 3 6	242 16 0	3 11 5	1 5 1	0 14 4 2 11 6	73 5 2 263 11 0	14 · 1 · 4 16 · 9 · 5	
4 ,, .,	Allanshaw	•• .						•••••				crossings— 10 sets.	Vickers, Sons, & Co. (Limited).	14 5 0	145 0 0	3 17 3	1 19 9	1 12 0	152 9 0	15 4 11	2 May
		2600	562 4	0 2	5200	25 10 2 24	10396	5 16 1 12	13408	5 4 0 20	23824	10 13 3 26	, ,		4191 8 5	323 7 6	99 17 6	35 8 7	4,650 2 0		
				-1.4	<u>`</u>	Indent f	or Pe	ermanent-w	ay M	laterial for	Ren	ewals, Gre	at Northern Raily	vay, 27t	h Septeml	er, 1882.	<u> </u>			<u> </u>	<u> </u>
1883. 2 April	John Elder Chimborazo Kenmore	994 929 920	204 2	2 7 2 3 0 10	::		 		::		 		Bolckow, Vaughan, & Co	5 9 9 5 9 9 5 9 9	1194 4 8 1120 2 11 1098 1 6	127 17 1 119 18 5 117 11 3	11 14 3 9 7 10 12 1 7	11 18 9 11 4 1	1345 14 9 1260 13 3 1236 4 1	6 3 8 6 3 6 6 3 6	1882 28 May 8 June 10 July
March.	Cynisca	457	99 10	2 1						• • • • • • • • • • • • • • • • • • • •			, , ,,	5 9 9	546 2 11	58 9 5	6 0 0	4 5 11	614 18 3	6 3 6	13 ,,

T. Rails.

Fishplates.

Bolts and Nuts.

Date	Name of Ship.	<u> </u>	1. Italis.	_	rishplaces.	_	its and Nuts.		Spikes.		Screws.		Rate	1		Colonial	English		Cost	Date
of Invoice.	:	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	Name of Contractor.	per ton.	Invoice Cost	Freight.	Charges.	Charges.	Total Cost.	per ton	of Arri
	• •				Inde	ent for	Permaner	t-way	Materials	for	Sidings to	New Workshops,	Eveleial	ı İst Ma	т 1882	<u> </u>	٠	,	!	·
1882 . 4 Oct 8 ,, 6 ,, , . 4 Nov 0 ,, 6 Oct . 6 .,, , o 0 Nov	Port Jackson Carribulg Star of Germany Duchess of Argıle Alexander Duthe Roslin Castle Ann Duthie " Roslin Castle Lock Eck. Allanshaw	1851 680 701 1854 698 452	T. c. q. H 401 5 0 27 149 15 8 25 150 1 2 25 400 5 1 22 149 19 0 19 97 0 0 9	12472	T. c. q.	24944	14 2 1 14	31500	T. c. q. lb	56200	T. c. q. lb	Bolckow, Vaughan, & Co ""	£ s. d. 5 16 6 5 16 6 5 16 6 5 16 6 5 16 6 5 16 6 5 16 6 14 0 0 18 0 0 13 0 0 7 6 6	£ s. d. 2337 7 0 872 11 6 874 5 0 2331 11 9 873 10 2 565 1 0 197 13 3 454 6 0 161 12 8 448 12 7	.6 s. d. 195 12 4 78 0 7 78 3 5 195 2 8 73 2 1 47 5 9 9 13 8 17 8 11 8 7 10 40 6 6	£ s. d. 61 19 1 23 2 9 23 3 4 61 15 9 23 2 5 14 19 5 3 8 4 7 1 10 2 17 4 10 15 5	6 7 9 6 8 0 16 16 6 6 7 11 4 2 4 2 0 4	£ s. d. 2611 15 9 975 2 7 976 19 9 2605 6 8 976 2 7 631 8 6 212 15 6 483 8 8 174 11 3 502 7 0	£ s. d. 6 10 2 6 10 3 6 10 2 6 10 2 6 10 2 6 10 2 15 1 6 10 11 8 4 0 16 9 3	
4 ,,	Anansnaw								. •		73 sets.	Vickers, Sons, & Co. (Limited).	14 3 6½	1035 0 0	3 27 14 0	14 3 6	10 10 0	1087 7 6	14 17 11	2 May
		6236	1348 7 2 15	12472	61 4 3 3	24944	14 2 1 14	31500	12 8 2 19	56200	25 4 3 3	}		11365 10 11	829 1 9	268 18 11	90 13 9	12554 5 4		
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May						12540 20912 14630 4180 6270 8360 4180 8360 16720 14630 6270 6270	3 0 0 0 0 5 0 0 7 7 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0	4020 5366 7370 6030 7370 6700 5360 10050 6700 6750 3350 8040 13400 4020 5360 5360 8040	3 0 0 0 4 0 0 24 5 10 0 0 4 10 0 0 5 10 0 0 7 10 0 0 5 0 0 0 5 0 0 0 2 10 0 0 2 10 0 0 5 0 0 0 2 10 0 0 3 0 0 0 4 0 0 0 4 0 0 0 6 0 0 0 10 0 0 0			Bayliss, Jones & Baylis "" "" "" "" "" "" "" "" "" "" "" "" "	IS 22 10 0 0 1 31	67 10 0 40 10 0 112 11 5 54 2 11 74 5 0 60 15 0 78 15 0 67 10 0 54 0 0 101 5 0 67 10 0 33 15 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 40 10 0 40 10 0 54 0 0 54 0 0 54 0 0 55 0 0 56 0 0 57 10 0 57 10 0 58 0 0 58 10 0 58 10 0 59 0 0 50 0			0 8 1 1 1 2 6 0 10 10 9 0 16 2 0 9 0 0 16 2 0 9 0 0 16 2 0 9 0 0 16 2 0 9 0 0 16 2 0 9 0 0 17 0 9 0 0 18 0 18 0 18 0 18 0 18 0 18 0 1	40 18 1 113 13 11 54 13 9 74 19 10 61 7 1 74 19 10 79 10 9 68 3 6 54 10 9 102 5 3 22 14 6 68 3 6 45 9 0 34 1 9 22 14 6 81 16 2 45 9 0 90 18 0 68 3 6 136 7 0 90 18 0 68 3 6 136 7 0 90 18 1 45 9 0 90 18 1 90 190 190 190 190 190 190 190 190 190 1	13 12 8 13 12 8	
Mar: """ """ """ """ """ May """ May """ June						12540 20912 14630 4180 6270 8360 4180 8360 16720 14630 6270	3 0 0 0 5 0 0 7 3 10 0 0 1 0 0 0 1 10 0 0 2 0 0 0 1 0 0 0 3 10 0 0 1 10 0 0 1 10 0 0 1 10 0 0	4020 5366 7370 6030 7370 6700 5360 10050 6700 6750 3350 8040 13400 4020 5360 8040	\$ 0 0 0 0 4 10 0 0 0 0 0 0 0 0 0 0 0 0 0			Bayliss, Jones & Baylis "" "" "" "" "" "" "" "" "" "" "" "" "	IS 22 10 0 0 13 10 0 0 10 10 10 10 10 10 10 10 10 10 10	67 10 0 40 10 0 112 11 5 54 2 11 74 5 0 60 15 0 78 15 0 67 10 0 54 0 0 101 5 0 67 10 0 33 15 0 67 10 0 45 0 0 135 0 0 67 10 0 45 0 0 135 0 0 67 10 0 33 15 0 22 10 0 67 10 0 33 15 0 22 10 0 54 0 0 135 0 0 54 0 0 135 0 0 55 0 0 56 0 0 57 10 0 58 1 0 0 58 1 0 0 59 0 0 50			0 8 1 1 2 6 0 10 10 0 14 10 0 14 10 0 15 10 0 10 10 0 12 10 0 13 6 0 10 3 0 4 6 0 10 3 0 4 6 0 10 9 0 13 6 1 7 0 0 18 0 0 18 0 0 18 0 0 19 0 0 19 0 0 19 0 0 19 0 0 19 0 0 10 9	40 18 1 118 13 11 54 13 9 74 19 10 61 7 1 79 10 9 68 3 6 54 10 9 102 5 3 22 14 6 83 6 45 9 0 34 1 9 90 18 0 136 7 0 90 18 0 68 3 6 136 7 0 90 18 0 68 3 6 136 7 0 90 18 10 90 18 10 95 4 10 9 81 16 2 45 9 0	13 12 8 13 12 8	
Mar:						12540 20912 14630 4180 6270 8360 4180 8360 16720 14630 6270 6270 	3 0 0 0 0 5 0 0 7	4020 5366 7370 6030 7370 6700 5360 10050 6700 6750 3350 8040 13400 4020 5360 8040	3 0 0 0 4 0 0 24 5 10 0 0 4 10 0 0 5 10 0 0 7 10 0 0 5 0 0 0 5 0 0 0 2 10 0 0 6 0 0 0 10 0 0 0 3 0 0 0 4 0 0 0 6 0 0 0 10 0 0 0 8 7 2 13 7 0 0 0			Bayliss, Jones & Baylis "" "" "" "" "" "" "" "" "" "" "" "" "	IS 22 10 0 0	67 10 0 40 10 0 112 11 5 54 2 11 74 5 0 60 15 0 78 15 0 67 10 0 54 0 0 101 5 0 22 10 0 81 0 0 67 10 0 45 0 0 81 0 0 81 0 0 67 10 0 81 0 0 81 0 0 67 10 0 81 0 0 81 0 0 81 0 0 67 10 0 81 0 0 81 0 0 67 10 0 81 0 0 81 0 0 67 10 0 81 0 0 67 10 0 81 0 0 67 10 0 81 0 0 67 10 0 81 0 0 67 10 0 67 10 0 81 0 0 67 10 0 67 10 0 81 0 0 67 10 0 67 10 0 135 0 0 67 10 0 67 10 0 135 0 0 67 10 0 135 0 0 135 0 0 135 0 0 137 0 0 138 15 0 138 15 0 149 10 0 131 2 10 94 10 0 78 15 0			0 8 1 1 1 2 6 0 18 10	40 18 1 113 13 11 54 13 9 74 19 10 61 7 1 74 19 10 79 10 9 68 3 6 54 10 9 68 3 6 34 1 9 68 3 6 34 1 9 68 3 6 34 1 9 68 3 6 34 1 9 68 3 6 34 1 9 68 3 6 34 1 9 68 3 6 34 1 9 68 3 6 34 1 9 68 3 6 34 1 9 9 22 14 6 81 16 2 45 9 0 136 7 0 90 18 0 90 18 0 90 18 0 91 18 1 34 1 9 93 4 1 9 94 18 1 34 1 9 94 18 1 95 10 9 95 10 9 98 1 16 2 95 10 9 98 1 16 2	13 12 8 12 14 8 13 12 8	
Mar:						12540 20912 14630 4180 6270 8360 4180 8360 16720 14630 6270 6270	3 0 0 0 0 5 0 0 7 7 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0	4020 5366 7370 6030 7370 6700 5360 10050 6700 6750 3350 8040 13400 4020 5360 8040 1230 9380	3 0 0 0 4 0 0 24 5 10 0 0 4 10 0 0 5 10 0 0 5 10 0 0 7 10 0 0 5 0 0 0 2 10 0 0 2 10 0 0 6 0 0 0 10 0 0 0 3 0 0 0 4 0 0 0 4 0 0 0 6 0 0 0 8 7 2 13 7 0 0 0 10 0 0 0			Bayliss, Jones & Baylis "" "" "" "" "" "" "" "" "" "" "" "" "	IS 22 10 0 0 13 10 0 0 10 10 10 10 10 10 10 10 10 10 10	67 10 0 40 10 0 112 11 5 54 2 11 74 5 0 60 15 0 78 15 0 67 10 0 54 0 0 101 5 0 22 10 0 81 0 0 67 10 0 45 0 0 81 0 0 81 0 0 67 10 0 81 0 0 81 0 0 67 10 0 81 0 0 81 0 0 81 0 0 67 10 0 81 0 0 81 0 0 67 10 0 81 0 0 81 0 0 67 10 0 81 0 0 67 10 0 81 0 0 67 10 0 81 0 0 67 10 0 81 0 0 67 10 0 67 10 0 81 0 0 67 10 0 67 10 0 81 0 0 67 10 0 67 10 0 135 0 0 67 10 0 67 10 0 135 0 0 67 10 0 135 0 0 135 0 0 131 5 0			0 8 1 1 2 6 0 10 10 0 14 10 0 14 10 0 15 10 0 10 10 0 12 10 0 13 6 0 10 3 0 4 6 0 10 3 0 4 6 0 10 9 0 13 6 1 7 0 0 18 0 0 18 0 0 18 0 0 19 0 0 19 0 0 19 0 0 19 0 0 19 0 0 10 9	40 18 1 113 13 11 54 13 9 74 19 10 61 7 1 74 19 10 79 10 9 68 3 6 54 10 9 68 3 6 34 1 9 68 3 6 34 1 9 68 3 6 34 1 9 68 3 6 34 1 9 68 3 6 35 16 2 45 9 0 36 16 7 0 90 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 40 18 1 34 1 9 41 10 9 42 14 5 10 9 45 9 0 0 114 5 10 95 8 10 97 10 9 136 7 0	13 12 8 12 14 8 13 12 8	

Date of Invoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total cost.	Cost per Ton.	Cost each.	Date of Arrival.
1882.				T c; q. lbs.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£. s. d	£ s. d.	£ s. d.	1883.
2 Sept		Samuel Osborn & Co.	200 nests spiral bearing		•••••	0 17 6*	175 0 0	14 14 7	4 12 3	9 16 2	.204 3 0		105	— July
r2 ,,	recovered from Gulf of Finland	,	springs. 86 sets elliptical bearing		•••••	3 2 6*	268 15 o	27 6 11	6 I 7	15 8 2	317 11 . 8		3 11 104	– "
رو ['] ,,	` ,,	Hadfield's Steel Foun- dry Co.	springs. 20 pairs tram-car wheels and axles.	•••••	•••••	6 14 3*	134 5 0	14 6 3	3 10 1	9 2 11	161 4 3		8 1 21/2	– "
3 Oct	Fred P. Litchfield	R. W. Cameron & Co.	6 hand-car velocipedes	•••••	***	7 19 81	47 18 3	6 12 2	o 8 10	• •	55 3 3		9 3 101	
3 Sept	Euterpe Parramatta		50 sets switches	· · · · · · · · · · · · · · · · · · ·	•••••	13 18 6 88 0 0	696 5 0 440 0 0	45 7 7 7 4 5	7 2 3 11 1 0		463 13 9		15 5 1 1 92 14 9	6 Feb. 3 Jan.
6 ,,	"/	,,	2 ,, driving ,,	, . 	••••	210 0 0 88 0 0	420 0 0 176 0 0	3 ¹ 3 9 2 17 8	10 11 0 4 8 6	4 11 6			219 \8 1\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	3 "
6 ,, 6 ,,	,, ······	"	2 ,, trailing . ,, i set engine axle boxes and brasses.	***********	*******	50 0 0	50 0 0	0 15 2	I 5 6		52 12 8		52 12 8	3 "
		Ransomes & Rapier Samuel Osborn & Co.	65 sets switches 100 nests spiral bearing			14 0 0 0 17 6	910 0 0 87 10 0	55 5 3 7 10 1	9 5 0 2 6 9	17 12 2 1 3 9	992 2 5 98 10 7	••••••	15 5 3 ¹ / ₂ 0 19 8 ¹ / ₂	13 ,, 9 ,,
, , ,	,,	,, ' •··	springs. 50 sets elliptical bearing	•••••	•••	3 2 6	156 5 o	16 o o	4 r r	2 6 3	178 12 4	••••	3 11 54	9 "
7 "	,, ···	Patent Shaft & Axle-	springs. 25 pairs carriage wheels and axles.			19 15 0	493 15 0	147 0 9	13 5 4	763	661 7 4		26 9 I	9 "
3 "	Duchess of Argyle	tree Co. (Limited) Tangye's (Limited)	I G. engine with feed- pump and boiler.	•••••	•••••	252 2 3	252 2 3	6 15 11	690	3 8 9	268 15 11		268 15 11	5 Feb
2 ,,	Fred P. Litchfield	Burnham, Parry, Williams, & Co.	4 motors	•••••		1160 0 0	4640 o o	271 14 9	117 5 5	14 6 11	5043 7 1		1260 16 9	31 Jan
7 "	Roslin Castle	Patent Shaft & Axletree Co (Limited).	50 pairs waggon wheels and axles.	•••••••••••••••••••••••••••••••••••••••		16 13 2	833 0 0	33 ² 4	20 19 6	13 10 10	900 12 8	•••••	18 0 3	1 Ма
·8 "	$oldsymbol{A}$ lexander Duthie	Charles Cammell & Co (Limited).	42 bars prepared key steel	I 12 I 18	28 0 0		45 7 6	I 2 II	r 5 5	0 13 11	48 9 9	29 18 5	`	6 Feb
28 ,,	,,, (1	,, '	27 bars cast drift steel 50 sets elliptical bearing	0 2 0 0	42 0 0		4 4 0	о 1 б	0 2 4	0 1 4 2 6 0	4 9 2 178 8 0	44 11 · 8	3 II 4 ¹ / ₄	6 ,,
3 Nov		Samuel Osborn & Co.	springs.	• • • • • • • • • • • • • • • • • • • •	********	3 2 6	156 5 0	15 17 5	3 19 7			••••••		
4 Oct	Centurion	Patent Shaft & Axle- tree Co. (Limited).	50 pairs waggon wheels and axles.	•••••	••••••	16 13 2	833 0 0	33 - 3	20 19 6	13 10 10	900 12 7	•	18 0 3	5 Feb
24 ,, 20 Sept	Thomas Stephens	, ,	25 pairs carriage wheels and axles 50 Crossings, 1 in 72	•	••••••	19 15 0 13 2 9	493 15 0 656 18 9		12 9 10 6 12 11	7 17 1 9 0 8		•••••	21 6 2 13 16 1½	5 ,, 31 Jan
o ",,	4 1	,,	50 ,, 1 in 10	••••••	•••••	15 4 0 13 18 6	760 I 3	20 10 2	7 13 6	10 9 0	798 13 11 762 13 11		15 19 5½ 15 5 ·1	31 "
1 Nov 6 Oct	Roslin Castle	Anderston Foundry Co Patent Nut & Bolt Co.	50 sets switches	,5 0 0 0	32 0 10		696 5 0 160 0 0	45 8 3 3 6 0	7 ² 3 4 3 °		169 15 3	33 19 1	15 5 1	3 ¹ ,, τ Ma
9 Nov 8 "	Duke of Athol		1,000 c. s. volute springs 50 pairs waggon wheels and axles.			0 2 8 16 13 2	133 6 8 833 0 0	4 6 4 33 ² 4	3 9 8 20 19 6	2 2 I 13 10 10	143 4 9 900 12 8		0 2 10 ¹ / ₄ 18 0 3	ı "

Date of Invoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total Cost.	Cost per Ton.	Cost each.	Date of Arrival.
1882.				T c. q. lbs.	£ s. d.	£ s. d.	£°s.d∷	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	1883.
31 Oct	City of Hankow	Patent Shaft & Axletree Co. (Limited).	25 pairs carriage wheels and axles.		•••••	19 15 0	493 15 0	18 12 0	12 9 10	7 17 1	532 13 11		21 ₆ 2	27 Feb.
8 Nov 20 ,, 19 Sept	Duke of Athol Euterpe	Thomas Turton & Sons Patent Shaft & Axle-	25 waggon " " 800 waggon bearing springs		•••••••	16 13 2 0 11 0 16 13 3	416 10 0 440 0 0 833 0 0	16 11 2 18 5 2 33 2 3	10 11 3 11 3 0 20 10 6	6 15 5 8 8 2 13 13 11	450, 7 10 477 16 4 900 15 8		18 0 2 0 11 11 18 0 4	27 ,, 11 Mar. 6 Feb.
		tree Co. (Limited). Samuel Osborne & Co.	axles. 100 nests spiral bearing springs. 100 ,, ,,			0 17 6	87 10 0 87 10 0	7 10 7	2 7 9 2 6 9	I 4 0	98 12 4 98 11 5		o 19 8 ³	
17 Nov		Beyer, Peacock, & Co. Patent Woollen Cloth Co.			•••••	0 17 6 380 0 0	87 10 0 380 0 0 159 0 0	39 19 9 3 11 3	2 6 9 9 13 0 4 1 6	1 4 0 6 0 11 1 12 7	98 11 5 435 13 8 168 5 4	••••••	0 19 8½ 435 13 8 0 6 8¾	20 ,, 29 Mar.
17 ,, 11 & 24 Nov. 8 Nov); ······	Patent Shaft & Axletree Co. (Limited).	and axles.	· [0 2 I 16 13 2	53 0 0 2082 10 0	82 8 9	1 7 6 5 ² 4 3	33 16 4	56 2 0 2250 19 4		0 2 3 18 0 2	29 ,,
8 INOV	"	(Limited).	72 elliptical bearing springs		*****	6 0 4	433 4 0		10 19 3	5 10 4	455 18 5		6 6 7 3	
29 Nov	Nerbudda	Howell & Company Thomas Turton & Sons	44 nests spiral ,, 7,000 steel ferrules 450 waggon bearing springs		•••••	1 6 9 £15 ₩ 1000 0 11 0	58 17 0 105 0 0 247 10 0	0 14 7	6 6 9	0 14 11	62 3 7 109 12 10 268 16 8		1 8 3 15/13/3 \$ 1000 0 11 114	²⁹ ,, ²³ ,, ²⁹ ,,
30 ,, 8 Dec	, ,	Patent Shaft & Axle- tree Co. (Limited). Thomas Turton & Sons	50 pairs waggon wheels and axles. 200 waggon bearing springs			16 13 2 0 11 0	833 0.0	33 ² 4 4 II 3	20 19 6	13 10 10	900 12 . 8		18 0 3	23 "
14 ,,	·, · · · · · · · · · · · · · · · · ·	Patent Shaft & Axletree Co. (Limited).	50 pairs waggon wheels and			0 II 0 16 13 2	110 0 0 833 0 0	4 11 4	2 16 6 20 19 6	2 1 10	119 9 8		0 11 114 18 0 3	2 ,, 9 April.
		Hadfield's Steel Foun- dry Co. Tangyes (Limited)	20 pairs tram wheels and axles. 10 engines with pumps and		•••••	6 17 6	137 10 0	38 10 0	3 15 6	1 14 0	181 9 6		9 1 6	7 Mar.
6, & 27 Dec.		Hadfield's Steel Foun-	boilers. 20 pairs tram wheels and	{	,,,,,,,,,	6 17 6	137 10 0	55 7 ² 40 0 8	3 15 6	28 12 3	183 0 6		9 3 0	2 May. 23 Mar.
30 ,,	,,	dry Co. Samuel Osborn & Co.	axles. 100 sets elliptical bearing springs.			3 2 6	312 10 0	32 3 1	8 2 8	4 12 5	357 8 2		3 11 6	23 "
21 ,,	Allanshaw Henry A. Litchfield	Sir Joseph Whitworth & Co. Burnham, Parry, & Williams, & Co.	100 lengths shaftings complete 2 motors			12 5 0 1160 0 0	1225 O O 2320 O O	37 6 2 137 1 1	30 15 6 59 4 9	16 7 9 7 5 6	1309 9 5 2523 II 4		13 1 11 1261 15 8	2 May. 9 ,,
1883.	Altany	Patent Shaft & Axletree Co. (Limited).	50 pairs waggon wheels and axles.			16 13 2	833 0 0	33 2 4	20 19 6	13 10 10	900 12 8		18 0 3	11 "·
8 ,,	,,	Thomas Turton & Sons Patent Shaft & Axle- tree Co. (Limited).	50 ,, ,, 350 waggon bearing springs 50 pairs waggon wheels and axles.	••••••	•••••	16 13 2 0 11 0 16 13 2	833 0 0 192 10 0 833 0 0	7 19 9	20 19 6 4 19 3 20 19 6	13 10 9 3 13 7 13 10 10	900 12' 7 209 2 7 900 12 8		18 0 3 0 11 114 18 0 3	ii " ii June.
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No. 6—continued—Return of Miscellaneous Articles imported for the Great Southern and Western Lines during 1883.

Date of Invoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total Cost.	Cost per Ton.	Cost each.	Date of Arrival.
1883.	:			T c. q. lbs.	£ s. •d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	1883.
18 Jan	Ellora	Patent Shaft & Axle- tree Co. (Limited).	50 pairs waggon wheels			16 13 2	833 0 0	33 ² 4	20 19 6	13 10 10	900 12 8		18 o 3	11 June.
17 ,, 22 ,,	Altear	Colbeck Brothers North British Rubber	800 yds. carriage cloth 500 carriage door stops			0 7 03	282 15 o 3 15 o	· / /		2 14 4	293 11 3	i	0 7 4	11 Мау.
1882. 27 Nov 1883.	j,	Co. (Limited). Tangye's (Limited).	2 10-ton accident cranes			375 0 0	750 0 0	29 16 11	• • • • • • • • • • • • • • • • • • •	0 0 9	4 II I 800 18 8	•••••		"
3 Jan	Marsala	Hadfield's Steel Foundry Co.	40 pairs tram wheels and axles.			6 14 3	268 10 0	80 1 3	7 7 8	3 8 0	359 6 11		404 19 4 • 8 19 8	9 April.
²⁵ ,,	Iinberhorne	George Spencer & Co. Patent Shaft & Axle-	300 cylinder-springs 50 pair waggon-wheels and			o II 9	176 5 0	0 17 1	481	1 15 10	183 6 o		0 I2 2½	
27 " .î.	" "	tree Co. (Limited).	axles.			16 13 2 16 13 2	833 o o	33 2 4	20,19 6	13 10 10	900 12 8		18 0 3	25 "
30 ,, 3 F eb	Ascalon	Hyde, Archer, & Co Patent Shaft & Axle-	353 yds. vellum 50 pairs waggon wheels			0 1 3½ 16 13 2	22 18 11 833 0 0	33 ² 4 0 10 6 171 17 9	20 19 6 0 14 5 22 2 11	13 10 10 0 4 4 12 12 7	900 12 8		18 0 3 0 1 4½	²⁵ ,,
26 Jan	· • • • • • • • • • • • • • • • • • • •	tree Co. (Limited). Hadfields Steel Foundry Co.				6 14 3	201 7 6	42 0 8	5 7 5	2 10 4	251 5 11		20 15 10 8 7 6	30 April.
26 ,, 29 ,,	Salamis	Henry Carr	axles. 2,000 axle-box lubricators 700 vulcanized Ir. springs			⊮ pair. 0 1 3½	129 12 0	0 13 8	3 7 9	151	134 18 6		0 1 4 4	30 ,, 11 May.
15 ,, 3 Feb	Marsala	P. & W. MacLellan Hadfields Steel Foundry Co.	24 patent door-locks and plates 30 pairs tram-wheels & axles			0 19 11 2 0 7 11 2 6 14 3	699 II 0 9 IO 6 20I 7 6	2 0 6 I I 0	0 7 9	6 19 10 0 2 1	726 4 I		I 0 9	11 ,, 9 April.
20 "	Zealandia	Williams.	4 motors			1160 0 0	201 7 6 4640 0 0	42 2 7 602 17 6	5 7 5 672 13 0	2 10 7 14 10 11	251 8 I 5930 I 5		8 7 7 1482 10 4	10 May. 5 April.
20 ,,	Wodan	H. Statham & Co Patent Shaft & Axle- tree Co.	1,000 vulcanized I.r. springs 50 pairs waggon wheels and axles.			1 3 4 ⁸ 4 17 10 0	1170 0 0 875 0 0	12 12 0 171 17 9	29 II 0 23 3 II	10 9 4	1222 12 4 1083 1 0		1 4 $5\frac{1}{2}$ 21 13 $2\frac{1}{2}$	8 May. 8 ,,
24 ,,	,,	Hadfield Steel Foundry Co.	20 pairs tram wheels and axles.			6 14 3	134 5 0	28 o 5	3 13 11	1 15 3	167 14 7		8 7 83	8 ,
28 ,, 20 & 27 Feb.	,,	Brown, Bayley, Dixon,	50 leather pouches			0 9 ·3 0 10 54	23 2 6 365 6 3	п 1 б 36 5 5	0 17 6	0 3 II 6 I5 4	25 4 II 417 18 10		0 10 1	8 ,,
10 Feb	Glengoil	& Co. (Limited). Hadfields Steel Foundry Co.	34 pairs tram wheels and axles.			6 i4 3	228 4 6	47 10 10	6 0 10	2 17 4	284 13 6		8 7 51	8 ,,
8 "	,,		50 pairs waggon wheels and axles.			17 10 0	875 0 0	171 17 8	23 3 11	12 19 4	1083 0 11			10 ,,
14 ,, 20 Mar	Sorrento	,, ,, ·	50 ,, ,,	•••••	•••••	17 10 0		171 17 8 171 17 9	23 3 11	12 19 4	1083 0 11 1084 0 6			10 "
17 ;,	,,	(Limited).	10 pairs tram wheels and axles.			6 17 9	68 17 6	12 15 9	2 0 5	0 19 4	84 13 0			²⁵ ,,
17 ,,), ······		2,000 yds. lace pasting 3,000 ,, seaming	······		$\begin{array}{cccc} 0 & 0 & 2\frac{1}{2} \\ 0 & 0 & 2\frac{1}{4} \end{array}$	20 16 8 28 2 6	0 13 4	0 12 5 0 16 0	0 4 5 0 6 2	22 6 10 30 2 8			²⁵ ,,
.			;											-5 33 .

No. 6-continued-Return of Miscellaneous Articles imported for the Great Southern and Western Lines during 1883.

Date of Invoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total Cost.	Cost per Ton.	Cost each.	Date of Arrival.
1883.	. :			T., c. q. 1bs,	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	1883.
17 Mar 5 ,,	Samuel Plimsoll	Owen & Dysoni	400 gross tufts	••••	•••••	1/9 \$\pross. 17 15 0 17 10 0	35 0 0 532 10 0 560 0 0	19 15 10	13 9 3	0 7 10 8 8 1 8 18 6	37 9 9 574 3 ² 604 5 3		1/10½ \$\therefore\text{gross} \\ 19 \ 2 \ 9\frac{1}{4} \\ 18 \ 17 \ 8	17 June.
29 "	l	tree Co. Benthers' Patent Rail-	axles. 200 axle-boxes	· · · · · · · · · · · · · · · · · · ·		163	262 10 0	6 5 4	6 14 3	3 18 5	279 8 0		1 7 114	"
30 " .	John Elder	way Axle-box Co. Patent Shaft & Axle- tree Co.	143 pairs waggon wheels		••••	17 10 0	2502 10 0	1 '	-	.,			21 10 5½	1 . 1
20 ,, .	Sorrento	Owen & Dyson Hadfields Steel Foun-	20 pairs wheels and axles		*********	17.15 0 17.15 0 6.14 3	355 0 0 887 10 0 80 11 0	171 17 9	23 11 1	14 0 8	435 15 1 1096 19 6		21 15 9 21 18 9 ¹ / ₂ 8 7 11 ¹ / ₂	
8 Feb		dry Co. Brown, Bayley, Dixon,	axles. 100 waggon bearing-springs	••••••		0 10 54	52 3 9	5 4 9	1,01	0191	59 15 11		0 11 11 2	10 "
17 ,, 13 April 10 Feb.	Kelverdale		200 ,, ,, 6 velocipedes	o 4 3 20	75 0 0	0 10 5 ¹ / ₄	104 7 6 44 17 8	1	2 15 2 0 12 3	1 19 0 0 12 1 0 4 2	119 9 4 52 1 11 19 16 7	80 9 3	0 11 11 ¹ / ₄ 8 13 8	
28 ,, 6 Mar.	Orontes	(Limited). ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	354 dozen files Patent packing	0 18 0 11	·	£1/5/1½ \$ doz. 5 10 0	444 15 0 65 3 0 16 10 0 875 0 0	0 0 10 6	11 5 4 1 1 15 6 0 11 3 23 2 4	4 12 8 0 15 4 0 3 8 13 17 11	68 15 2 17-15 5	75 19 8	£1/6/1} \$ doz. 5 18 6 21 13 6	12 ,,
3 " · · · · · · · · · · · · · · · · · ·	, "	tree Co. Owen & Dyson	50 pairs waggon wheels and axles. 50 ,, ,, 20 pairs wheels and axles			17 10 0 17 15 0	875 0 0	0 171 17 8	23 2 5	13 17 11	1083 18 C		21 13 6 21 18 10 1 7 11	25 ,, 25 ,, 14 Aug.
31 ,,	Morialta	Benthers' Patent Rail- way Axle-box Co.	30 pairs wheels and axles	**********	•••••	1 6 3	532 10	0 103 2 7	14 1 6	9 11 9	650 5 10		21 19 6	21 June.
30 ,, 3 & 6 Apr 10 & 13 ,, 16 April	il "	,, ,,	70 ,, ,, 50 , ,, ,,			17 15 0 17 15 0 17 15 0 17 10 0	887 10 0	0 240 12 0 0 171 17 8 0 41 5 0 0 429 14 2	5 17 0	16 I O	1538 7 10 1098 17 11 261 12 1 2714 11 0		21 19 6 21 19 6 21 16 0 21 14 4	21 ,,
4 ,,		tree Co. (Limited). Benthers' Patent Rail-	and axles.	**********	••••	1 6 3	131 5	3 3	3 8 7	1 19 4		1		31 July.
4 ,, 10&18A1 18 April	John Duthie	Ransomes & Rapier Vickers, Sons, & Co Patent Woollen Cloth Co	6 bogie goods engines & tenders 2 engine turntables 200 cast-steel tyres 336 yds. woollen felt 94 c. s. engine and tender			2790 0 0 395 0 0 9 19 8 0 1 9 9 3 5	790 0 1996 18	0 0 71 9 4 4 53 16 9 0 10 6 7 23 4 1	٠ -	28 0 5	31 18 16	7	447 15 I 10 12 10 0 I 10	1 ,,
19 ,,			tyres.	Į		5 12 0	531 17 1	17 12 1	13 6 5	8.08	570 17 10		6 0 2	зт "
1			,			<u> </u>						<u> </u>		

No. 6—continued—RETURN	of	MISCELLANEOUS	ARTICLES import	ed for	r the	Great	Southern and	Western	Lines	durine	1883.

	Date of Invoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total Cost.	Cost per Ton.	Cost each.	Date of Arrival:
	1883.		, , ,		T. c. q. lbs.	£ s. d.	£ s. d.	£ s. d	. £ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	1883.
1188	23&27 A pr.	Sorata	Owen & Dyson	68 pairs waggon wheels and axles.		·	17 15 0	1207 0	233 15 3	32 0 3	16 6	1489 1 0		21 17 11½	21 June.
	26 April	, n	Patent Shaft & Axletree Co.	100 ,, ,,	••••••	·	17 10 0	1750 0 0	343 15 4	46 4 9	23 15 4	2163 15 5		21 12 9	21 ,,
ଚ	19	Chimborazo	Henry Carr				17 10 0 0 1 3	437 10 6 63 18 6	0 10 6	1 14 11	0 14 3		••••••	21 10 7 0 1 4	8 " 31 July.
	23 May	Liguria	Owen & Dyson	and axles.	•••••	·	17 15 0	355 0 0	1 ,	9 10 10		7.3.7		21 6 0	16 ,,
	26 " 10&17 May	Catania	Patent Shaft & Axle- tree Co. John Brown & Co	75 " " " 1,000 cast-steel volute	*************		17 10 0	231 5 0	1	34 ¹ 5 3		", '	•••••		
	1,9,&11 ,,	,,	Owen & Dyson	springs.	************		0 4 7½ 17 15 0	231 5 C		37 10 5	3 ¹⁰ 7	252 7 3 1716 8 11	~	-	20 ,,
	14 Mar	*	Patent Shaft & Axle-	and axles.	••••		17 10 0	875 0 0		23 2 2	12 19 9	1058 8 6		21 3 4	20 ,,
	9 & 10 May 30 April	Cardigan Castle	tree Co. ,, Beyer, Peacock, & Co.	150 ,, ,,	••••	•••	17 10 0	2625 0 0	7 77 - 7 7	69 6 5	38 18 10		•••••	21 3 4	20 ,,
		_		6 complete sets engine- bearing springs. 12 laminated springs	**********		2 10 0	195 0 0 30 0 0	3 9 7	4 18 6 0 15 0	2 6 2	205 14 3	•••••	۱ - ۱	20 Aug.
	30 ,,	,,	,, ···	12 slide-valves, finished			5 0 0	60 0 0	1	1 10 0	0 7 4	31 12 10 63 6 2		2 12 9 5 5 6	20 ,,
	30 ,,	",	,,	6 valve spindles			3 0 0	18 o c		0 9 0	0 4 0			3 3 3	20 ,,
	30 ,,)) ••••	,,	6 valve spindle glands, finished.			2 0 0	12 0 0	0 4 2	0 6 0	0 2 8	12 12 10		2 2 2	20 ,,
	30 ,,	,,	" …				10 0 0	6000	1	1 10 0	0 15 2	63 6 2	i	10 11 0	20 ,,
	30 "	,,	,	6 piston rods and glands, unfinished.			2 0 0	12 0 0	1 7 7	060				2 2 2	20 ,,
	30 "		, ,, ,,	3 sets side rod brasses, in the rough. 3 sets connecting rod	•••••		10 13 4	32 0 0		0 16 0	0 7 6	33 14 8	•••••		20 ,,
	30 "	», ···	» ···	brasses, in the rough. 3 sets axle-box brasses, in	,		5 13 4	80 0 0		2 0 0	0 3 11	17 18 4 84 5 2	••••••		20 ,,
	30 "	,,	,,	the rough.			81 13 4	245 0 0		6 3 6	3 1 10				20 ,,
	30 "	, ,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	turned. 1 set eccentric sheaves,			12 0 0	12 0 0		0 6 0	0 2 8	12 12 10			20 ,,
	30 "	" …	,	finished. 4 engine and 4 tender buffers.			7 10 0	30 0 0	0 10 6	0 15 0	o 7 4	31 12 10		7 18 21	20 ,,
	30 "	,,	,,	6 draw-bars for coupling engine and tenders.			2 0 0	12 0 0	0 4 2	060	0 2 8	12 12 10	X	2 2 2	20 ,,
	30 "	,,		6 buffers for front end of tender.			ı 68	8 o o	0 2 9	0 4 0	0 1 10	8 8 7		8 1	20 ,,
														•	

No. 6—continued—Return of Miscellaneous Articles imported for the Great Southern and Western Lines during 1883.

*Date of Invoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total Cost.	Cost per Ton.	Cost each.	Date of Arrival.
1883.				T. c. q. lbs.	£ s. d.	£ s. d.	£ sd.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	1883.
30'April	Cardigan Castle	Beyer, Peacock, & Co.	6 complete sets of tender- bearing springs.			16 13 4	100 0 0	1 15 0	2 10 6	18о	105 13 6		17 12 3	20 Aug.
30, " …	· ,, ···	· "	3 sets tender tires, bored but not turned.	•••••	•••••	. 53 6 8	160 0 0	2 16 6	4 0 2	2 6 5	169 3 1	• • • •	56 7 3	20 ,,
30 ,,	, ,,	, ,,	2 radial arms for Bogies, with cotter complete.		•••	10 0 0	20 0 0	070	0 10 0	0 4 8	21 1 8	•••••	10 10 10	20 ,,
30 ,,	, ,,	• • • • • • • • • • • • • • • • • • • •	4 steam chest covers, finished 6 front cylinder covers, ,,			3 10 0	14 0 0 18 0 0	1	0 7 0 0 0 0 0	0 2 9 0 4 0 0 2 8	14 14 7 18 19 3 12 12 10		3 13 8 3 3 3 2 2 2	20 ,,
30 ,,	,,	" "	2 back cylinder covers, ,, 3 sets of slide blocks, ,, 1 steam brake cylinder and	********		4 0 0	12 0 0 12 0 0 20 0 0		060	0 2 8	12 12 10	********	4 4 3	20 ,,
30 ,,	,,		piston, complete.	••••		10 0 0	10 0 0	0 3 6	0 5 0	0 2 4	10 10 10		10 10 10	20 ,,
30 ,,	, ,,	••	1 . 1	••••••		2 2 0 2 IO 0	6 6 o 7 10 o	0 2 2 0 2 8	0 3 2	0 I 4 0 O II	6 12 8 7 ¹ 7 4		2 4 3 2 12 5	20 ,, 20 ,,
30 ,,	,, ,,	» ···	2 water-gauge columns, finished 2 front draw-hooks for engine	}		3 0 0	5 0 0 12 0 0	0 1 11	0 2 9	0 1 3 0 2 8	5 5 11	!	2 12 11 3 3 2½	20 ,,
30 ")), ···	,, ,,	2 blast pipes, finished 2 blower cocks, finished	,		5 5 0	10 10 0	o 3 8	0 5 3 0 I 9	0 2 5	11 i 4 3 13 5		5 10 8 1 16 8½	20 ,,
30 ,,	Assaye	"," … Hird, Dawson, & Hardy	ı tender brake shaft	 o 15 o o	22 3 8	10 0 0	10 0 0 16 12 9	0 3 6	0 5 0	0 2 4	10 10 10 17 15 11	23 14 7	10 10 10	20 ,, 3 Sept.
²⁷ May 8 ,,	,,, ,,			6 1 3 0 5 10 1 23		 1 7 6	109 18 9 124 5 3 275 0 0	3 13 6 4 4 3 5 14 8	2 17 3 3 5 1 7 0 6	1 18 8 1 19 8 3 18 6		19 9 0 24 4 2	 1 9 2	3 ,, 3 ,, 3 ,,
17 ,, 18 ,,	,,	way Axle-box Co. Charles Churchill & Co Sharp, Stewart, & Co.	2 sets solid reamers			43 16 0 16 0 0	87 12 0 16 0 0	0 10 6 0 3 2	2 6 9 0 8 6	0 19 11	91 9 2 16 17 5	*********	45 14 7 16 17 5	3 "
18 ,,	"	(Limited).	machine. I portable drilling machine			70 0 0	70 0 0	0 13 7	1 17 6	1 6 10	73 17 11	l	73 17 11	3 "
18° ,,	,,	Henry Carr	r double head stock drilling machine. 1,000 axle-box lubricators			305 0 0 0 1 3½	305 0 0 64 10 0	5 ¹ 3 4	7 15 6	0 13 9	3 ² 1 7 9 6		3 ² 7 9 0 1 4	3 "
12 ,,	,,	Howell & Co	8,000 steel boiler tube ferrules.			£15 \$ 1000	120 0 0	0 11 8	3 3 0	ı 5 6	125 0 2		15/12/6 \$ 1000	3 "
8',, 15 ,,	Cardigan Castle Pathan	Ransomes & Rapier M'Kenzie & Holland Glenboig Union Fire-	ı engine turntable Interlocking apparatus 181,110 fire-bricks	••••••		395 0 0 1760 0 0 57/3₩ 1000	395 0 0 1760 0 0 518 18 10		10 0 6 44 3 0 20 18 5	7 I 7 23 0 9 68 I 7	447 18 2 1871 14 9 1345 3 7		447 18 2 1871 14 9 7/8/6½ \$ 1000	20 Aug.
22 ,,	,,	clay Čo.	16 casks fire-clay			0 12 6½	10 0 8	9 4 9	0 12 7	0 18 0	20 16 0		1 6 o	9 "
31 "	Candida	Patent Shaft & Axletree Co.	75 prs. waggon wheels and axles.	•••••••	·······	17 10 0	1312 10 0	49 11 4	32 19 3	20 17 11	1415 18 6		18 17 17	r Sept.
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No. 6—continued—RETURN of MISCELLANEOUS ARTICLES imp	orted for the Great Southern and Western Lines during 1883	ŀ.
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Date of Invoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total Cost.	Cost per Ton.	Cost each.	Date of Arrival.
1883.				T. c. q. fbs.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	ŕ883.
2 June	Candida	The Broughton Copper Co. (Limited).	Seamless copper tubes	08016	112 14 6		45 17 11	0 10 , 6	1 5 11	0 10 3	48 4 7	118 9 2	••••	ı Sept.
28 May		George Spencer & Co.	1,000 cylinder springs 88 c.s. tyres for engines and tenders.		••••••	0 11 9 9 2 6½	5 ⁸ 7 10 0 803 4 0	- 1	14 16 9 20 2 7	6 14 7 11 5 6	611 18 2 856 5 1		0 12 3 9 14 7	ı " 3 »
11 & 30 May	,,	, ,	440 c.s. tyres for carriage and waggon.			4 18 1	2158 9 9	71 12 0	, 54 ^I 3	32 12 5	2316 15 5		5 5 3 ³	3 "
23 Mar	Nellie M. Slade	A. Davis	2 combined parlour and sleeping cars.			3696 2 0	7392 4 0	266 11 7	·	127 11 3	7786 6 10		3 ⁸ 93 3 5	29 "
30 May	Amalfi	,Owen & Dyson			;	17 15 0	532 10 0	88 7 11	14 3 3	7 17 0	642 18 2		21 8 1	21 Aug.
18 June	Hawkesbury	Patent Shaft & Axle- tree Co.	75 , ,, ,,			17 10 0	1312 10 0	49 12 1	32 18 3	23 19 5	1418 19 9		18 18 4½	28 Sept.
9 " … 9 " …	Phasis	Vickers, Sons, & Co. (Limited).	75 ,, ,, 30 c.s. tyres for engines and tenders.			17 10 0 8 14 4	1312 10 0 261 9 9	1 12 3	6 11 9	3 13 6	278 16 1		18 17 7 9 5 10	
9 " …	,,	, "´	115 c.s. tyres for carriage and waggon.			5 1 0	580 19 8	-> 3 1	14 12 5	8 15 10	623 13 3		5 8 5½	28 ,,
16 May	Durisdeer	Burnham, Parry, & Williams.	2 loco. boilers	• • • • • • • • • • • • • • • • • • • •		625 0 0	1250 0 0	93 18 10	37 10 0	1	1434 18 1		717 9 0½	
16 ,, 23 June	Hawkesbury	tree Co.	792 boiler tubes 50 prs. waggon wheels and axles.			0 7 11 1 17 10 0	315 o o 875 o o	47 9 10 33 1 5	9 9 0 21 18 6		.381 17 7 940 17 5		0 9 8 18 16 4	28 ,, 28 Sept.
26 "	,,	North British Rubber Co. (Limited).	350 I.r. draw springs			136	411 5 0	1 13 4	10 8 5	10 2 9	433 9 6		149	28 "
3 July	Dharwar		500 I.r. buffer springs	•		0 10 1½	253 2 6	0 15 11	6 9 6	2 10 7	262 18 6		0 10 6	30 ,,
9 June 11 July	Aikshaw Earl of Zetland	R. & W. Cameron & Co. Dubs & Co.	24 safety-valve springs 10 locomotive engines and tenders.		••••••	0 5 3 ³ 2745 0 0	6 7 7 27450 0 0		0 3 9 494 2 0	0 1 8 44 2 0	6 13 0 279 0 0		o 5 6½ 2795 4 5	9 Oct. 11 Dec.
20 & 30 June	Ellora	Patent Shaft & Axle- tree Co.		***************************************		17 10 0	1750 0 0	66 I 9	43 ¹ 7 9	27 ·17 7	1887 17 1		18 17 7	11 Oct.
9 J uly	,,		550 I.r. draw springs			136	646 5 0	2 12 3	16 6 I	6 8 10	671 12 2		1 4 5	11 "
26 June	,,	Owen & Dyson	20 prs. waggon wheels and axles.	•••••		17 15 0	355 o o	13 3 11	906	5 12 7	382 17 0		19 2 10	11 ,,
23 Feb	Wodan	Gutta Percha and	24 square case repeaters	••••••		4 0 0	96 o o	1 1 0	060	0 16 2	98 3 2		4 1 9	8 May.
18 July	Dallam Tower	Telegraph Works. Patent Shaft and Axletree Co.	44 pairs waggon wheels and axles.	•••		£17 10s. per pair.	770 0 0 ·	28 17 11	19 8 0	14 19 2	833 5 1		18 18 9	ı Nov.
	;								•				,	

No. 6—continued—Return of Miscellaneous Articles imported for the Great Southern and Western Lines during 1883.

Date of Invoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	- Total cost.	Cost · per Ton.	Cost each.	Date of Arrival.
1883.				T. c. q. lbs.	£ s. ∵d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	1883.
12 July	Dallam Tower	Glen & Ross	2 3 cwt. double acting steam hammers.		<i>:::</i>	95 0 0	190 0 0	12 0 8	4 19 0	2 19 8	209 19 4	4i	104 19 8	1 Nov.
12 ,,	Essex	George Salter & Co	300 nests spiral bearing			120 0 0 17/9 per nest	120 0 0 266 5 0	J		1 10 9 3 13 4	132 15 0 287 4 7	,	132 15 0 0 19 1 ³	. 1 ,; 11 Oct.
27 "	Gulf of Suez	(Limited.)	springs. 1000 steel volute buffer springs.	•••••		0 4 7½	231 5 0	13 2 4	6 г 6	3 12 6	254 1 4		051	9 "
27 ,,	,,	& Co. (Limited.)			•••••	,0,10 2	127 1 8	1 , 1	3 9 5	2 7 10	' '		0 11 5½	9 "
2 Aug 25 July	Star of India	George Salter & Co Charles Cammell & Co.	100 nests spiral bearing springs 500 volute buffer springs	•••••	•••••	0 17 9	88 15 0	3	2 10 4	1 4 3	96 5 8		0 19 3	9 "
8 Aug	Sikh	John Brown & Co. (Limited.)	100 carriage bearing springs	••••••	•••••••	0 7 0	175 0 0	14 13 5 9 3 2	4 10 6 3 1 7	2 II 7 2 2 4	196 15 6 125 12 1		0 7 10½ 1 5 1½	16 Nov. 14 Oct.
14 ,,	Marsala	& Co. (Limited.)		************		0 10 2	254 3 [.] 4	20 16 6	6 14 7	4 13 9	286 8 2		. O II 5½	21 "
8 "	Abergeldie	(Limited.)	1000 steel volute buffer springs. 81 pairs waggon wheels	. ,		0 4 7\f	231 5 0 1.417 10 0	12 1 6	6 1 6	3 12 5	253 0 5 1,528 6 5		0 5 1	21 "
24 July	Cynosure	tree Co. M'Kenzie & Holland	and axles. Interlocking apparatus		••••••	pair.	39 0 0	33 4	35 11 9	0 18 11		••••	18 17 44 41 15 7	10 Dec.
20 Aug	Abergeldie	Thomas Turton & Sons	bearing springs.		•••••	3 3 0	315 0 0	10 5 9	8 0 6	4 19 0	338 5 3		3 7 8	10 ,,
31 July 13 Aug	,,	Craven Brothers	Key steel	5 6 2 20	25 0 0	15 0 0 8 10 0	133 7 0 45 0 0 25 10 0	0 6 9	3 9 8	0 9 9	47 I O	26 13 11		10 ,,
21 "	"· ······	George Salter & Co	200 nests spiral bearing springs.			17/9 per nest	177 10 0	5 0 3	0 13 9 4 11 9	0 5 9 2 13 0	26 13 3 189 15 0		8 17 9 0 18 113	10 ,,
20 ,,	Rialto	,,	28-în. swing jib water cranes 27-in. standard , 1,000 steel volute buffer			55 0 0 28 0 0	110 0 0 56 0 0	3 19 7	2 17 0	2 I 7 I 4 0	119 9 10 62 12 7		31 6 3 1	14 ,, 14 ,,
Ť	Brilliant	· (Limited.)	springs. 50 waggon wheels and			0 4 7 2 £17 10s. per	231 5 0 875 0 0	13 1 7 33 2 4	6 I 6	3 12 4 13 19 0	254 0 5 944 I 10		0 5 1 18 17 7½	
28 ,,	,,	tree Co. William Allday & Sons	axles.			pair. 8 13 6	26 0 6	I 2 0	0 13 7	0 9 9	28 5 10		9 8 7	14 ,,
28 ,, 29 ,, 28 ,,	» ········	,,	346x8 ,, 946x6 grindstones 946x8 ,,		•••••	3 14 0	33 18 9 33 6 0	3 11 7	0 17 5	0 11 3	36 14 6 38 18 9		12 4 10 4 6 6	14 ,, 14 ,,
13 ,,	Pericles	John B. Edmondson Thomas Turton & Sons	72 ticket dating presses 50 nests elliptical springs			4 4 0 1 16 1 3 3 0	37 16 0 129 19 3 157 10 0	3 11 9 0 11 10 5 2 11	1 0 2 3 7 6 4 1 9	1 4 7 2 13 9 2 9 5	43 12 6 136 12 4 160 4 1		4 16 11 : 1 17 11 4 1 3 7 8 (10 ,
10 ,	,,		1,000 steel volute buffer springs.			0 4 71	231 5 0	8 12 1	5 18 6	3 17 3	249 12 10	,		²⁵ ,,
		·.								.		-	,	

No. 6-continued-Return of Mis	SCELLANEOUS ARTICLES imported for the	Great Southern and Western	Lines during 1883.
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Date : of Invoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total cost.	Cost per Ton.	Cost each.	Date of Arrival.
1883.		•		T. c. q. lbs.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	1883.
7 Sept 31 Aug	North	Carriage Iron Co.	5 branch line of shafts 200 waggon axle-boxes and brasses.			310 0 0	1550 0 0 197 10 0	1 1. 9 7	38 18 o 5 1 9	25 17 8 3 6 9	1660 19 3 · 212 4 11	•••	332 3 10 1 1 2½	24 Dec. 24 "
5 Sept	,,	(Limited.) George Salter & Co	100 nests spiral bearing springs.			17/9 per nest	88 15 0	2 10 3	2 7 2	1 6 1	94 18 6		0 18 113	24 "
5	" 	Patent Shaft and Axletree Co.	50 pairs waggon wheels and axles.		••••••	17 10 0	875 0 0	33 2 4	22 0 6	13 19 0	944 1,10		18 17 7½	24 ,,
31 Aug	,,	Thomas Turton & Sons	springs.	**********		3 3 0	157 10 0	5 2 11	4 ¹ 7	2 9 5	169 3 11		3 7 8	24 ,,
3 Sept	,,	John Brown & Co Brown, Bayley, Dixon, & Co. (Limited.)	1,000 volute buffer springs 250 waggon springs		,	0 4 7½ 0 10 2	231 5 0 127 1 8		5 18 7 3 6 6	3 ¹ 7 3 2 10 7	249 13 10 139 15 10		0 5 0	24 ,, 24 ,,
5 " …	· "		40 11-plate brake-van bear- ing springs.			0 15 0	30 0 0	1 6 11	0 16 0	0 10(10	32 13 9		0 16 4	24 "
5 " … 5 " …	,, Midlothian	,,, Patent Shaft and Axle-	40 9-plate ,, ,, 40 14-plate ,, ,, 50 pairs carriage wheels			0 13 0 0 17 9 19 18 6	26 0 0 35 10 0 996 5 0	1 11 11	0 14 0 0 18 9 25 1 2		28 7 3 38 13 1 1081 0 10		0 14 ,2 0 19 4 21 12 5	24 ,, 24 ,, 25 ,,
12 ,, 22 ,,	, ,, ,,	tree Co. Henry Carr	and axles. 2,000 axle-box lubricators			0 I 3	128 0 0	0 12 8	3 7 0	r 8 8	133 8 4		0 1 4	25 ,,
25 " 27 July .∴	Aberdeen	Landore Siemens Steel Co. (Limited.) Hunt & Sacre	8 frame plates			330 0 0	36 0 0		1 4 0 8 8 0				4 ¹⁹ 7	24 Nov.
31 Mar	Cynosure Procida	Hadfields Steel Foundry Co.				6 14 3	134 5 0	25 11 6	3 13 1	1 16 11	165 6 6	.1	8 5 4	21 June.
28 ,, 6 April	,, ·······	Charles Cammell & Co. (Limited.)	14 pairs ,, ,, 40 ,, ,,	***********		6 14 3 6 17 9	93 19 6 275 10 0	1 -/1	2 9 II 7 7 9	1 5 10 3 17 5		•••	8 5 3	21 ,,
28, "	Sorata	,,	20 ,, ,, ,, 30 ,, ,, ,,	,		6 17 9	137 15 0 206 12 6	38 7 2	3 14 4 5 11 6	1 12 S 2 7 10	252 19 0		8 8 10 1 8 8 7 1	
15 Mar		H. Statham & Co	500 sets rubber bearing springs.			0 19 6	487 10 0	1	12 6 9	5 11 0			I 0 3	17 ,,
10 April	}	Co. (Limited.)	500 sets Ir. bearing springs		******	0 10 9	268 15 0 46 5 0	0 18 10	,	3 1 5			0 11 2	1 Aug.
31 May 31 Aug	Pathan City of New York	Burnham, Parry, Williams, & Co.		***********	*******	0 9 3	2019 15		_	4 5 10	2791 12 9		2791 12 9	23 Oct.
16 May	,,	,, ,,	3 copper fire boxes			87 1 0	261 3 I 25 18 9	1 15 5		0 0 11	31 9 4		102 3 2	July.
10 April 22 Oct	Kelverdale City of Sydney		4 motors	••••••		13 11 5 1210 0 0	570 0 2 4840 0 0	1			581 3 10 6169 12 2		13 17 8 1542 8 0	' /''
			Total				130878 17 6	7778 3 9	3111 7 11	1804 1 11	143564 9 3	3		

No. 6—continued—Return of Miscellaneous Articles imported for the Great Northern Railway Line during 1883.

		1	·	1	T	1	<u> </u>	1	1	-	· · · · · · · · ·	,		· · · · · · · · · · · · · · · · · · ·
Date of Invoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total Cost.	Cost per Ton.	Cost each.	Date of Arrival.
1882.		,		T. c. q. lb.	£ s. d	. £ s. d.	£ s. d	£ s. d.	£ s. d.	£ s. d.				00
7 Aug	. Ione	Hird, Dawson, & Hardy	3 Lowmoor plates	I 3 I 4	37 15 8	3		8 011 7	o 19 3	o 8 7	£ s. d	£ s. d.	£ s. d.	1883.
7 ,,	,,	, ,	2 ,,	0 15 0 8	34 17 2	2	26 5	1 ' 1	0 19 3	0 4 9		39 4 9 36 9 3½		23 Jan.
7. "	,,	,,	20 ,,	5 17 3 2	31 18 7	7	188 0	3 17 7	4 18 10	1 16 8		36 9 3½ 33 15 8		23 ,,
7 ,,	,,		2 , , , , , , , , , , , , , , , , , , ,	0 8 0 6	26 1 7		10 10	3 0 7 9	0 6 8	0 2 0		28 6 2	*********	23 ,,
7 Sept	_ ,,	Taylor Brothers	3 bars T iron	0 9 2 14	19 14 10		9 10 6	0 10 6	0 7 9	0 2 0		21 6 4	*******	23 "
2 Nov	Tamerlane	Tangye Brothers	72 5" I. r. seats, and 48 bucket leathers.		•••	0 2 34	13 13 0	0 10 6	0 9 10	0 2 6	14 15 10		0 2 5½	
8 ,,	,,	Howell & Co	8,000 steel ferrules			£15 per 1000	120 0 0	0 13 6	3 3 0	1 2 5	124 18 11		15/12/4} 🕸 1000	13 ,,
2 _,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Sharp, Stewart, & Co.	8 No. 9 injectors			15 0 0	120 0 0	0 10 6	3 3 0	1 2 4	124 15 10	,	15 11 11	13 ,,
2 Dec 1883.	Star of Persia	Vickers, Sons, & Co	36 sets crossings	•••••••	····••	15 13 2	563 13 6	33 8 8	5 15 8	5 5 5	608 3 3		16 19 5 }	23 ,,
24 Jan	Bandeith	The Broughton Copper Co.	141 soft copper rods	2 0 0 21	75 0 0		150 14 1	1 9 3	3 18 4	180	157 9 8	78 7 53		25 May.
29 ,, 1882.	,,	Thos. Turton & Son	33 bundles best spring steel		22 10 0		54 4 10	1 2	1 7 1	0 10 2		24 2 24	•••••	²⁵ may.
15 Dec 1883.	33	Patent Woollen Cloth Co.	300 yards felt		•••••	0 6 41	95 8 c	2 1 7	0 3 0	0 17 10	98 10 5	•••	0 6 6	25 "
30 Jan	Wodan	Hyde, Archer, & Co	250 yards blue silk vellum			0 1 38	16 5 c	0 15 9	• 0 11 1	0 2 8	17 14 6	[0 1 5	8
3 Feb	,,		104½ yards French carpet		*******	0 2 54	12 15 0	1 11 6	0 12 4	0 2 3	15 1 1		0 I 5 0 2 10}	6 "
19 ,,	,,	G. D. Peters & Co	56 gross worsted tufts			1/9 per gross	4 18 0	1116	. 0 5 5	0 0 10	6 15 9		0 2 102	o ''
19 ,,	,,	,,	2,372 yards seaming and pasting lace.		•••••••	0 0 24	22 4 9	0 15 9	0 17 1	0 3 9	24 1 4		0 0 21	8 ,,
26 Jan	,,	James M'Ilwraith&Co	36 yards wax cloth			0 2 4	4 4 0	1116	0 8 1	0 0 10	6 4 5		0 2 51	8 .,
22 Feb	_ ,,	Henry Carr	6 gross oil lubricators		•••••	0 1 31/2	56 6 0	1 11 6	1 14 1	0 9 4	60 0 11		0 3 5½ 0 1, 4½	8
1 Mar	Jessie Renwick	Beyer, Peacock, & Co.	4 sets of bogie springs			37 10 0	150 0 0	2 7 9	3 18 0	1 7 10	157 13 7		39 8 5	17 July.
17 ,,	Sorrento	G. D. Peters & Co	51 yards blue carriage cloth			080	20 8 0	0 11 3	0 11 7	0 4 11	21 15 9		0 8 64	25 May.
17 ,,	Firth of D	Bowen Den l- & C	196 yards brown "		••••	076	73 IO O	1 2 7	2 1 4	0 17 7	77 II 6		0 7 11	25 ,,
25 April 4 May	Firth of Dornock Banco	Beyer, Peacock, & Co. Dubs & Co	4 goods engines and tenders		••••	2815 0 0	11260 0 0		202 13 7		11562 13 7		2890 13 44	10 Sept.
27 July	1		4 traffic passenger engines			2775 0 0	11100 0 0		199 16 0	100 0 0	11399 16 0		2849 19 0	10 ,, .
27 July	,,	TATOMATO DUNGEON	4 tube expanders 2 tube expanders		••••	3 19 10	15 19 3		0 7 11		16 7 2	••••	4 I 9½	10 ,,
11 May	Ranee	Beyer, Peacock, & Co.	4 goods engines and tenders	***********	••••	3 8 10 2815 0 0	6 17 9		0 3 6		7· I 3		3 10 71	10 ,,
17 _,,	Thomas S. Stowe		r set of solid reamers			20 11 0	11260 0 0 20 11 0	0 10 6	202 13 7	100 0 0	11562 13 7	I	2890 13 43	25 Oct.
4 June	,,	Tangye Brothers	3 patent pulley blocks		**********	6 7 8		0 10 6	0 13 3	0 4 1	21 18 10		21 18 10	II ,,
14 May	", …	The Union Engineer- ing Co.	ı patent blast fan			38 18 5.	19 3 0 38 18 5	2 16 0	I 2 5	0 3 5	20 9 5 43 3 8		6 16 5 ³ 43 3 8	11 ,,
27 Feb	Jessie Renwick	Vickers, Sons, & Co	42 cast steel tires	12 19 3 0	32 0 0	9 17 103	415 12 0	12 10 0	10 10 0	2 17 6	442 10 2	ا ۽ ۽ ا	70 70 95	To Tules
18 May	Thomas S. Stowe	Sharp, Stewart, & Co.	1 double-drilling machine	9 3 9	3~ 0 0	215 0 0	215 0 0	9 13 11	5 10 6	3 17 6	442 IO 3 232 4 6	34 3 5	10 10 85	17 July. 11 Oct.
27 July	Comardre		punching and shearing			280 0 0	280 0 0	19 3 2	0 3 0	2 12 4	301 18 6			27 Dec.
27 ,,	,,	,,	screw-cutting lathe			92 0 0	92 0 0	2 5 6	0 3 0	0 17 0	0, , ,			
11 ,,	,,		I No. 3 Eastwood shearing machine.			61 15 0	61 15 0	1 0 11	0 3 0	0 11 7	95 5 6 63 10 6		95 5 6 63 10 6	27 ,, 27 ,,
17 ,,	,,	Sharp, Stewart, & Co.	vertical drilling machine			76 o o	76 o o	2 11 0	0 3 0	0.74	70 8	,		
18 ,	Star of India	Gresham & Craven	I Holt's patent gas hearth	••••		35 0 0	35 0 0	0 14 3	0 3 0	0 14 3	79 8 3 36 4 0		79 8 3 36 4 0	²⁷ ,, ²³ Nov.
	<u> </u>						36653 6 2	110 4 4	661 3 о	328 6 6	37753 o o			

No. 6-continued-RETURN	\mathbf{of}	MISCELLANEOUS	Imports,	1882.
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Date of Invoice.	Ship.	From whom purchased.	Description.	Tonnage.	Cost per Ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total Cost.	Cost per Ton.	Cost each.	Date of Arrival.
} 			Indent for wrought	and cast Iro	nwork fo	r Bridge ov	er George's	River, 10	th July, 18	882.				
24 ,, 10 May 12 ,, 12 ,, 11 June 11 ,, 23 May	Sorrento Assaye Candida Cimba Duchess of Edinburgh Dallam Tower Cardigan Castle	Stockton Forge Co ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,	Cylinder segments Bolts, nuts, and washers Cylinder segments Bolts, nuts, and washers Cylinder segments Bolts, nuts, and washers Cylinder segments Bolts, nuts, and washers Cylinder segments Bolts, nuts, and washers Cylinder segments Cylinder segments Bolts, nuts, and washers Cylinder segments	T. c. q. lb. 248 3 0 0 6 7 0 27 62 6 2 0 233 17 2 0 3 18 3 1 156 3 1 0 2 1 0 18 196 16 0 0 2 8 2 0 107 16 3 0 2 18 2 0	£ s. d. 5 10 0 17 10 0 5 10 0 17 10 0 5 10 0 17 10 0 5 10 0 17 10 0 5 10 0 17 10 0 5 10 0		£ s. d. 1364 16 6 111 6 9 342 15 9 1286 6 3 68 18 3 858 17 11 36 0 4 1082 8 0 42 8 9 593 2 2 43 16 1 236 1 9	£ s. d. 322 8 10 8 5 4 77 2 7 289 16 7 4 18 4 193 5 9 2 14 9 243 3 0 3 13 0 133 4 11 3 6 0	£ s. d. 37 7 5 3 16 9 8 14 4 44 4 0 1 15 1 27 11 11 0 18 6 27 3 6 1 1 11 14 19 2 1 2 3 6 1 0	£ s. d. 49 19 5 1 0 8 12 10 11 35 8 6 1 6 2 31 8 11 0 13 5 40 12 7 0 16 10 16 6 6	44i 3 7 1655 15 4 76 17 10 1105 4 6 40 7 0 1393 7 1 48 0 6 757 12 9 48 17 6 303 18 1	7 3 0 19 10 6 7 1 6 7 1 7 19 10 6 7 1 6 19 12 1 7 1 7 19 16 1 7 0 6 19 11 0 7 1 7	£ s. d.	1883. 25 May. 25 ,, 3 Sept. 1 ,, 24 ,, 24 ,, 1 ,, 1 Nov. 1 ,, 20 Aug.
[1065 7 0 25	ļ	{		{				[———·		4
ļ.			Indent for wrought				ver Cook's	River, 10th	1 July, 188	32.	536 10 5	18 4 8 1		1 Sept.
12 May	Candida,	Stockton Forge Co	Cylinder segments Bolts, nuts, and washers	65 3 1 0 0 17 0 23	6 0 0	•••••	390 19 .6 13 2 5	I 22 4 I I 3 2		0 4 11	14 17 7	17 5 0		1 Sept.
			•	66 O I 23	••••		404 1 11	123 7 3	10 5 0	13 13 10	551 8 0			
			Indent for wrought a	nd cast Iron	work for	Bridge ove	er Murrumb	idgee, 12 I	February,	1883.	•	•		
23 July	Gulf of Suez	Stockton Forge Co	Cylinder segments					107 16 4	13 2 3	15 17 6	613 18 3	7 7 11] 9 Oct.
1	l	Tndo	l ant for wrought and cast	Tronwork f	or the Br	idge over R	iver Murray	, at Albur	y, 22nd M	arch, 1882	2.	•		•
1882. 11 Oct 11 ,, 31 ,, 8 Dec 85 ,, 1883. 2 April 3 ,, 16 ,, 16 ,,	Parramatta ,, Duchess of Argyle Nerbudda ,, Kenmore Windsor Castle Cynisca Arvonia	The Stockton Forge Co	Cylinder segments Bolts Cylinder segments Bolts Superstructure	46 9 0 25 0 8 3 0 4 12 0 6 75 11 0 0 75 14 1 0 0 12 2 15 104 5 1 0 122 14 2 0 108 16 3 0 105 14 1 18	5 15 0 18 0 0 18 0 0 5 15 0 5 15 0 5 18 0 0 14 0 0 14 0 0		267 3 0 7 17 6 82 17 0 434 8 3 435 6 11 11 7 5 1459 13 6 1718 3 0 1523 14 6	57 9 11 0 10 10 10 10 10 10 10 10 10 10 10 1	6 16 0 0 4 6 6 2 4 5 11 0 2 11 0 5 0 5 11 36 12 10 43 2 0 38 4 10 37 3 0 2 9 10	9 9 7/ 0 2 6 2 6 9 15 8 8 0 3 11 29 12 2 34 9 10 30 11 5 30 0 9	340 18 6 8 15 4 93 2 1 554 6 7 555 10 6 12 12 12 10 16 18 8 1700 0 3 1654 1 5	20 0 9 20 4 7 7 6 9 7 6 9 20 0 2 15 12 5 15 12 5 15 12 11		3 Jan. 3 " 5 " 29 Mar. 29 " 10 July. 10 " 13 " 31 " 31 "
			Carried forward	ļ					<u> </u>					<u> </u>

No. 6-continued-Return of Miscellaneous Imports, 1882.

Date of Invoice.	Ship.	From whom purchased.	Description	Tonnage.	Cost per ton.	Cost each.	Invoice Cost.	Freight.	English Charges.	Colonial Charges.	Total Cost.	Cost per ton.	Cost each.	Date of Arrival.
		Indent for	r wrought and cast Iron								tinued.			
1883. 12 May	Candida	. The Stockton Forge Co	Brought forward Wrought ironwork caps	T. c. q. lb.			£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	. 1883. 1 Sept.
12 ,,	,,	,,	and pilasters. Wrought ironwork cylinder bracings.	30 11 3 21	18 0 0	· · · · · · · · · · · · · · · · · · ·	550 14 10		13 17 1	9 15 4	611 19 9			I ,,
12 ,, 11 June	Cimba	33 · · · · · · · · · · · · · · · · · ·	Cast ironwork in pilasters Superstructure	51 9 0 0 38 3 3 14 6 4 1 0	9 10 0 9 10 0 20 0 0		488 15 6 362 16 10 124 5 0		12 5 5 9 3 5	12 6 1 9 2 8 2 1 8	428 8 5	11 4 6 11 4 4	••••••	I ,,
1882.	Euterpe	33	Rivets	0 2 1 11	18 0 0		2 2 3	0 3 4	3 3 1	0 1 1	¹ 37 3 3 ² 7 8	22 1 7 20 6 0	*********	24 ,,
11 "	,,)) · · · · · · · · · · · · · · · · · ·	Bolts and nuts and washers		5 15 0 25 0 0		410 16 6 I 2 4	88 8 5	0 0 7	0 0 7	524 5 7 I 4 7	7 6 9		6 ,,
}			} '	858 0 0 13			9593 2 10	 l-	241 9 2	220 0 6	11005 10 4			
0		Inde	nt for wrought and cast	Ironwork fo	or the Bri	idge over R	iver Macqua	rie, at Du	bbo, 25th	July, 1881				
18 ,, 28 Nov 13 Dec	Allanshaw,	Cochrane & Co		1 7 2 22	6 8 6 15 6 0 15 6 0 6 8 6		445 19 6 21 3 9 510 1 7 181 18 2	1 13 7	11 5 6 0 11 1 12 17 0 4 11 11	14 11 9 0 8 0 9 15 4 5 19 1	557 18 4 23 16 5 574 0 7 240 6 10			5 Feb. 5 ,, 2 May. 2 ,,
1883. 22 Feb	Woodan	» ···	Superstructure	15 5 1 18½ 11 2 2 2	15 6 o 10 16 o		233 12 10 120 3 2	40 14 2 29 13 0	6 7 I 3 5 7	4 4 5 2 13 3	284 18 6	18 13 2 14 0 0	********	8 ,, 8 ,,
	Procida)) ····	Ci. cylinders	17 16 2 14 0 0 3 23 34 14 2 23	6 8 6 21 16 0 15 6 0		114 11 4 1 0 10 531 9 0	47 10 0 0 2 6 81 4 8	3 2 4 0 0 8 13 19 11	3 12 4 0 0 3 11 18 2		9 9 4 25 7 8 18 7 9	*********	8 ,, . 8 ,, 21 June.
13 ,,	Glenfinart))))	Ci. bed plates Steel cotters and rollers	183 2 1 6½ 9 10 0 10 1 8 3 23	15 6 0 10 16 0 21 16 0		2801 13 4 102 12 11 31 11 3	250 I 0 12 I9 9 I I8 0	70 3 10 2 13 4 0 16 9	53 11 9 2 8 5 0 6 11	3175 9 11	17 6 10 12 14 2		2 July.
17 , 24 May	Illawarra Smyrna	.))))	Superstructure Steel cotters Superstructure	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	15 6 0 21 16 0 15 6 0		1766 19 6 1 10 11 241 3 10	0 I 3 2I IO 7	44 6 6 0 0 9 6 1 6	33 19 11 0 0 6 4 13 4	1977 18 5	17 2 6 23 10 9	••••••	31 ,, 3i ,, 29 Sept.
24 ,, 24 ,, 7 June	,,	,, ,,	Steel cotters and keys Superstructure	50 3 0 18 0 1 1 19 156 13 0 123	6 8 6 21 16 0 15 6 0		3 ²² 5 3 I 10 11 2396 16 7	67 16 0 0 2 0 220 10 5	8 3 3 0 0 9 60 0 11	10 10 7 0 0 7 45 19 3	408 15 1 1 14 3 2723 16 2	8 3 0	•••••	29 ,, 29 ,, 1 Oct.
7 July 7 July	Ellora)) · · · · · · · · · · · · · · · · · ·	Ci. caps and pilasters Superstructure	17 10 1 7	10 16 0 15 6 0 10 16 0	********	189 3 5 61 7 11 178 17 1	24 12 8 8 12 0 32 15 10	4 15 1 1 11 6 4 13 6	4 7 10 1 4 4	222 19 0	12 14 7	••••••	I ,,
10 Aug	Abergeldie)) · · · · · · · · · · · · · · · · · ·	Superstructure	8 9 0 11½ 34 9 2 17 5 14 0 14	15 6 0 10 16 0 6 8 6		170 17 1 129 7 3 372 8 3 36 13 4	16 10 0 63 2 9 10 9 0	3 5 II 9 7 8 0 18 7	4 3 2 2 11 5 8 12 11 1 3 11	220 9 7 15 1 14 7 453 11 7 49 4 10	17 18 10	*********	10 Dec.
		1	[:	330 10 2 5½			10794 1 11				12534 6 10			10 ,,

No. 7. RETURN of ROLLING STOCK on hand on Railways of New South Wales, 31st December, 1883.

	·				Lo	com	otiv	es.				Ī								Pa	sser	ger	Sto	ck.								T									Good	ds S	tock	:									
		Tan	k.	Pass	enge	er.	G	ood	s.	Traffic.				F	ìrst	Cla	ss.	C	omp	osite	e. S	Seco	nd C	lass.	.]	Van	3.	-	_			- -					Wa	gon	9.						v	ans.]			_	ssenger
1188—R	Name of Railway.	Suburban.	plood	Express Bogies, 4 wheels	Express, single wheels.	For Mixed Traffic.	Consolidation Bogies, 8 wheels coupled.	Mogul Bogie, 6 wheels	Ordinary, 6 wheels coupled.	ordinary	Total Engines.	Dining Carriage.	Sleeping Carriages on Bogies	American, on Bogies.	Ordinary, on Bogies.	8 Wheels.	6 Wheels.	American, on Bogies.	Ę	6 Wheels.	4 Wheels.	Ordinary on Bogies.	6 Wheels.	4 Wheels.	Mail, on Bogies.	Mail, on 4 Wheels.	Workmen's.	Brake Vans.	Hearses.	Horse Boxes.	Total Passenger	Amidont Vana	Accident valis.	4	В.	D.	Б.	4	G.	Water.	Loco. Coal.	Ballast.	Ċ,	Powder.	Sheep.	Cattle.	Meat.	Composite, Cattle and Goods.	Refrigerating.	Dump-car.	Бгаке уаль.	Total Goods.	Grand Total of Goods and Pa Stock.
	1883.																																																				
	Southern and Western	14	7 6	3	8 3	17	11	2:	2 72	6	228	1	7	31	7	6	0 1	5 10	6	14	33 3	2] 3 I	120	2	6	3 22	61	4	64 3	6 50	00	6 1	32 1	56	3262	2 19	2 3	33	6 1	40	42	200	11	250	271	(10	1	ı	1 10) 25 4{	324	5550
	Northern		4 1:			8			2 2 5	1					- 1	- 1	,					- 1		71		1 1	1.	1 :	1		1	ı	1		- 1			1	1 8	- 1	- 1				ł	I	1	1 1	- 1		- 1	1	1827
	Total to 31st December, 1883	141	1 80	1 0	2 6	25	ľī	34	1 97	6	296	r	8	31	7	6	5 2	9 16	514	182	17 3	2	3 1	191	2	10	6 22	80	6	94 5	669	95	6 20	02 2	16	4100	27	6 3	33	12	40	148	292	19	389	383	3 17	ı	ı	1 14	17 6:	386	7377
	1882.																													1							<u> </u>								_	İ							•
	Southern and Western	14	7 68	3	3 3	17	11	16	68	6	213	1	7	24	7	6	0 1	5 13	6	14	33 2	4	3 1	72	2	6	3 8	46	4	54 3	6 40	3	6 ;	72 1	56	3012	19	2 3	3	6		42	179	10	199	220	10	I	1.	٤	32 41	94	4810
	Northern		4 1:	2	- 1	8						1				- 1		- 1				- 1	1	53		1 1	- 1			30 2		- 1	1			673			1 1	- 1	- 1		ŀ	1	ŀ	į.	3			1	39 12	251	1467
:	Total to 31st December, 1882	14	1 80		3 6	25	11	20	92	6	268	1	8	24	7	6 1	5 2	9 13	8	182	\$7 2	4	3 I	125	5	10	5 8	3 56	69	94 5	6 56	64	6 14	122	14 3	3685	27	6 3	3	12		85	251	17	313	302	13	. 1	1	12	; 1 54	145	6277
																								-																	Ì												
	Increase				9			12	5		28			7	.			. 3	6			8	.	66	2		1 14	24	.		13	ı	. 6	ίο	2	415	;		30	1	- 40	63	41	2	76	81	4			1 2	:6 9	41	1100
	Decrease				-		•••	 	-		•••		 					•••						•••			·;··								

No. 8.

PUBLIC DEBT FOR RAILWAYS.

STATEMENT showing the amounts appropriated for Railway Services to 31st December, 1883; the Amount expended to same date; and the Balances retained or written off in the books of the Treasury.

### Retained. Written ### 16	. Appropriations.	. Particulars.	Expended.	Balar	nces
217,500 0 0 Loan to the Sydney Railway Company	. Appropriamons.	Tarviculare.	Expended.	Retained.	Written off.
18 VIOTORIA, No. 40. 400,000 0 0 224,733,18 8	£ s. d.	16 VICTORIA, No. 39.	£ s. d.	£ s. d.	£ s. d.
400,000 0 0 224,733 18 8	217,500 0 0	Loan to the Sydney Railway Company	217,500 0 0		
224,733 .18 8 Purchase of the properties of the Sydney Railway and of the Hunter River Railway Companies. 224,733 18 8 624,733 18 624,733		18 VICTORIA, No. 40.		<	ĺ
and of the Hunter River Railway Companies. 224,733 18 8 624,733 18 18 624,733 18 624,733 18 18 624,733 18 624,733 18 624,733 18 624,733 18 624,733 18 624,733 18 624,733 18 624,733 18 624,733 18 624,733 18 624,733 18 624,733 18 624,733 18 624,733 18 6			400,000 0 0	······	
19 VIOTORIA, NOS. 38 & 40.	224,733.20		224,733 18 8		·····
Color	624,733 18 8	_	624,733 18 8		
Castle to Mattland Castle to Mattland Castle to Sq.499 10 0 0 10 0 0 112,500 0 0 0 112,500 0 0 112,500 0 0 112,497 9 7 2 0 5		İ			
Sion of Railways 49,997 19 7 2 0 5 112,497 9 7 2 10 5 112,497 9 7 2 10 5 112,497 9 7 2 10 5 112,497 9 7 2 10 5 112,497 9 7 2 10 5 112,497 9 7 2 10 5 112,497 9 7 2 10 5 112,497 9 7 2 10 8 112,497 9 7 2 10 8 112,497 9 7 2 10 8 112,497 9 7 2 10 8 112,497 9 7 2 10 8 112,497 9 7 2 10 8 112,497 9 7 2 10 8 112,490 0 0 0 Railway works 299,927 9 4 72 10 8 112,490 0 0 0 Railway Works 22 VIOTORIA, No. 22. 11,999 18 0 0 0 12,999 18 0 0 0 0 0 12,999 18 0 0		castle to Maitland	62,499 19 oʻ	. 0 10 0	
200,000 0 0 0 Railway works 20 VIOTORIA, No. 1. 200,000 0 0 0 Railway works 220,000 0 0 0	50,000 0 0		49,997 19 7	2 0 5	
200,000 0 0 Railway works	112,500 0 0		112,497 9 7	2 10 5	
20 VICTORIA, No. 34. 299,927 9 4 72 10 8		20 VICTORIA, NO. 1.			
230,000 0 0 Railway works 299,927 9 4 72 10 8 22 VICTORIA, No. 22.	2,00,000 0 0	Railway works	200,000 0 0		
1,300		20 VICTORIA, NO. 34.			•
712,000	300,000 0 0	Railway works	299,927 9 4	72 10 8	
Socion Colon Railway Trial Survey Socion Col		22 VICTORIA, NO. 22.			·
1,300 0 0 0 0 0 0 0 0 0			711,999 18 0 8,000 0 0		0 2 0
1,300 0 0 0 0 0 0 0 0 0	720,000 0 0		719,999 18 0		0 2 0
9,021	4	23 VICTORIA, NO. 10.			
1,300	9,021 0 0	Works in progress—Authorized Extensions	8,645 2 8 23,941 1 8		4 0 0 375 17 4 7 18 4
1,300	88,370 o o	-	85,707 6 3	2,274 18 1	387 15 8
7,020		24 VICTORIA, NO. 24.	•	•	•
Comparison		Valuation of Land			301 10 7
675 0 0 0 0 0 0 0 0 0	8,320 0 0	<u> </u>	8,018 9 5		301 10 7
9,184 0 0 Works in progress—Authorized Extensions S,168 13 2 1,015 5,000 0 0 Carriage-shed and Machine-shop, and fixing Engine Turn-table, &c., Northern Line 4,578 19 3 421 0 9 Bridge over Hunter River, at Singleton 40,000 0 0 Bridge over the Nepean, at Penrith 70,000 0 0 688,000 0 0 Great Southern Line to Goulburn 16,200 0 0 20,000 0 0 Engines for Southern Extensions 20,000 0 0 30,000 0 0 Great Western Line to the Nepean 30,000 0 0 250,000 0 0 Great Western Line to the Nepean 30,000 0 0 250,000 0 0 Great Western Line from Penrith towards Bathurst 250,000 0 0 Carriage-shed and Machine-shop, and fixing Engine 4,578 19 3 421 0 9 4,578 19 3 42		25 VICTORIA, No. 19.			
20,000 0 Northern Line to Terminus to Morpeth 20,000 0 0 0					3 18 4 1,015 6 10
Turn-table, &c., Northern Line	20,000 0 0	Northern Line to Terminus to Morpeth		1	
688,000 0 0 Great Southern Line to Goulburn 687,999 8 0 0 12 0 16,200 0 0 Land for Great Southern Railway to Goulburn 16,200 0 0 20,000 0 0 Engines for Southern Extensions 20,000 0 0 7,000 0 0 Trial Surveys 7,000 0 0 30,000 0 0 Great Western Line to the Nepean 30,000 0 0 Great Western Line from Penrith towards Bathurst 250,000 0 0 Great Northern Line towards Armidale 250,000 0 0 Great Western Line from Blacktown to Windsor and Richmond 10,000 0 0 Additions and Alterations to Workshops and Stations 9,998 7 6 1 12 6 12 6		Turn-table, &c., Northern Line Bridge over Hunter River, at Singleton	40,000 0 0		
16,200 0 Land for Great Southern Railway to Goulburn 16,200 0 0 0 0 0 0 0 0 0		Great Southern Line to Goulburn		1	
20,000 0 Continue Continu		Land for Great Southern Railway to Goulburn			
30,000 0 Great Western Line to the Nepean 30,000 0 0 0 0 0 0 0 0		Engines for Southern Extensions	20,000 0 0		,
250,000 0 0 Great Western Line from Penrith towards Bathurst 250,000 0 0 Great Northern Line towards Armidale 250,000 0 0 Horse Railway Line from Blacktown to Windsor and Richmond 60,000 0 0 Additions and Alterations to Workshops and Stations 9,998 7 6 1 12 6	1 ''		•	1	•••••
250,000 0 0 Great Northern Line towards Armidale		Great Western Line from Penrith towards Bathurst		1	
10,000 0 0 Additions and Alterations to Workshops and Stations 9,998 7 6 1 12 6	250,000 0 0	Great Northern Line towards Armidale		1	
1476 070 0 0		Richmond			
- ··· · · · · - · · · · · · · · · ·	1,476,059 0 0	-	1,474,616 9 7	423 5 3	1,019 5 2
3,747,482 18 8 Carried forward£ 3,743,001 0 10 2,773 4 5 1,708 1	3,747,482 18 8	Carried forward£	3,743,001 0 10	2,773 4 5	1,708 13 5

### Retained. Written off. ### 8. d. #	Appropria	tion		Particulars.	Funan	4.4	Bala	nces
3/47/48 18 8 Brought forward 3/43/601 0 0 2,773 4 5 1,708 13 5 3 4 0 0 0 0 0 0 0 0 0		.01011		A or occurses.	Expen	aea.	Retained.	Written off.
3/47/48 18 8 Brought forward 3/43/601 0 0 2,773 4 5 1,708 13 5 3 4 0 0 0 0 0 0 0 0 0								
26 Victorial, No. 14. 26 Victorial, No. 14. 26 Victorial, No. 14. 26 Victorial, No. 14. 26 Victorial, No. 14. 26 Victorial, No. 14. 26 Victorial, No. 14. 27 Victorial, No. 15 Victorial, No. 15 Victorial, No. 15 Victorial, No. 15 Victorial, No. 15 Victorial, No. 15 Victorial, No. 15 Victorial, No. 15 Victorial, No. 15 Victori							£ s. d.	£ s. d.
1,700	3,747,482	18	8	Brought forward	3,743,001	0 10	2,773 4 5	1,708 13 5
11,153				26 VICTORIA, No. 14.				
11,153	.700	0	0	Valuation of Land	606	0 0		400
16,000				Works in progress—Authorized Extensions	10,523	3 5		658 16 7
Additional Talegraph Wire for Railway purposes from Campbelltown to Picton 336 5 6 13 14 6 8 160 3 4 29,997 0 0 0 27,754 14 1 1,475 14 10 676 11 1 1 1 1 1 1 1 1 1	16,000	0	0	Additional Line from Newcastle to Wallsend Junction	14.684		1,315 11 6	
29,907				from Parramatta to Penrith	226	5 6		13 14 6
29,907 0 0 27,754 14 1 1,475 14 10 676 11 1	075	0	0	from Campbelltown to Picton		16 8	160 3 4	
215,414 3 1 23,332 28 3,480 14 3 3 3,332 28 3,480 14 3 3 3,332 28 3,480 14 3 3 3,332 28 3,480 14 3 3,332 28 3,332	29,907	0	0		27,754	14 1	ļ	676 11 1
215,414 3 3 3,032 2 8 3 3,032 2 8 4,480 14 3 1 3,032 2 8 4,480 14 3 1 3,032 2 8 4,480 14 3 1 3,000 0 0 0 0 0 0 0 0 0				27 VICTORIA, No. 14.		<u>-</u> -		<u> </u>
3.032 2 8	215,414	3	ľ	•	215 414	2 1		
13,000	3,932	2	8	Workshops, Southern Line	3,932	2 8		
23,000		•	_	worksnops, Northern Line		,		.·····
35,000	23,000			Locomotive Engines, Western Line	•			*************
1,000				Carriages, Break-vans, Western Line	20,000			
4.000 0 0 0 0 0 0 0 0 0				Traverses for Coal Sidings, Newcastle	1 .		1	
50,000		,	0	Ballast-waggons for Northern, Southern, and Western	37,659	10 9	2,340 9 3	
15,000			0	Extension into Goulburn	50,000	0 0		
7,500				Extension into Bathurst				
Siding into Cemetery at Haslem's Oreek 4,821 5 6 178 14 6				Purchase of Land for Morpeth Railway	-			••••••
and West Maitland 1	5,000	0		Siding into Cemetery at Haslem's Creek				
Hexham	. 900	0	0	and West Maitland	900	0 0		
3,500 0 400 0 0 0 0 0 0 0	970	0	0	New Passenger Station, Platform, and Station at				
Stables at Newcastle				Coal Sidings at Newcastle Passenger Station and Platform at Rooty Hill,			2,933 6 3	••••••
S52,107 0 0 0 Station at Riverstone Station at Riverstone Station at Mulgrave Station at Station at Doco Station at Station at Station at Station at Station at Station at Station at Station at Station at Station at Station at Station at Station at Doco Station at Station at Station at Station at Station at Station at Station at Station at Station at Station at Station at Doco Station at S			0	Three Gate-houses on Western Line				
29 VICTORIA, No. 9	. 110	0	<u> </u>	Stables at Newcastle	110	0 0		
Station at Riverstone	552,107	0	<u> </u>		546,532	7 0	5,574 13 0	
Station at Mulgrave								
9,000 0 0 10,000 0 0 850 0 0 10,000 0 0 0 10,000 0 0 0 10,000 0 0 0				Station at Riverstone				
Note				Additional Ballast and Goods Trucks			***************************************	•••••
10,000	10,000	0	0	Windsor and Richmond Line	,			
20,000 0 0 Additional Goods accommodation, Sydney Station 19,999 18 0 0 2 0	_		- 1	Land at Newtown for Siding		,		
12,000				Additional Goods accommodation, Sydney Station		_	. ,	0 2 0
Claims for Land on the Penrith, Picton, and Singleton Sextensions Station at Douglas Park 640 14 3 9 5 9 19,995 2 11 4 17 1 1 1 1 1 1 1 1 1			- 1	Kailway-sheds			l i	· 1
Station at Douglas Park Extension of Great Northern Line to Terminus at Morpeth Morpeth Station at Douglas Park Extension of Great Northern Line to Terminus at Morpeth 19,995 2 11			- 1	Claims for Land on the Penrith, Picton, and Singleton	5,000	0 0		·
20,000 0 0 Extension of Great Northern Line to Terminus at Morpeth 19,995 2 11 4 17 1	650	ò	0	Extensions Station at Douglas Park				
94,800 0 0 29 VICTORIA, No. 23. Extension of the Great Western Line 200,000 0 0 Extension of the Great Northern Line 398,677 2 3 1,322 17 9 20,000 0 0 Extension of the Great Martine 20,000 0 0 Enlarging Railway Bridges at East Maitland 2,508 17 2 1,491 2 10 Additional Accommodation to Stations 5,000 0 0 Additional Goods Waggons 10,000 0 0 636,185 19 5 2,814 0 7 3,000 0 0 Engine-shed, Windsor and Richmond Line 1,054 9 6 1,945 10 6 Trial Surveys for the Extension of the Great Southern and Western Railways 5,000 0 0 231,054 9 6 1,945 10 6 31,054 9 6 1,945 10 6 31,054 9 6 1,945 10 6 31,054 9 6 1,945 10 6 31,054 9 6 1,945 10 6		0	٥	Extension of Great Northern Line to Terminus at				
29 VICTORIA, No. 23. 200,000	94,800	0	ᇹ	*				0 3 0
200,000 0 0 Extension of the Great Western Line 200,000 0 0 Extension of the Great Northern Line 398,677 2 3 1,322 17 9 20,000 0 0 Extension of the Great Northern Line 20,000 0 0 4,000 0 0 Enlarging Railway Bridges at East Maitland 2,508 17 2 1,491 2 10 5,000 0 0 Additional Accommodation to Stations 5,000 0 0 10,000 0 0 Additional Goods Waggons 10,000 0 0 30 VICTORIA, No. 23. 3,000 0 0 Engine-shed, Windsor and Richmond Line 1,054 9 6 1,945 10 6 Trial Surveys for the Extension of the Great Southern and Western Railways 5,000 0 0 25,000 0 0 31,054 9 6 1,945 10 6	71,		-	29 VICTORIA, No. 23.	92,012	-5 0		
400,000 0 0 Extension of the Great Northern Line 398,677 2 3 1,322 17 9 4,000 0 0 Enlarging Railway Bridges at East Maitland 2,508 17 2 1,491 2 10 5,000 0 0 Additional Accommodation to Stations 5,000 0 0 639,000 0 0 Additional Goods Waggons 636,185 19 5 2,814 0 7 3,000 0 0 Trial Surveys for the Extension of the Great Southern and Western Railways 5,000 0 0 25,000 0 0 Trial Surveys for the Extension of the Great Southern and Western Railways 5,000 0 0 25,000 0 0 Trial Surveys for the Extension of the Great Southern and Western Railways 5,000 0 0 31,054 9 6 1,945 10 6	200 000	^			000			
20,000 0 0 Relaying the Line from Sydney to Parramatta Junetion 20,000 0 0 1,491 2 10 1,491 2 10 1,491 2 10 1,000 0 0 10,000 0 10,000 0 0 10,000 0 0 10,000 0 0 10,000 0 0 10,000 0 0 10,000 0 0 10,000 0 0 10,000 0 0 10,000 0 0 10,000 0 10,000 0 0 10,000 0 0 10,000 0 0 10,000 0 0 10,000 0 0 10,000 0 0 10,000 0 0 10,000 0 0 10,000 0 0 10,000			- 1	Extension of the Great Northern Line			1	•
5,000 0 0 6 Additional Accommodation to Stations 5,000 0 0 10,000 0 10,000	20,000	0	0	Relaying the Line from Sydney to Parramatta Junetion	20,000	0 0		
10,000	• • • • • • • • • • • • • • • • • • • •			Additional Accommodation to Stations				
639,000 0 0 30 VIOTORIA, No. 23. 3,000 0 0 5,000 0 0 25,000 0 0 33,000 0 0 33,000 0 0 31,054 9 6 1,945 10 6	•		- 1	Additional Goods Waggons				
30 VICTORIA, No. 23. 3,000 0 0 Engine-shed, Windsor and Richmond Line	630,000	•	-					
3,000 0 0 Engine-shed, Windsor and Richmond Line	377-44	•		30 VIOTORIA, No. 23.		-y 5		
5,000 o o Trial Surveys for the Extension of the Great Southern and Western Railways 5,000 o o Compensation for Land taken on the Ultimo Estate 25,000 o o 31,054 9 6 1,945 10 6		_				_		
25,000 o o Compensation for Land taken on the Ultimo Estate 25,000 o o 33,000 o o 31,054 9 6 1,945 10 6			i	Trial Surveys for the Extension of the Great Southern	1,054	96	1,945 10 6	
33,000 0 0 31,054 9 6 1,945 10 6	-			and Western Railways		1		
				F				
5,077,141 5 10 10,770 6 4 2,385 6 6	 		<u> </u>	Comind formers				
	5,090,290	10	٥	Carried forward£	5,077,141	5 10	10,770 6 4	2,385 6 6
The state of the s		· 	1) • • • •		

	Postforders	Expended.	Balan	ces
Appropriations.	Particulars.	Expended.	Retained.	Written off.
£ s. d.		£ s. d.	£ s. d.	£ s. d.
£ 8. d. 5,096,296 18 8	Brought forward		16,770 6 4	2,385 6 6
5,090,290 10 0				
	31 VICTORIA, No. 11.	•		
1,000,000 0 0	Railway Works—Extension to Bathurst and Goulburn	999,409 12 10	590 7 2	
3,412 0 0	31 VIOTOBIA, No. 27. Half the Cost of the Telegraph Line from Picton to Goulburn, along the line of Railway—chargeable			
3,719 0 0	to Railways Half the cost of Telegraph Line from Penrith to Bathurst, along the line of Railway—chargeable	3,411 2 0	0 18 0	************
	to Railways	3,511 0 10	207 19 2	************
7,131 0 0		6,922 2 10	208 17 2	
	32 VICTORIA, No. 13.			
60,000 0 0	Towards cost of additional Rolling Stock for Railway purposes	60,000 0 0		
10,000 0 0	Compensation for Land taken at Honeysuckle Point	9,852 7 2	147 12 10	
70,000 0 0		69,852 7 2	147 12 10	
	 34 Victoria, No. 2.			
13,000 0 0	New Machine-shop, running shed, erecting shop and			
	stores at Newcastle, including roads connected therewith	12,917 4 5	82 15 7 325 15 10	***************************************
2,000 0 0 30,500 0 0	Additional Machinery New Station, Workshops for carriage and waggons department, carriage-shed, roofing, steam hammer, furnaces and machinery, Redfern, including roads	1,674 4 2		•••
5,000 0 0	Excavating Station-yard, Redfern	30,420 19 11	79 0 1 97 5 2	
3,500 0 0 6,000 0 0	New Passenger Station and Platforms, Newcastle, including road approaches	3,500 0 0 5,965 0 5	34 19 7	
60,000 0 0 35,000 0 0	Construction of Rolling Stock Completion of the relaying of the Line from Sydney	59,998 3 6	1 16 6	
17,000 0 0	to Parramatta	30,402 14 5	4,597 5 7	••••••••••••
5,000 0 0	and Sidings in connection with same Extension to Morpeth	14,518 9 10 4,994 10 0	2,481 10 2	
2,000 0 0	Land for Windsor and Richmond Line	1,340 18 11	8,364 19 7	
179,000 0 0	. '	170,033 0 3	- 0,304 19 7	
•	35 VICTORIA, No. 5.			
124 0 0 230,000 0 0	Construction of Railway-sheds	122 9 5 229,942 14 2	1 10 7 57 5 10	
70,000 0 0	Construction of Rolling Stock manufactured in the		4,419 6 3	
, 300,124 0 0	-	295,645 17 4	4,478 2 8	
	-			
60,000 0 0	36 VICTORIA, No. 2. Rolling Stock manufactured in the Colony	58,871 2 4	1,128 17 8	
2,000 0 0 257 0 0	Station Buildings—West Maitland Station-master's House at Newtown	1,876 10 2 257 0 0	123 9 10	************
62,257 0 0		61,004 12 6	1,252 7 6	
	36 VICTORIA, No. 17.			
60,000 0 0 10,000 0 0	Rolling Stock manufactured in the Colony		28 19 3 0 1 1	
1,131,000 0 0		ı l		
60,000 0 0 279,000 0 0	Construction of a Line—Kelso to Bathurst	60,000 0 0		
361,500 0 0	Construction of a Line—Murrurundi to Tamworth	361,500 0 0		
1,901,500 0 0	-	1,901,470 19 8	31,841 13 7	2,385 6
8,616,308 18 8	Carried forward	0,502,001 10 7	31,041 13 7	2,303

Appropria	tions.	Particulars.	Expended.	Bala	nces
			1	Retained.	Written off.
£ 8,616,308	s. d. 18 8	. Brought forward	£ s. d 8,582,081 18 7	1 2	£ s. d.
20,000 100,000 25,000 10,000 8,000 2,000 6,000 45,000 50,000	0 0	38 VICTORIA, No. 2. Trial Surveys Rolling Stock Towards purchasing Land, laying Sidings, and erecting Sheds, Darling Harbour Wharf Engine-sheds Enlarging Machine-shop, Sydney Additional Machinery, Sydney Completion of New Station, Redfern To complete Western Line to Kelso, &c Unadjusted Land Claims. To connect Great Northern Railway with the New	99,992 12 10 24,998 13 4 9,953 14 1 7,745 3 3 2,000 0 0 5,931 13 7 44,980 18 9	7 7 2 1 6 8 46 5 11 254 16 9 	
50,000		Wharfage Accommodation at Bullock Island Purchase of twelve Passenger Locomotive Engines for extensions beyond Murrurundi, Goulburn, and Bathurst	43,719 12 8		••••••
317,000	0 0	•	309,457 2 6	7,542 17 6	
20,000 50,000 5,000	0 0	39 VICTORIA, No. 18. Trial Surveys	20,000 0 0 49,599 17 2 5,000 0 0	400 2 10	
75,000	0 0	·	74,599 17 2	400 2 10	************
350,000 260,000 384,000 600,000 220,000 25,000 150,000	0 0 0 0 0 0 0 0 0 0	40 VICTORIA, No. 12. Orange to Wellington Wellington to Dubbo Junee to Narandera Tamworth to Armidale Werris Creek to Gunnedak Trial Surveys Additional Rolling Stock For strengthening the Bridge and improving the gradients on the Windsor and Richmond Line	260,000 0 0 347,646 16 6 600,000 0 0 220,000 0 0 25,000 0 0	36,353 3 6	
1,999,000	0 0		1,962,646 16 6	36,353 3 6	•••••
80,000	0 0 0 0 0 0	41 VICTORIA, No. 4. To complete line from Goulburn to Wagga Wagga To complete the extension into Bathurst To complete the line from Bathurst to Orange To complete line from Murrurundi to Tamworth	30,000 0 0 6,246 16 1 64,922 5 11 73,598 11 9	14,105 3 11 12,077 14 1 6,401 8 3	
207,352		· · · · · · · · · · · · · · · · · · ·	174,767 13 9	32,584 6 3	***************************************
680,000 20,000 20,000 240,000	o o o o	41 VICTORIA, No. 7. For the extension of the Great Southern Railway from the end of No. 3 Contract near Wagga Wagga to Albury, including the Viaduct over the Murrumbidgee River Trial Surveys. To double the line from Wallsend Junction to Hoxham Rolling Stock, including Engines	680,000 0 0 20,000 0 0 20,000 0 0 240,000 0 0		
960,000	0.0		960,000 0 0		
1,611,000 1,450,000 370,000 735,000 735,000 100,000	0 0 0 0 0 0 0 0 0 0 0 0	43 VICTORIA, No. 11. Tamworth to Tenterfield	1,074,711 3 1 793,391 1 10 301,288 12 1 735,000 0 0 572,091 12 9 96,551 19 10 20,000 0 0 620,000 0 0	536,288 16 11 656,608 18 2 68,711 7 11 	
5,041,000 17,815,660		Consid forward		1,427,965 10 5	
L/.015.000	10 Q	Carried forward $\dots \pounds$	10,270,587 18 1	11,536,687 14 1	2,385 6 6

APPENDIX TO REPORT ON RAILWAYS-1883.

Appropria	tions		Particulars.	Expended.	Balar	ices.
		_			Retained.	Written off.
£ 17,815,660	s. 18	đ. 8	Brought forward	£ s. d. 16,276,587 18 1	£ s. d.	£ s. d.
			44 Victoria, No. 12.	,		
40,000 22,000 250,000	0	0 0 0	Orange to Dubbo Werris Creek to Gunnedah Site and erection of New Workshops, Machinery,	23,532 6 2 20,190 5 3	16,467 13 10 1,809 14 9	
100,000			and Sidings, in connection therewith	217,440 19 11 99,988 13 4	32,559 0 1 11 6 8	***************************************
412,000	0	0		361,152 4 8	50,847 15 4	
·		_	44 Victoria, No. 28.			
2,000,000 1,020,000		0,0	Southern and Northern Junction Railway—From Homebush to Waratah (double line) 95 miles Sydney to Wollongong and Kiama, 68 miles		1,867,927 9 11 763,767 11 9	
1,430,000		0	Goulburn to Cooma viá Tarago, Bungendore, and Queanbeyan, 130 miles		1,204,668 8 4	
705,500 518,000 218,000 1,260,000 95,000 300,000	0.0000	000000	Albury to the river Murray (double line) including moiety of cost of constructing the Bridge 14 mile Orange to near Forbes vid Molong, 83 miles	76,554 3 10 6,507 4 10 170,421 11 2 6,739 14 10 133,575 15 5 95,000 0	3,445 16 2 698,992 15 2 347,578 8 10 211,260 5 2 1,126,424 4 7	
			Siding accommodation to meet increasing traffic, inclusive of payments made in 1880 in anticipation of this vote	300,000 o o		••••••
.7,626,500	0	0		1,402,435 0 1	6,224,064 19 11	
			45 VICTORIA, No. 22.	0		
500,000			Additional Rolling Stock	383,247 19 3 383,247 19 3	116,752 0 9	***************************************
500,000	-	-	46 VICTORIA, NO. 23.	303,247 19 3	110,752 0 9	
580,000 40,000 400,000	o		For providing additional Rolling Stock and the purchase of Machinery, Tools, &c	11,124 11 4 24,452 5 2	568,875 8 8 15,547 14 10	
140,000	ö	0	poses	248,564,16 5	151,435 3 7	************
85,000	0	0	Railway Doubling line from Parramatta to Penrith	506 12 3 1,807 3 6	139,493 7 9 83,192 16 6	••••••
1,245,000	0	0		286,455 8 8	958,544 11 4	
7,599,160	18	8	TOTAL SERVICES£	18,709,878 10 9	8,886,897 1 5	2,385 6 6
			ADVANCES FOR STORES.			
75,000	o	0	36 VICTORIA, No. 2. Purchase of Railway stores and materials which cannot properly be charged to the Appropriations of Parliament until actually issued for use—the vote to be recouped as issues take place	•	•	
			43 VICTORIA, No. 11.	7.57		
225,000	. • .	0	. Dô. do. dò.	225,000 0 0		
300,000	۰, ۰	0	TOTAL STORES :£	300,000 0 0		
	18	ē	GRAND TOTAL£	10.000.878.10.0	8,886,897 1 5	2,385 6 6

The Treasury, New South Wales, March, 1884. JAMES PEARSON, Accountant.

No. 8.

PUBLIC DEBT FOR TRAMWAYS.

STATEMENT showing the amounts appropriated for Tramway Services to 31st December, 1883; the Amount expended to same date; and the Balances retained or written off in the books of the Treasury.

Appropria	ions	.	Particulars.	Expend	ded.				Balaı	nces.
		·					Retair	ieđ.		Written off.
£	s.	d.	44 Victoria No. 12.	£	s.	d.	£	ĮS.	d.	£ s. d.
600,000	0	٥	Construction of the Tramways authorized by the Act 43 Victoria No. 25	599,995	15	4	4	.4	8	••••••
			46 Victoria No. 23.] 			
400,000	0	0	Construction of Tramways including Motors, Rolling Stock, Machinery, &c	<u>67,5</u> 91	i'8	ĕ	332,408	Ĭ	6	,,.,,
1,000,000	0	٥	Total £	667,587	13	10	332,412	6	2	

Treasury, N.S.W., 31st March, 1884. JAMES PEARSON, Accountant.

No. 9.

STATEMENT showing the Amount authorized to be raised by Loan for Railway Purposes; the Amount of Debentures sold, and the Interest to the 31st December, 1883, on Loans already negotiated.

					Zionnia taroat	<u> </u>			
]			D.b., (Over-issued and		Interest.	٠,	
	Act.	Amount authorized to be raised.	Debentures sold— Amount.	Short-issued.	to raise amounts short-raised.	Rate.	Annual Interest on Authorized Loans.	Interest to 31st December, 1883, on Loans already negotiated.	Remarks.
		£ s. d.	£ s. d.	£ s. d. [£ s. d.	i	£ s. d. l	£ s. d.	
-6 373	ictoria, No. 39	217,500 0 0	217,500 0 0		***************************************	5 per cent.	. 10,875 0 0	318,516 4 9*	* 23d. and 31d. per diem were the rates of interest of original Loan,
		624,733 18 8	666,800 0 0		42,066 I 4	J ,	33,340 0 0	940,462 6 5	but renewals were at the rate of 5 per cent. per annum. †Some of these Debentures have been renewed as they fell due.
18	" No. 40		112,500 0 0		4-)	,,	5,625 0 0	143,437 10 0	1 Bonie of these Dependings him to been renounded at the first date.
19	" Nos. 38 & 40	,5	203,000 0 0		3,000 0 0	1	10,150 0 0	268,975 0 0	•
20	" No. I	200,000 0 0	299,000 0 0	1,000 0 0	•	[14,950.00	380,375 0 0	
20	" No. 34	300,000 0 0	720,000 0 0	,	***************************************	l "	36,000 0 0	900,000 0 0	•
22	" No. 22	720,000 0 0			••••••	,,	4,415 0 0	103,752 10 0	
23	" No. 10	88,370 0 0	88,300 0 0 8,300 0 0	70 0 0	•••••	,,	415 0 0	9,337 10 0	
24	" No. 24	8,320 0 0	-/3	- [,,	73,800 0 0	1,623,600 0 0	
25	" No. 19	1,476,059 0 0	1,476,000 0 0	59 0 0	***************************************	,,	1,495 0 0	28,405 0 0	
26	" No. 14	29,907 0 0	29,900 0 0	7 0 0	***************************************	,,	27,605 0 0	524,495 0 0	
27	" No. 14	552,107 0 0	552,100 0 0	7 0.0	****************	,,		78,210 0 0	
29	" No. 9	94,800 : 0 0	94,800 0 0			,,	4,740 0 0	562,762 10 0	
29	" No. 23	639,000 0 0	639,000 0 0	************		,,	31,950 0 0	28,050 0 0	
30	" No. 23	33,000 0 0	33,000 0 0		**************	,,	1,650 0 0	,_0	
31	" No. 11	1,000,000 0 0	1,000,000 0 0		•••••	,,	50,000 0 0	793,800 0 0‡	The interest on the original Loan is inserted in this column, not- withstanding the following Debentures have been finally paid
31	", No. 27	7,131 0 0	7,100 0 0	31 0 0	•••••	,,	355 0 0	5,502 10 0	off, viz. :-
32	" No. 13	70,000 0 0	70,000 0 0		•••••	,,	3,500 0 0	52,500 0 0	31 December, 1872 £20,000
34	" No. 2	179,000 0 0	179,000 0 0			',,	8,950 0 0	118,587 10 0	31 ,, 1873 21,000
	ortion of Issue under	.,.							31 ,, 1874 22,000 31 ,, 1875 23,200
vari	ous Loan Acts to make		1			1			31 ,, 1876 24,300
good			i		_		1		31 ,, 1877 28,500
T9.186	ed under the same	.,,,	228,700 0 0		228,700 0 0	,,	11,435 0 0	154,372 10 0	31 , 1878 10,500 31 , 1879 27,900
25 Vi	ictoria No. 5	300,124 0 0	300,100 0 0	24 0 0		,,	15,005 0 0	187,562 10 0	90 500
35	No o	137,257 0 0	137,200 0 0	57 0 0		,,	6,86o o o	78,890 0 0	31 ,, 1881 34,100
36	″ No. 75	1,901,500 0 0	1,901,500 0 0			4 per cent.	76,060 0 0	648,480 0 0	1 31 , 1882 28,800
38	No o	317,000 0 0	317,000 0 0			j ,,	12,680 0 0	63,400 o o	31 ,, 1883 35,900
	" No. 18	75,000 0 0	75,000 0 0			,,	3,000 0 0	24,000 0 0	Amounting to £306,700
39	" No to '	1,999,000 0 0	1,999,000 0 0			,,	79,960 0 0	399,800 o o	
1 -	" No 4	207,352 0 0	207,300 0 0	52 0 0		,,	8,292 0 0	41,460 o o	
41	″ No. 7	960,000 0 0 1	960,000 0 0	J		· "	38,400 0 0 1	96,000 0 0	i
41	" No T	5,866,000 0 0	5,866,000 0 0	******	***************************************	,	234,640 0 0	340,040 0 0	
43	" No 10	412,000 0 0	J,,			,,	16,480 0 0		,
44	" No. 12	7,626,500 0 0				,,	305,060 0 0		•
44	" No. 28	500,000 0 0				,,	20,000 0 0	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
45	" No. 22					,,	49,800 0 0		
46	" No. 23	1,245,000 0 0				. " …	1771		
1.	*Total£	27,899,160 18 8	18,388,100 0 0	1,327 0 0	273,766 1 4		1,197,487 0 0	8,914,773 11 2	

The total amount of the Debentures issued to 31st December, 1883, was £18,388,100 0 0

Add the Debentures authorized but not then issued, amounting to 9,783,500 0 0

Making a total of £273,766 I 4

Less amount authorized in excess of issue 1,327 0 0

272,439 I 4

The Treasury, New South Wales, 31st March, 1884.

JAMES PEARSON, Accountant.

^{*} In the report for 1882 a sum of £48,500 was included, since ascertained to be properly for public purposes other than Railways. The correct amount of Loans authorized for Railway purposes at end of 1882 was £26,654,161 in place o £26,702,661.

No. 10.

RETURN showing the Capital Expenditure on the Government Railways of New South Wales, to the 31st December, 1882, and subsequent Expenditure to the 31st December, 1883.

Lines and Sections.	Total Expen	ditu er, 18	re to 882.	Amount Expended in 1883.	Total Expenditu	
Trunk Line—	£	s.	d.	£ s. d.	£ s.	d
Darling Harbour Branch	. 141,368	18	4	7,611 7 3		
£ s. d. Sydney to Granville	1			" "	,	
* Deduct workshops, Redfern and Eveleigh 160,825 4 7	921,795	ΙI	7	54,801-14 5	976,597 6	
Tramway	4,878	7	I		4,878 7	
Total, Trunk Line	1,068,042	17	•	62,413 1 8	1,130,455 18	
			-			-
reat Southern Line—						
Granville to Liverpool	156,908	12	5	984 o 5	157,892 12	10
Liverpool to Campbelltown	140,332	16	7	1,611 13 5	141,944 10	(
Campbelltown to Menangle	83,871	I	1	••••••	83,871 1]
Menangle to Picton	335,621	5	5	170 10 4	335,791 15	9
Picton to Goulburn	1,076,824	14	7.	20,592 13 0	1,097,417 7	;
Goulburn to Yass	438,681	10	2	1,131 9 3	439,812 19	
Yass to Cootamundra	541,109	0	8	6,147 13 7	547,256 14	
Cootamundra to North Wagga Wagga	376,785	19	1	12,700 4 11	389,486 4	
North Wagga Wagga to Albury	793,904	I	9	5,214 17 10	799,118 19	
Albury to the river Murray	ł	14	4	67,942 11 2	78,055 5	
Junee to Narrandera	349,921	16	8	2,888 15 2	352,810 11	
Narrandera to Hay			- 1	17,898 15 6	580,196 11	
Narrandera to Jerilderie	1		2	168,204 2 0	171,767 11	
Sydney to Wollongong and Kiama		-	6	174,669 9 8	209,250 8	
Goulburn to Cooma	i		5	149,672 5 3	174,095 18	
Cootamundra to Gundagai	3,824	-	1	4,140 0 10	7,964 2	
Murrumburrah to Blayney	11,811			67,811 14 10	79,623 5	
Total, Southern Line'£	4,944,575	1	9	701,780 17 2	5,646,355 18	11
reat Western Line—						
Granville to Penrith	406,167	4	1	19,822 15 10	425,989 19 1	II
Blacktown to Richmond	157,550	ı́б	4	7,813 1 2	165,363 17	6
Penrith to Bathurst	2,014,845	12	6	31,144 15 4	2,045,990 7 1	10
Bathurst to Orange	377,963	19	6	2,415 4 11	380,379 4	5
Orange to Wellington	430,132	13 1	1	3,801 o o	433,933 13 1	I
Wellington to Dubbo	227,187	6	8	2,887 4 0	230,074 10	8
Dubbo to vicinity of Bourke	425,178	18 I	1	381,199 1 4	806,378 o	3
Wallerawang to Mudgee	550,051	9	3	243,555 10 1	793,606 19	4
Orange to near Forbes	6,494 1	5 1	ı	2,659 10 11	9,154 6 1	0
Total, Western Line $oldsymbol{x}$	4,595,572 1	7	_ -	695,298 3 7	5,290,871 0	8

^{*} This amount is now transferred and placed under a separate heading. The worksh West, and Richmond Lines, and consequently should not appear as expenditure for constru orkshops are used for the requirements of the whole of South, construction on Sydney to Granville.

Lines and Sections.		Total Expende			Amount Exp	end	ed	Total Expend 31 December		
reat Northern Line—		£	8.	d.	£	s.	d.	£	s.	d
Newcastle to West Maitland		607,160	14	1	18,962	19	3	626,123	13	4
Morpeth Branch		57,433	14	٥	168	6	11	57,602	0	11
West Maitland to Singleton		344,510	18	7	2,360	8	6	346,871	7	I
Singleton to Murrurundi		732,815	12	11	. 821	19	10	733,637	I 2	9
Murrurundi to Tamworth		449,588	I	3	246	13	10	449,834	15	I
Werris Creek to Gunnedah		246,057	2	10	1,402	19	8	247,460	2	6
Tamworth to Uralla		910,814	11	1	30,249	5	5	941,063	16	ć
Uralla to Glen Innes		280,691	4	11	275,888	15		556,580	0,	10
Glen Innes to Tenterfield		9,827	17	9	163,612	11	10	173,440	9	7
Gunnedah to Narrabri		301,653	14	1	8,639	16	8	310,293	10	9
Homebush to Waratah		25,952	13	5	54,827	7	3	80,780	0	;
North Shore to S. and N. Junction Railwa					677	0	5	677	0	
-		 -								_
Total, Northern Lin	ne£	3,966,506	4	11	557,858	5	6	4,524,364	10	
Total cost of Cons	truction£	14,574,697	o	9	2,017,350	7	11	16,592,047	8	
olling Stock— South and West		*1;522,621	14	10	209,797	19	10	1,732,419	14	
Richmond Liné		5,226	I	ı		•••		5,226	I	
North		379,776	10	11	73,924	14	9	453,701	5	
Tramway		1,712	12	3				1,712	I 2	
Total, Rolling Stoc	- 5k£	1,909,336	19		. 283,722	14	7	2,193,059	13	
Iachinery—						_				
South and West		62,443			15,573			78,017		
North		14,906	13	I,I	3,043	. <u> </u>	7	17,950	2	_
Total, Machinery		77,350	10	5	18,617	7	5	95,967	17	,
•			_							
Workshops— Redfern and Eveleigh		†160,825	5 4	. 7	73,119	19	4	233,945	3	;
'urniture— South and West :		2,225	; 14	. 4	490	0	9	2,715	15	;
North				11	274			845	15	;
Total, Furniture	£	2,797	7 8	3	764	. 2	6	3,561	10)
Frial Surveys		51,63	5 6	5 5	18,246	19	11	69,882		 5
Total, Railways										

^{*} Railway vehicles were used on the Camden Line, and their value is included here. Amount, £5.623.
† This amount is now transferred and placed under a separate heading. The workshops are used for the requirements of the whole of South, West, and Richmond Lines, and consequently should not appear as expenditure for construction on Sydney to Granville.

No. 10.

Detail of Cost of Additions and Improvements to Stations and Buildings, and Siding Accommodation, to meet increasing traffic, &c., charged to Capital Account during year 1883.

NORTH AND NORTH-WESTERN LINE.

NEWCASTLE TO WEST MAI	TLAND.			NEWCASTLE TO WEST MAITLAND-continued.
	£	s.	d.	£ s. d.
				Tarro—
Machinery		14		Erecting crane 208 19 11
Fixing interlocking gear	43	5	10	Woodford—
Bullock Island Junction—		e		Ticket-office and waiting-room 188 8 2
Additional sidings and coal-stages	479	18	7	'Porter's residence' 448, 6 11
Water supply, &c	66	_	0	Erecting loading platform wharf 34 1 10
Interlocking apparatus, &c	2,205		3	East Maitland—
Shed for Store Department	. 65	11	8	Sinking well for water supply 34 0 1
Newcastle—		•		Erecting crane 190 12 9
Interlocking apparatus, &c	1,944	2	7	West Maitland—
Dwarf wall and iron railings,				Station-master's house (addition to) 223 3 1
Hunter-street	1,543	11	8	Additions to goods-office 33 19 11
Additional siding accommodation	743	3	6	Morpeth (Branch)—
Burwood—				Additions to station 168 6 11
Interlocking signals and gear	2,859	9	6	707 34 C
Honeysuckle Point—				WEST MAITLAND TO SINGLETON.
Water-pipes to workshops and				Allandale—
water supply	937	2	1	Goods-shed and siding 547 11 4
Fencing store-yard and erecting				Additions and improvements to
shelving, &c	271	17	2	station and signals 262 1 1
Permanent-way and Locomotive				Greta—
Offices	1,136	11	8	Crane 255 1 3
Laying siding to new stores	349			Whittingham—
Erecting Mortuary Station	. 404			Stock-yards 52 7 5
Do Locomotive boiler-shops	900			Singleton—
Interlocking signals and apparatus Permanent-way workshops and	89	6	11	Additional sidings 832 18 4
machine-shop	298	12	6	Additional water supply and
•	200	12	U	engine-house 665 10 4
Hamilton—				SINGLETON TO MURRURUNDI.
Additional coal-line, &c., Waratah Junction to Hamilton	450	10	1	Ravensworth—
TTT ' 11 ' 1 ' 11' 0	459 335		1	Extending siding 90 1 1
Signalman's box	28		7	Aberdeen—
Additions to station and platform	277		9	Extending siding 58 4 5
_		,		Wingen—
Waratah—	41 -	10		Lengthening platform 66 7 7
Interlocking signals and apparatus Do do	415 134			Murrurundi—
	103	14	10	Erecting carpenter's workshop 193 19 11
Wallsend Junction—				Do loco storeroom 63 17 7
·Interlocking apparatus and signals	199	15	11.	Water supply 176 19 3
Sandgate— .				Wiring fence near Mr. Long's 21 12 5*
Gatehouse	484	14	4	Additional siding for Mr. Sevil 108 14 10
General Cemetery—	•			•
Additional platform (extending)	32	3	1	MURRURUNDI TO TAMWORTH.
Hexham—				Quirindi—
Erecting waiting-room	149	19	5	Additional siding 156 10 6
Laying sidings to wharf	172		4	Quipolly—
Additional loading-stage and wharf	255	16	9	Erecting loading platform 23 12 8*
Interlocking machines at station,				Werris Creek—
platform, and crossing	146	4	6	Engine turntable 84 16
		~ P	art co	st only.

No. 10a—Detail of cost of Additions and Improvements, &c.—continued.

${\bf NORTH\ AND\ NORTH\text{-}WESTERN\ LINE--} continued.$

MURRURUNDI TO	AMWORT	гн—сс	ntinu	ed.		WERRIS CREEK TO GUNNEDAH.
			£	8.	d.	£ s. d.
Tamworth—						Armidale—
Goods' sidings	•••	•••	207	2	2	Cart weighbridge 22 3 2*
Loading platform	•••	•••	147		3	Crane 239 9 8
Additional signals	`	•••	33	7	11	Curlewis—
-						Additions to porter's residence 61 14 7
(T)	M					Goods-shed 282 13 4
TAMWORTH	,					Additional siding 202 7 2
Waiting-shed, &c., 187 m	1. 20 ch.	•••	33	11	9	Gunnedah
M'Donald River—						Water supply 17 15 10*
Laying siding	•••	•••	72	3	7	
Platform		•••	33	15	2	
Walcha—						Gunnedah to Narrabri.
Stock-yards	•••		74	18	5	Emerald Hill—
Wool stage	•••	:	15	13	0*	Additional platform, 206 m. 6 ch. 55 1 0
Wallon-						Waiting-room 81 17 2
Waiting-shed and plat	form		. 84	9	1	Siding 135 6 5
Kentucky—	101111	•••	• •	Ŭ	_	Baan Baa—
Porter's house			394	15	9	Extending platform and waiting-
•						3.3
Uralla—						,
Crane	•••	•••	238	0	8	Narrabri—
Stock-yard	•••		4	16	9*	1
Additional signals	•••	•••	2	7	10*	
Kelly's Plains—						Loco. cottages 1,072 12 2
•	•			_	_	Crane 260 8 3
Waiting-shed and plat	form ·		138	9	8	Wclosets 60 5 8
•		£	24,397	18	4	£3,689 3 4

SOUTHERN LINE.

SYDNEY TO GRANVILLE.				SYDNEY TO GRANVILLE—contin	ued.		
Darling Harbour Station—	£	s.	d.		£	s.	d.
Additional sidings	3,705	11	, 0	Additional office accommodation			
Additional cattle yard and siding	1,790	14	7	District Engineer	72	1	9
Additions to goods-shed	443	5	1	Additional office, cashier and pay-			
Additional platform west end of				master	748	13	9
shed	89	12	5	Tool-house, &c., for Inspector			
Additional through and approach				Waring	213	19	2
road	144	9	11	Retaining wall, Devonshire-street	400	2	6
Offices of foreman and inspector	72	19	11	Six wc.'s at goods-shed	401	13	2
Enlarging goods-öffice	46	3	9	Telephone line from permanent-			
Additional box for shunter	107	2	9	way workshops, Sydney station,			
Two w.c.'s and five urinals	65	12	5	to office of Engineer for Exist-			
Sewer, and connecting do	68	18	4	ing Lines	144	0	6
Widening bridge	352	15	11	Quadrupling line and widening			
Widening Harbour-street and				tunnel, Redfern	1,719	13	2
kerbing do	211	5	2	Additional smoke-stack perma-			
Site for new meat market	333	15	3	nent-way workshops	43	3	5
Redfern-				Additional engines and engine-			
Improvements Redfern, and addi-				house for electric light	1,034	12	9
tional siding accommodation	4,231	6	2	j .	•	17	4
Interlocking apparatus	2,143		_	Wc.'s at Mortuary	572	12	4

^{*} Part cost only. † Temporary charge, to be transferred to proper Votes, when available.

No 10a.—Detail of cost of Additions and Improvements, &c.—continued.

SOUTHERN LINE—continued.

SYDNEY TO GRANVILLE—cont.	inued.			SYDNEY TO GRANVILLE—conti	nued.		
Eveleigh-	£	8.	d.	Homebush—	£		a
Interlocking apparatus	565			Additional sidings, signals, &c	7,089	. ș. 4	
Signal-box, Eveleigh Junction	112		_	Cattle-yard, loading stage, and	-	-	U
Fittings new store-buildings, and				crushes	1,994	3	6
platform	374	14	2	Land taken for sidings and cattle-	-,- v -	•	Ŭ
Additional siding	58	8	3	yards	2,039	4	1
Lengthening culvert 11 mile south	124	10	7	Interlocking apparatus			
Lengthening bridge 1 mile do	280	6	. 3	. ' '			
Lengthening bridge ½ mile do	144	17	2	Flemington— Surveying for platform	. 0	0	Ω*
McDonald Town-	•			1	8	9	9*
Land purchased for Station-				Rookwood—	•		
master's residence	841	1	8	Improvements	216	13	4 i
Additional signals and block-box		17	-	Additional siding, gates, and ap-			
Sub-way		10		proach road	456		
77			•	Goods-shed	47		4
Newtown—		10		Interlocking apparatus	49	14	5
Sub-way, Liberty-street	225	10	11	Necropolis—			
Additional sidings, down line, and approach to	9 140	17	7	Lengthening platform	113	6	6
approach to Additional signals to protect do	-	0		Auburn—			
Ambulance-shed and Mortuary	41		ပဲ	Block-box and signal	415	7	9
waiting-shed	448	18	11	Through road	93	3	8
Interlocking apparatus	773		9	Completion of goods-shed	6	3	9*
Land taken in Trafalgar-street	1,131		2	New siding	375		4.
Petersham—	•			Clyde—			٠
Interlocking apparatus	9	11	0*	,	785	15	6
Goods office	23		8*	Additional siding 12 miles 10 chains	183		1
Additional sidings	961		0.4	Wicket gates	60		ō
House and land, Station-master's			•	Additional level crossing and		•	
residence	1,174	18	0	through road · ·	5 7	1	6
Overbridges	2,942	16	3	Interlocking apparatus ,	13	19	4*
Summer Hill—		,		Duck River—			
· Additions to Station-master's house	234	15	11	Constructing dam across flood			
Lengthening platform	2,128	9	3	openings	12	17	6*
Subway	961	0~	11	Granville—	٠,		
Fencing land	26	1	5	Improvements	1,553	10 -	- 7
Office	85	9	2	Interlocking apparatus	1,324	3	2
Interlocking apparatus	467	19	1	Additional sidings	1,628		
Ashfield—				Engine shed	455	8	9
Additional room, Station-master's		٠		Cart weighbridge and office	88	18	9
house	71	3	1	Additions to water supply	`_,13	υ	0*
Overbridge, Matilda-street	138	1	4	Additional culvert	227	11	2
Interlocking apparatus	478	0	4	Machinery South	284	11	2
Croydon	.	_	_	Petersham, Ashfield, Burwood, and			
Footbridge	375	6	3	Rookwood.	٠	•	
Burwood—				Goods-sheds	1,315	16	1,
Interlocking apparatus		1	5*	GRANVILLE TO LIVERPOOL	•		
Goods-shed Bridge, Cheltenham Road, and	b	18	6*	Fairfield—	•		
	1,760	0	10	Porters' houses, Nos. 1 & 2	804	5	11
approach Enlarging booking-office	1,760	9 _.	8	Cabramatta—			
Iron footbridge	943		2	Completing waiting-shed	20	12	10*
Roof over urinal	109	8	3	Liverpool—	•		
Lengthening platform	492		10	Cart weighbridge and office	109	13	2
•			•	est only.	~~¢ .		~

No. 10a—Detail of cost of Additions and Improvements, &c.—continued.

SOUTHERN LINE—continued.

LIVERPOOL TO CAMPBELLT	OWN.			Picton to Goulburn—continued	d.		
Glenfield—	£		d.	Wingello—	£	s.	d.
773 ·			u. 11*	Loading stage and dock	73	8	4
•	7.1	19	11.	Staff and ticket office	115	6	1
Inglebuurn—				Station buildings	. 363		7
Platform approach and waiting-				Marulan—	000		•
shed	1,024	17	9		10		5*
Minto—	•			Cart weighbridge	13	2	
Goods-shed	310	14	0	Station-master's house	831		1
Completing porter's house	106	16	0	Platform and widening	52	T8	3
Campbelltown—				Towrang—	ی	_	0.45
Cart weighbridge and office	148	16	G	Station-master's house	. 5	3	0*
cart weighbridge and omce	140	10	U	Additional water-ways, 123 miles			_
Menangle to Picton				73 chains & 124 miles 55 chains	283	11	8
Menangle—				North Goulburn—			
Additional water supply	95	13	5*	Siding to cattle yards	146	2	10
	20	TO	J	Goulburn-			
Picton—				Guard's room	25	10	10
Additional engine and ash pits,				Permanent-way workshops	27	2	5
Picton Lakes	123		1	Additions to Locomotive shops	52	1	3
Additional siding	10	•	0*	Additional water supply, Mulwaree	2,077		3
W.C. and urinal	9	19	4*	Do siding accommodation			5
Drawn as Communication				Wash-house (traffic inspector's)	0	4	6*
Picton to Goulburn	•			Additions to store, asphalting, &c.	111		10
Redbank—				Additions to locomotive sidings	185		3
Siding, $56\frac{1}{2}$ miles	1,289	13	5	Do to platform at station	185		7
Signals at siding	85	3	1		323		
Hilltop				Loading dock and bank	323	TÆ	0
Entrance gate	18	11	9*	Goulburn to Yass.			
Colo—·				Breadalbane—			
Station	252	12	7	Wiring fence, 151.50, and 152.30	60	19	5
	202	10	•	Fish River—			
Coleman's-			_	Pumper's house	373	0	4
Platform		5		Gunning—			_
Station buildings	350	14	11	T 13 1 1 1 1	140	10	0
Mittagong				Lengthening platform Flood openings, 177:50 and 179:50	149 97		
Lengthening platform	120	5	1		91	1.7	5
House for engine-men	6	15	0*				
Bowral—		•		Wiring fence, Stubbs' property	55	11	0
Drinking fountain	16	14	11	Yass—			
Approach to station	320	6	11	Signal, Lime Co's. Siding	47	17	Ż
Land taken	14	10	4.	Extending verandah	76	13	6
Crane	278	7	6	Water supply	288	4	0
Weighbridge	123	14	6	Yass to Cootamundra			
Moss Vale—				וי דוד די יונים		14.	10
Verandah and platform to goods-				· ·	02	TÆ	10
shed	234	14	1	Bowning—			_
Loop siding	1,664			Culvert, 195.6	376	13	3
Widening road	450			Flood openings, 193.28	74	16	5
Meryla—		_		Do 205.5	125	11	8
Dlatform	131	17	8	Do 206·3	322	1	4
Sidings, 92 miles 45 chains	255		8	Binalong—			
•	200	9	J	Station	1,796	3	4
Baker's Siding—	2.5	٦.	أ	Crane	256	13	11
Safety siding and extending do	80	12	0	Extending platform	324	12	5
Cable's Siding—				Do siding ·	17	9	0*
Level crossing	30	2	2	Wiringfences, 204: 40 & 208: 40 to 217	57	10	8

^{*} Part cost only.

No. 10a—Detail of cost of Additions and Improvements, &c.—continued. SOUTHERN LINE—continued.

Hereing stock reserve	Yass to Cootamundra—co	ntinued.			COOTAMUNDRA TO WAGGA WAG	GA—conti	inue	d.
Engine-house	Harden—	. at	ខិន	. d.	1	_		
Kitchen for drivers	Fencing stock reserve	43	3	8	Engine have			
Weighbridge	Kitchen for drivers	212	19	0	, -			
Grane 397 6 8	Weighbridge	164	4	1				
Addition to Beverley's house C6 9 6 C Verandah, pumper's house 26 19 3	Guard's room	494	14	4	Crono			
Verandah, pumper's house	Addition to Beverley's house	66	9	6	Catalanna			
Murrumburrah	Verandah, pumper's house	26	19	3				
Crane					1	=		
Siding	O	K.C.	14	11		•		
Semaphore signal 54 16 7 Widening platform 441 12 9 Additional signal 37 19 4 Additional signal 37 19 10 Additional signal 37 19 10 Additional signal 37 19 10 Additional signal 37 19 10 Additional signal 37 19 10 Additional signal 37 19 10 Additional signal 37 19 10 Additional signal 37 19 10 Additional signal 37 19					_			
Widening platform				-				-
Goods-shed				-				_
Gatehouse		4.4.T	14	ฮ	01-1-1			
Platform, &c. 76 17 1 Wallendbeen						. 100	อ	11
Wallendbeen					Wagga Wagga			
Walledendheen	Platform, &c	76	17	1	Stock-yards	. 25	17	0
Additions to station	${\it Wallendbeen}$ —				I			
Culvert, Edward-street 28 5 0	Additions to station	59	19	7				
Teserve 78 11 3 Additions to goods-shed 106 14 3 7 12 0 14 17 12 0 16 14 18 15 14 10 16 14 11 10 16 14 11 10 16 14 11 10 16 14 11 10 16 14 11 10 16 14 11 10 16 16 16 16 16 16	Stock-yards and fencing stock							
Cart-weighbridge 142 9 7 Signals 17 12 0 8 Signals 17 12 0 8 Signals 17 12 0 8 Siding for Dr. O'Connor 136 8 6 Do 316 65 45 1 3 Siding for Dr. O'Connor 136 8 6 Do 316 65 45 1 3 Siding for Dr. O'Connor 136 8 6 Do 316 65 45 1 3 Siding for Dr. O'Connor 14 11 10 Contamundra— Crane 41 11 10 Contamundra— Contamundra— Crane 1 2 6	reserve	78	11	3				•
Cart-weighbridge 142 9 7 Signals 17 12 0 8 Block siding 881 1 11 Ladies' room 95 2 4 Siding for Dr. O'Connor 136 8 6 Do 316:65 45 1 3 Siding for Dr. O'Connor 136 8 6 Do 316:65 45 1 3 Siding for Dr. O'Connor 136 8 6 Do 316:65 45 1 3 Siding for Dr. O'Connor 136 8 6 Do 316:65 45 1 3 Siding for Dr. O'Connor 136 8 6 Do 316:65 45 1 3 Siding for Dr. O'Connor 136 8 6 Do 316:65 45 1 3 Siding for Dr. O'Connor 136 8 6 Do 316:65 45 1 3 Siding for Dr. O'Connor 136 8 6 Do 316:65 45 1 3 Siding for Dr. O'Connor 136 8 6 Do 316:65 45 1 3 Siding for Dr. O'Connor 136 8 6 Do 316:65 Material Siding for Dr. O'Connor 136 8 6 Do 316:65 Material Siding for Dr. O'Connor 136 8 6 Do 316:65 Material Siding for Dr. O'Connor 136 8 6 Do 316:65 Material Siding for Dr. O'Connor 136 8 6 Do 316:65 Material Siding for Dr. O'Connor 136 8 6 Do 316:65 Material Siding for Dr. O'Connor 136 8 6 Do 316:65 Do 316:65 Material Siding for Dr. O'Connor 136 8 6 Do 316:65 Material Siding for Dr. O'Connor 136 8 6 Do 316:65 Material Siding for Dr. O'Connor 136 8 6 Do 316:65 Material Siding for Dr. O'Connor 136 8 6 Do 316:65 Material Siding for Dr. O'Connor 136 8 6 Do 316:65 Material Siding for Dr. O'Connor 136 18 6 Do 316:65 Material Siding for Dr. O'Connor 136 8 6 Do 316:65 Material Siding for Dr. O'Connor 136 8 6 Do 316:65 Material Siding for Dr. O'Connor 24 8 0 Do 316:65 Material Siding for Dr. O'Connor 24 8 0 Do 316:65 Material Siding for Dr. O'Connor 24 8 0 Do 316:65 Material Siding for Dr. O'Connor 24 8 0 Do 316:65 Material Siding for Dr. O'Connor 24 8 0 Do 316:65 Material Siding for Dr. O'Connor 24 8 0 Do 316:65 Do 316:	Additions to goods-shed	106	14	3	WAGGA WAGGA TO AL	BURY.		
Signals Siding for Dr. O'Connor 136 8 6 6	Cart-weighbridge	142	9		Sandy Charle			
Ladies room	Signals	17	12	0*	,			_
Fencing pumper's house and cottage	<u> </u>	81		11		. 136	8	6
Fencing pumper's house and cottage Al 11 10	Ladies' room '	95	2	4	Do 316 [.] 65	. 45	1	3 .
Fencing pumper's house and cottage	Jendalee				Yerong Creek—			
Cottage All 11 10 Cootamundra Crane All 11 10 Cootamundra Crane All 11 10 Cootamundra Extending platform and altering signals 181 15 4 Cootamundra Extending platform and altering signals 181 15 4 Cootamundra Tootage 181 15 4 Cootamundra Tootage 181 15 4 Cootamundra Tootage 181 15 4 Cootamundra Tootage 181 15 4 Cootamundra Tootage 181 15 4 Cootamundra Tootage 181 15 4 Cootamundra Tootage 181 15 4 Cootamundra Tootage 181 15 4 Cootamundra Tootage 181 15 4 Cootamundra Tootage 181 15 4 Tootage 181 18	Fencing pumper's house and				Coods about	0	_	۰.
Cotamundra	- · · · · · · · · · · · · · · · · · · ·	41	11	10	Looding store			•
Cotamundra	•				J ,,	. 105	1	11
Stock-yards 997 18 2		1	2	6†	Culcairn—			
Dam				-,		. 997	18	2
Signals Siding					Dom	0.4		
Siding to stock-yards 12 13 3* Lengthening platform 4 11 3* Mullaley's Siding Siding to stock-yards Lengthening platform 4 11 3* Lengthening platform 4 11 3* Mullaley's Siding Stock-yards 19 9 0* Stock-yards 19 9 0* Meigh-bridge 112 14 5 Stock-yards 19 9 0* Meigh-bridge 112 14 5 Stock-yards 19 9 0* Meigh-bridge Mei	- -	101	15	4.	Weigh-bridge	. 133	19	0
Mullaley's Siding— Signals 65 16 0 Weigh-bridge 112 14 5 5 Cungegong— 31 1 11 Stock-yards 19 9 0* Wiring Mr. Cowley's fence 31 1 11 Stock-yards 19 9 0* Wiring between 259 16 and 260 60 22 1 0* Asphalting station 73 6 11 Cart weigh-bridge and office 46 4 8 Refreshment-room, &c. 2,382 13 6 Additional water supply 43 8 3 Covering in booking office 31 2 1 Improving engine-pits 50 15 4 Additional signals 2 8 11* Shed for gas-engine 43 6 4 Turntable 10 18 11‡ Interlocking charges at various stations 70 9 9 Well and water supply Cottages and kitchen for locomo-	signais	101	10	7.				
Signals 65 16 0 Weigh-bridge 112 14 5 Cungegong— 31 1 11 Stock-yards 19 9 0* Wiring Mr. Cowley's fence 31 1 11 Albury— Signals 82 3 7 Albury— Wiring between 259 16 and 260 60 22 1 0* Asphalting station 73 6 11 Cart weigh-bridge and office 46 4 8 Refreshment-room, &c. 2,382 13 6 Well and carting cylinders 104 18 9 Additional water supply 43 8 3 Covering in booking office 31 2 1 Improving engine-pits 50 15 4 Additional signals 2 8 11* Shed for gas-engine 43 6 4 Turntable 10 18 11‡ Interlocking charges at various 555 14 11 Cottages and kitchen for locomo- 555 14 11	COOTAMUNDRA TO WAGGA	Wagga.			Lengthening platform	4	.11	3*
Signals 65 16 0 Weigh-bridge 112 14 5 Cungegong— 31 1 11 Stock-yards 19 9 0* Wiring Mr. Cowley's fence 31 1 11 Albury— Signals 82 3 7 Albury— Wiring between 259 16 and 260 60 22 1 0* Asphalting station 73 6 11 Cart weigh-bridge and office 46 4 8 Refreshment-room, &c. 2,382 13 6 Well and carting cylinders 104 18 9 Additional water supply 43 8 3 Covering in booking office 31 2 1 Improving engine-pits 50 15 4 Additional signals 2 8 11* Shed for gas-engine 43 6 4 Turntable 10 18 11‡ Interlocking charges at various 555 14 11 Cottages and kitchen for locomo- 555 14 11	Mallalan's Sidina				Gerngeru—			
Cungegong— Stock-yards <td>•</td> <td>65</td> <td>16</td> <td>'n</td> <td>- •</td> <td></td> <td></td> <td></td>	•	65	16	'n	- •			
Wiring Mr. Cowley's fence 31 1 11 Signals 82 3 7 Wiring between 259 16 and 260 60 22 1 0* Bethungra— Vater crane, and additional water supply 2382 13 6 Well and carting cylinders 104 18 9 8 7 Covering in booking office 31 2 1 Well and carting cylinders 47 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 2 1 1 1 1 2 1 3 1 1 1 1 1 1 1 1 2 3 1 1 1 2 3 1 2 1 3 1 2 1 3 1 2 1 <td< td=""><td>•</td><td>00</td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	•	00						
Signals 82 3 7 Wiring between 259 16 and 260 60 22 1 0* Bethungra— Water crane, and additional water supply 2,382 13 6 Well and carting cylinders 170 8 7 Additional water supply 43 8 3 Stock-yards 104 18 9 18 10		.01	-	11	Stock-yards	19	9	0*
Wiring between 259 16 and 260 60 22 1 0* Asphalting station	•				Albury—			
Withing between 255 to fail of 255 to	•				Asphalting station	73	6	11
Bethungra— Water crane, and additional water supply	J	22	T	0*				
Water crane, and additional water supply Additional water supply 43 8 3 Supply 104 18 9 Covering in booking office 31 2 1 Improving engine-pits 50 15 4 Additional signals 2 8 11* Shed for gas-engine 43 6 4 Turntable 10 18 11‡ Interlocking charges at various stations 555 14 11 Cottages and kitchen for locomo- 555 14 11	The state of the s	•						
Supply 170 8 7 Well and carting cylinders 104 18 9 Stock-yards 47 1 1 Illabo— Signals 43 0 2 Flood openings 221 2 10 Junce— Well and water supply 555 14 11 Covering in booking office 31 2 1 Improving engine-pits 50 15 4 Additional signals 2 8 11* Shed for gas-engine 10 18 11‡ Interlocking charges at various stations 70 9 9 E110,857 8 1		1 = 0	_	-		•		
Well and carting cylinders 104 18 9 8 18 9 8 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1								_
Stock-yards 47 1 1 Additional signals 2 8 11* Signals 43 0 2 Turntable 10 18 11‡ Flood openings	-	-		-				
Signals 43 0 2 Turntable 10 18 11‡ Flood openings 221 2 10 Interlocking charges at various Junce— stations 70 9 9 Well and water supply .555 14 11 70 9 9 Cottages and kitchen for locomo- £110,857 8 1	· · · · · · · · · · · · · · · · · · ·	47	T	T.				
Signals 43 0 2 Flood openings 221 2 10 Junce— Well and water supply 555 14 11 Cottages and kitchen for locomo- £110,857 8 1								
Flood openings	•				Turntable	10		_
Junce— stations 70.99 Well and water supply 555 14 11	Flood openings	221	2	10	Interlocking charges at various	,		•
Well and water supply 555 14 11 Cottages and kitchen for locomo- £110,857 8 1	Junee—				atationa		9	9
, , , , , , , , , , , , , , , , , , ,		555	14	11				
tive men 2,952 7 1	Cottages and kitchen for locomo-	-		ĺ	į a	3110,857	8	1
	tive men	2,952	7	1	·			

No. 10a—Detail of cost of Additions and Improvements	, &c.—continued.
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No. 10a-DETAIL of o				· ·			
·	SOUT	H-V	VES	TERN LINE.			
Junee to Narrandera	.•]	NARRANDERA TO HAY.	£	s.	d.
Old Junee—	£	8.	d.	Flood openings, 66.65	349	11	3
Crane	64	11	0	Hulong—			
.Weigh-bridge	128	14	2	Crane	` 8 2	13	10
				Cart weigh-bridge	178	4	3
Coolaman—	•			4 1 1 1 1 1 1 1	1,0	9	9*
Crane	93		0	-	1	J	J
Cart weigh-bridge	158	8	4	Darlington—			_
Approach to siding	51	15	9	Crane	113	7	8
Devlin's Siding—				Carrathool—			
Signals	63	8	11	Crane	136	5	11
Lengthening and converting Dev-	•	Ū		Signals	9	1	9*
lin's siding in loop	332	7	7	5			
Waiting-shed, platform, and level	902	•	•	Uardry—	10	3.4	6*
· · · · · · · · · · · · · · · · · · ·	. 45	10	6	Metalling approach to station	19		
	39	0	2	Level crossing, 142.71	287	1	7
Points at siding	99	U	۵	Beabula—			
Grong Grong—				Lamp-room	29	15	8
Goods-shed	337	4	8	Hay—	•		
Loop siding	138	1	0	Crane	54	11	0
Flood openings, 52 69½	187	7	7	Alterations to stock-yard	1,428		4
~ -	•			Truck weigh-bridge	150	3	4
Narrandera—	917	14.	10	33711 1 1	142	2	1
Cart and truck weigh-bridge	217		4*	Widening approach	1,72		
Cranes	5	0	_		£4,955	16	5
Lengthening siding	39	5	8	,	£4,900	10	J
Altering engine-pit	70	7	0	_			
·	W	ES	TEI	RN LINE.			
GRANVILLE TO PENRIT	т			GRANVILLE TO PENRITH—con	rtinued.		
Parramatta—	£	8.	d.	South Creek—	£	s.	d.
—	290		3	Crane	251	7	.0
Improvements	200	1	9	T 1' '		18	5*
Weigh-bridge and office approach			-		10	10	Ü
Over-bridge, &c	2,904		11	Penrith— Additional water supply loco-			
Platform near Domain, 15½ miles	925	5	1 6				8
Signals, &c., up platform	65	18		! L '	555		0
Station	00		-	motive tank	5 5 5	7	
	29	7	5	Additional siding accommodation,			7
Interlocking apparatus		7	-	Additional siding accommodation, improvements, &c	5,075	4	7
		7	5	Additional siding accommodation, improvements, &c Workshops, locomotives, &c	5,075 1,829	4 0	6
Interlocking apparatus		7	5	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge	5,075 1,829	4	
Interlocking apparatus Harris Park— Platform	. 4	7 10	5 10*	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box,	5,075 1,829 21	4 0 11	6 4*
Interlocking apparatus Harris Park— Platform Wentworthville—	. 4a . 4a	7 10 4	5 10* 0*	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box, Herd's Crossing	5,075 1,829 21 30	4 0 11 8	6 4* 10
Interlocking apparatus Harris Park— Platform	. 4a . 4a	7 10	5 10* 0*	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box, Herd's Crossing Improvements	5,075 1,829 21 30 3,918	4 0 11 8 17	6 4* 10 4
Interlocking apparatus Harris Park— Platform Wentworthville— Signals	. 4a . 4a	7 10 4	5 10* 0*	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box, Herd's Crossing	5,075 1,829 21 30 3,918	4 0 11 8	6 4* 10
Interlocking apparatus Harris Park— Platform Wentworthville— Signals Westmead—	. 4a . 4a	7 10 4 13	5 10* 0*	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box, Herd's Crossing Improvements	5,075 1,829 21 30 3,918 28	4 0 11 8 17	6 4* 10 4
Interlocking apparatus Harris Park— Platform Wentworthville— Signals Westmead— Waiting-shed	4. 4. 87	7 10 4 13	5 10* 0*	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box, Herd's Crossing Improvements Stockyards sidings	5,075 1,829 21 30 3,918 28	4 0 11 8 17	6 4* 10 4
Interlocking apparatus Harris Park— Platform Wentworthville— Signals Westmead— Waiting-shed Diverting Oreek—	4 4 87	7 10 4 13	5 10* 0* 10	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box, Herd's Crossing Improvements Stockyards sidings Penrith to Bathurst	5,075 1,829 21 30 3,918 28	4 0 11 8 17 15	6 4* 10 4 2
Interlocking apparatus Harris Park Platform Wentworthville Signals Westmead Waiting-shed Diverting Creek Do do 17 miles 53 chains	4. 4. 87	7 10 4 13	5 10* 0* 10	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box, Herd's Crossing Improvements Stockyards sidings Penrith to Bathurst Emu Plains— Station and residence	5,075 1,829 21 30 3,918 28	4 0 11 8 17 15	6 4** 10 4 2
Interlocking apparatus Harris Park— Platform Wentworthville— Signals Westmead— Waiting-shed Diverting Oreek— Do do 17 miles 53 chains Seven Hills—	4 4 87	7 10 4 13	5 10* 0* 10	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box, Herd's Crossing Stockyards sidings Penrith to Bathurst Emu Plains— Station and residence Signals	5,075 1,829 21 30 3,918 28 c.	4 0 11 8 17 15	6 4* 10 4 2
Interlocking apparatus Harris Park— Platform Wentworthville— Signals Westmead— Waiting-shed Diverting Oreek— Do do. 17 miles 53 chains Seven Hills— Additional sidings and through-	4 87 131	7 10 4 13 16 3	5 10* 0* 10 9	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box, Herd's Crossing Improvements Stockyards sidings Penrith to Bathurst Emu Plains— Station and residence Signals Siding	5,075 1,829 21 30 3,918 28 c.	4 0 11 8 17 15	6 4* 10 4 2
Interlocking apparatus Harris Park— Platform Wentworthville— Signals Westmead— Waiting-shed Diverting Oreek— Do do 17 miles 53 chains Seven Hills—	4 4 87	7 10 4 13 16 3	5 10* 0* 10 9	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box, Herd's Crossing Stockyards sidings Penrith to Bathurst Emu Plains— Station and residence Siding Siding The Valley—	5,075 1,829 21 30 3,918 28 c.	4 0 11 8 17 15 10 10 17	6 4* 10 4 2
Interlocking apparatus Harris Park— Platform Wentworthville— Signals Westmead— Waiting-shed Diverting Oreek— Do do. 17 miles 53 chains Seven Hills— Additional sidings and through-	4 87 131	7 10 4 13 16 3	5 10* 0* 10 9	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box, Herd's Crossing Stockyards sidings Stockyards sidings Emu Plains— Station and residence Signals Siding	5,075 1,829 21 30 3,918 28 5. 1,304 31 13	4 0 11 8 17 15 10 10 17	6 4** 10 4 2 9 3 10
Interlocking apparatus Harris Park— Platform Wentworthville— Signals Westmead— Waiting-shed Diverting Oreek— Do do. 17 miles 53 chains Seven Hills— Additional sidings and through- road	4 87 131	7 10 4 13 16 3	5 10* 0* 10 9	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box, Herd's Crossing Stockyards sidings Stockyards sidings Station and residence Signals Siding Siding	5,075 1,829 21 30 3,918 28 c. 1,304 31 13	4 0 11 8 17 15 10 10 17 4 11	6 4* 10 4 2 9 3 10 11 5
Interlocking apparatus Harris Park— Platform Wentworthville— Signals Westmead— Waiting-shed Diverting Creek— Do do. 17 miles 53 chains Seven Hills— Additional sidings and through- road Blacktown—	4 4 87 131 54 1,377 599	7 10 4 13 16 3	5 10* 0* 10 9 8	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box, Herd's Crossing Improvements Stockyards sidings Penrith to Bathurst Emu Plains— Station and residence Siding Siding Enlarging waiting-shed, &c	5,075 1,829 21 30 3,918 28 c. 1,304 31 13	4 0 11 8 17 15 10 10 17 4 11 1	6 4** 10 4 2 9 3 10
Interlocking apparatus Harris Park— Platform Wentworthville— Signals Westmead— Waiting-shed Diverting Creek— Do do. 17 miles 53 chains Seven Hills— Additional sidings and through- road Blacktown— Crane	4 4 87 131 54 1,377 599	7 10 4 13 16 3 17 5 14	5 10* 0* 10 9 8	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Weigh-bridge	5,075 1,829 21 30 3,918 28 5. 1,304 31 13 85 41 79	4 0 11 8 17 15 10 10 17 4 11 1	6 4* 10 4 2 9 3 10 11 5
Interlocking apparatus Harris Park Platform Wentworthville Signals Westmead Waiting-shed Diverting Creek Do do. 17 miles 53 chains Seven Hills Additional sidings and through-road Blacktown Crane Signals	4 4 87 131 54 1,377 599 39	7 10 4 13 16 3 17 5 14 5	5 10* 0* 10 9 8 5 8 4 11	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box, Herd's Crossing Stockyards sidings Stockyards sidings Station and residence Signals	5,075 1,829 21 30 3,918 28 1,304 31 13 85 41 79 17	4 0 11 8 17 15 10 10 17 4 11 5	6 4* 10 4 2 9 3 10 11 5
Interlocking apparatus Harris Park— Platform Wentworthville— Signals Westmead— Waiting-shed Diverting Creek— Do do. 17 miles 53 chains Seven Hills— Additional sidings and through- road Blacktown— Crane Signals Station-office for Inspector Goods-shed	4 4 87 131 54 1,377 599 39 40	7 10 4 13 16 3 17 5 14 5	5 10* 0* 10 9 8 5 8 4 11	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box, Herd's Crossing Stockyards sidings Stockyards sidings Station and residence Signals Siding Siding Enlarging waiting-shed, &c Verandah and tank Springwood—. Station and platform Station and platform Springwood—. Station and platform Station and platform Springwood—. Station and platform Springwood—. Station and platform	5,075 1,829 21 30 3,918 28 5. 1,304 31 13 85 41 79	4 0 11 8 17 15 10 10 17 4 11 5	6 4* 10 4 2 9 3 10 11 5 10 11*
Interlocking apparatus Harris Park Platform Wentworthville Signals Westmead Waiting-shed Diverting Creek Do do 17 miles 53 chains Seven Hills Additional sidings and through-road road Blacktown Crane Signals Station-office for Inspector	4 4 87 131 54 1,377 599 39	7 10 4 13 16 3 17 5 14 5 12	5 10* 0* 10 9 8 5 8 4 11 5	Additional siding accommodation, improvements, &c Workshops, locomotives, &c Weigh-bridge Watch-box and pointsman's box, Herd's Crossing Stockyards sidings Stockyards sidings Station and residence Signals	5,075 1,829 21 30 3,918 28 1,304 31 13 85 41 79 17	4 0 11 8 17 15 10 10 17 4 11 5 5	6 4* 10 4 2 9 3 10 11 5 10 11* 10

No. 10a—Detail of cost of Additions and Improvements, &c.—continued.

			WES'	TEI	RN :	LINE—continued.			
PENRITH TO B.	ATHUR	st—co				PENRITH TO BATHURST-con	tinued.		
Lawson—			£	8	. d	1	£	8.	. `d.
Water-closet		•••	68	4 9	96	Station buildings	387		
Wentworth Falls—			٠,			Stock-yards	24	10	
Water supply, impro	vemer	ats to				Verandah, Station-master's house	151	18	11
dam, &c			8	4 19	9 1	93 f 1 7	235		
Level crossing and gat	ъе		38		7 10	Additional water supply			11
Katoomba						Locksley—		•	
Goods-shed and dock			129	9 {	5 9	Kitchen	0.0	^	
Loading-stage				3 1			96	0	4
Additional siding				2 16		Brewongle—	·		•
Medlow—						Water supply	116		
Erecting waiting-shed			78		. =	Level crossing 134 miles 75 chains	47	14	10
Erecting gates	••••	•••	32			Raglan—			
Blackheath—	•••	•••	02	, .	0	Crane	392	13	1
			1.050		•	Kelso-			
Station, platform, &c.	•••	•••	1,070) 14	8	Erecting additional platform	158	7	4
Mount Victoria—						Siding to stock-yards	290	8	2
Weigh-bridge and office			94	: 12	6	Weighbridge and office	215	9	4
Additional platform, an	d leng	then-				Verandah, Station-master's house		14	_
ing	•••	•••	1,088			Water supply and tank	74	0	2
Guards' barracks	•••	•••	371			Bathurst—	•		
Carriage-dock	• • •	,	262						
Enlarging yard Additional sidings	•••	•••	1,067		-	Permanent-way workshops	457	5	9
Lengthening culvert	•••	•••	712		4	Improvements to station, &c	4,617	18	8
Hartley Vale—	•••	•••	22	7	0*	1.1.1.		•	
Qidin on			990	77	31		8,758	0	8
Goods-shed	•••	•••	289 189			Office for district engineer Latrines for employees	108		10
	•••	•••	109	19	Ð	Samanhara	65	1	2
Mount Wilson— Additional water supply			0.0	,	,	707	109	2	3*
Crossings and sidings	-	•••	26 520		5	Siding and through mad	103 146	3	3, 4
Lengthening culvert	•••	•••	530		6	Laying water-pipes	175	10	4 <u>.</u> 8
Esk Bank—	•••	•••	37	6	9	Turntable	30		2
707-141 1 1			- -	٠		Machinery	,	15,	
Q' 1.	•••	•••	74		6	Metalling and enlarging yard	1,887		6
~~	•••	•••	42	5	8	Lamp and store room			8
Interlocking apparatus	•••	•••	464 44	5 8	·6 4	Office for Locomotive Inspector	20	17	6 *
Lithgow—	••	•••	77	0	4	Goods-shed and office	40	16	3
Platform and lengtheni	** **		. 154	10		Cupola furnace	111	1	4
Flood-openings		• • •	174		4	Timber drying-shed	42	5	5
Interlocking apparatus,			236 40		0	Plumber's workshop	94	8	0
··· -	Lig Li	ag	40	U	1	Iron rack for store	97	17	6
Bowenfells—	16	a .1				Flood openings, Vale Road	20		4
Level crossing gates, 98 Weigh-bridge			28		. 4	Additional locomotive siding	419	9 1	
	•••	•	60	0	0	Subway Sand furnace	7		9*
Wallerawang—						TT 1	6]		9*
Carriage dock and wall			25	7	6	Hydrants Fire and locomotive tanks		5 1	
Crane Truck weighbridge and		•••	338	3	4	Fire and locomotive tanks	127	15	7
	omce	 :	139			BATHURST TO ORANGE.			
Erecting verandah Mu	•		· 44	2	1	Perth-			
form	ugee I	prau-	1,219	18	7	Crane	. 20	0	·0*
Wc			32		4	Store-room and porter's kitchen	94 1		0^ 7
Signal at coal siding		•••		14	4*	Water supply	65		•
Rydal-			•		-	George's Plains—		_	-
Water supply		•••	23	10	10*		123 1	'5	2
•									4 .

No. 10a-DETAIL of co	st of Additions and	Improvements, &c.—continued.
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				and Improvements, &c.—continued.	
	WESTE	RN	LIN	NES—continued.	
BATHURST TO ORANGE-con	tinued.	•	ì	ORANGE TO WELLINGTON—cont	
Wimbledon—	£	s.	d. ˈ	Wellington—continued—	£ s. d.
Signals	66	0 1	0	Additional siding to cattle-yards	
Ticket office	92	15	7	and office	212 12 8
Wiring fence, Mullen's land	87	3	6	Culvert, &c., Thornton's crossing	3 17 11*
Siding and lengthening do	167	3	8	Culvert, &c., 246 miles 30 chains	
Wc. and urinals	37	2	4	and 247 miles 6 chains	464 11 10
37 1 11				Wellington to Dubbo.	
Newbridge—	967	18 1		Maryvale —	
Land for extra accommodation	97		7	Urinals	7 10 0*
Weighbridge and office		-	1	Water supply	41 14 1
Additional siding		10 1	- 1	Water Supply—	
Signals	165	1	4	000 1 00 1 1	531 8 10
Wiring fence Wilson and Haw-		10			001 0 10
kins' land	01	12	0	Murrumbidgerie—	40 1 10
Blayney	•			Water supply	46 1 10
Crane	484	10	2	Siding	3 9 0*
0 : 0 :	•			Dubbo-	
Spring Grove—.	2 24	10	0	Water supply cattle-yards, loco.,	•
Crossing siding	24 4 9		0*	&c	964 9 11
Wiring Mr. Osborne's fence			0	Locomotive cottages	705 16 6
Gate-house	75 11		3*	Signals at stock-yards	218 19 8
Water supply	11	Э	3"	Locomotive office	23 1 3*
Spring Hill—			ı	Cart weighbridge and office	128 9 4
Loading-stage and approach		18	0	Fencing approach to stock-yards	77 15 0
Cranes			1	Gatekeeper's watch-box, Brisbane,	
Weighbridge	13	15	0*	Darling, and Charles streets	56 10 4
Water supply, &c	16	6	8*	Verandah traffic cottages	56 8 10
Orange—				- Ballast siding	209 5 4
Widening crossing and approach	ı			Ticket-office, Bourke road cross-	
road, &c	4 1-	13	10	ing	41 9 5
Crane	357	9	6	Dubbo to Bourke.	
Sidings	. 162	6	1	Narromine—	
Loading-stage and weighbridge	. 64	7	3	Crane	300 8 0
3				Weighbridge and office	181 8 9
ORANGE TO WELLING	ron.			Signals, ballast siding	5 9 4*
W. W. an Charle				Office for District Engineer	1 14 1*
Mullion Creek—	~			Trangic—	
Siding and converting block siding	-	7 11	1	. m. 1 . M	99 1 9
into loop Tank water supply		7 11 3 14	1	777 tot 1 10 1 777	133 1 6
•••	. 00) 14E	TT	Goods-shed and approach	161 1 8
Kerr's Creek-				Level crossing gates, Dandaloo	101 1 3
Porter's house and cottages		7 19	6		7 1 4*
Platform and office	+	6 11	10*	Siding	1 12 0*
Warne—					1 12 0
Water supply	13	2 12	5	Nevertire—	900 11 0
Platform	2	1 18	6		362 11 6
Ironbarks—				Weighbridge and office	116 10 5
Carriage dock	7	7 8	7	Signals	1 6 2* 90 12 4
•	1	2 18	. 0	Carriage dock and siding	90 12 4
Springs—				Nyngan	196 0 0
Dantan's have and ashtens	68	88 6	8	Cart weighbridge and office	126 0 9
•	08		. 0	District Engineer's omce	68 2 0 76 10 2
Apsley—		00 ~	بر (Additional water supplyand pumps	76 10 2 520 12 9
J	;. č	38 8	3 5	Crane Additional office and Wc	74 12 5
Wellington—	_			.	1 T L L J
		19 · (£62,643 16 9
Weighbridge	(30 (0)	

No. 10a-Detail of cost of Additions and Improvements, &c.-continued.

WESTERN LINE—continued.

WALLERAWANG TO MUD	GEE.			BLACKTOWN TO RICHMOND—continued.
Piper's Flat—		-		Riverstone— £ . s. d.
Signals, Wallerawang Coal Co.'s	£	s.	d.	Improvements to Station 97 7 3
siding	141	1	0	Mulgrave—
Flood openings, 113 miles	28	12	1	•
Cullen Bullen—				Wc. and urinal 140 6 11
Piling bank	46	11	9	Additional water supply 156 10 10
	20		v	Windsor—
Capertee—	000	_	^	Passenger station and office for
Six movable houses				inspector 1,207 15 11
Signals	7	14	10	Retaining wall 39 6 2
Rylstone—		_		Richmond-
Portable houses	478	9	10	Improvements to new station, &c. 817 0 0
Mudgee—				Goods-shed 48 0 2
*Movable houses	. 12	16	3	House for Station-master 41 5 0
•	£1,708	13	11	Sidings 201 14 0
				Weigh-bridge and office 167 19 10
BLACKTOWN TO RICHM	OND			Crane 335 11 11
Schofields—				Stuamathaning building 0.044 0.104
Retaining-wall and loading bank	Ī			Strengthening bridges 2,644 2 107
and fencing approach	400	1	10	£6,317 2 8
# Dank and and	. m		,	

* Part cost only. † Temporary charge. To be transferred when vote is available.

	•			Sum	MARY.					
								£	8.	d.
North		•••	•••	•••	•••	•••		24,397	18	4
North-	western	۱.,.						3,689	3	4
South	•••				•••		•••	110,857	8	1
South-	western			•••			•••	4,955	16	5
West		•••	•••	•••	$\pounds 6$	3,040	7 10			
Less	overch	arges	in prev	ious v	ears.	396	11 1	_		
•		O	•	,				62,643	16	9
Waller	awang 1	to Ca	pertee	•••	•••			1,708	13	11
Richmo	ond	•••	•••	***	•••			6,317	2	8
								£214,569	19	6

Schedule of Additions and Improvements to Tramway Lines during 1883:-

							£	g.	d.
Additional	coke-sheds, and enla	rging d	0.	•••	•••	•••	1,154	3	5
,,	waiting-sheds and pl	atforms			•••	•••	1,781	13	0
**	sheds and offices for	employ	és, &c.				1,045	16	1
,,	store buildings		•••	•••	•••	•••	315	8	10
Retaining-v	valls and fencing		•••	•••	•••		203	9	3
Additional	tanks and water sup	ply	•••	•••	•••	•••	892	7	1
,,	ash and engine pits	•••		•••	•••		147	10	7
**	lamps, waiting-sheds	, and ste	opping	-places			130	11	8
,,	furnaces and forges,	worksh	ops	•••			551	15	0
,,	dwelling-house, Ran	dwick	•••			•••	1,570	6	4
,,	signals erected, Cam	den line) .	•••		•••	239	15	3
,,	level crossings and t	renches			•••	•••	875	4	8
,,	carriage dock, &c.	•••	•••		•••	•••	447	13	11
,,	stock-yard	••••	•••	•••	•••	•••	167	17	3
"	sidings and through	roads	•••	•••	•••	•••	1,919	8	9
Sundry add	itional works		•••	•••	•••	•••	136	4	4
						£1	1,579	5	5

STATEMENT showing the Cost of Construction and Cost per Mile open on different Sections of the Railway Lines, to 31st December, 1883.

Lines opened for Traffic.	Length in Miles.	Total Cost.	Cost per Mile.
	, No.	£	£
Darling Harbour Branch	I	148,980	148,980
Sydney to Granville	13	970,138	74,626
Haslem's Creek Branch	<u>,</u>	6,459	12,918
Franville to Wodonga	3741	4,070,648	10,870
unee to Hay:	167	933,007	-5,587
Franville to Nyngan	364	4,019,212	11,042
Wallerawang to Capertee	22	190,757	8,671
Blacktown to Richmond	16	165,364	10.335
Vewcastle to Armidale	260	3,213,378	12,359
Werris Creek toNarrabri	97	557,754	5,750
Bullock Island Branch	11	50,803	33,869
Morpeth Branch	4	57,602	14,400
Average cost of construction£	1,3201	14,384,102	10,893
Pitt-street Tramway 4,878	i		
*Rolling Stock			
Machinery 95,968	,		
Workshops—Redfern and Eveleigh 233,945			
Furniture			
		2,531,413	
Average Cost per mile, including all charges	1,3201	16,915,515	12,810

^{*} In the cost of rolling stock that used on the Camden Line is included, as he vehicles were those originally provided for railway service Total value of stock so used, £5,623.

No. 12.

Table showing the number of Miles opened per annum, and the annual and average daily Mileage of Trains, from the commencement, on 26th September, 1855, to 31st December, 1883.

	Year.	Opened per annum.	Total opened.	Total Train Milcage.	Average Daily Mileage.
1855		14	14 ′	14,107	147
1856		9	23	68,371	187
1857		17	40	107,822	295
1858		15 Nil -	55	141,495	388
1859		Nil -	55	147,618	404
1860	***************************************	15	70	179,249	491
1861			73	214,881	589
1862	·	1 1	97	274,565	752
1863	***************************************	27	124	315,177	. 863
1864		19	143	415,422	1,138
1865		Nil ,	143	483,446	1,324
1866	*** (**********************************	Nil	143	490,475	1,344
1867	***************************************	61 ·	204	. 600,751	1,646
1868		43.	247	768,529	2,106
1869		-	318	893,552	2,448
1870	***************************************	21	339	901,139	2,469
1871	***************************************	19、	358	931,333	2,552
1872		40 .	398	1,036,255	2,839
1873		5	403	1,109,879	3,641
1874		Nil	403	1,249,233	3,423
1875	·	34 ·	437	1,472,204	4,033
1876			500	1,688,964	4,627
1877	***************************************	89	598	2,106,802	5,772
1878		901	· 688 1	2,655,176	7,274
1879		46	7341	2,932,463	7,572
1880	•		• 849½	3,239,472	8,851
1881		146	$995\frac{1}{2}$	3,923,920	10,750
1882	***************************************	273	1,2681	4,851,127	13,291
1883	_ •••··································		1,3201	5,937,261	16,266
•		, ,		.	
				1	

An average length of 46 miles opened per annum.

Note.—Between Sydney and Granville, including the Darling Harbour Branch, there are 34½ miles of sidings, the cost of which is included in the amounts shown. In 1882 the cost of the Locomotive, Permanent Way, and Traffic Shops and Sheds, &c., at Sydney, was included in Sydney to Granville. It is in this year shown separately below. (See note on No. 9.) On the Bullock Island Branch there are 5 miles of sidings, the cost of which is included.

No. 13. RETURN of EARNINGS from Traffic in Passengers and Goods during year 1883.

	Traffic 1883.			Gross I	Earnings from Cos	aching.					Gross Earni	ngs from Goods.	- 12 02		
Year and Name of Railway.	in for		Passengers.		Excess-Luggage,				,	1		1		1	Gross Earnings
	Miles open for Traffic on 31 Dec., 1883.	1st and 2nd Class Passengers.	Holders of Season Tickets	Total from Passengers.	Parcels, Cloak Room, Horses, Car- riages, and Dogs.	Mails.∙	Miscellaneous.	Total from Coaching.	Live Stock.	Minerals.	Wool	General Merchandise.	Miscellaneous.	Total from Goods.	from all sources.
1883.		£ s. d.	& s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
South and West	958	440,791 14 6	28,933 10 1	469,725 4 7	42,674 0 9	20,060 12 6	7,043 6 10	539,503 4 8	127,343 16 4	83,572 5 2	105,037 15 6	619,566 8 0	4,362 13 5	939,882 18 5	1,479,386 3 1
North	362]	94,884 5 4	1,119 17 5	96,004 2 9	15,378 14 3	7,728 0 · 6	3,137 4 7	122,248 2 1	27,583 4 11	75,990 19 8	51,718 19 5	172,696 4 6	1,840 18 6	329,830 7 0	452,078 9 1
Total	1,3201	535,675 19 10	30,053 7 6	565,729 7 4	58,052 15 0	27,788 13 0	10,180 11 5	661,751 6 9	154,927 1 3	159,563 4 10	156,756 14 11	792,262 12 6	6,203 11 11	1,269,713 5 5	1,931,464 12 2
. 1882.								•					,		
South and West	921	407,829 14 5	26,884 1 8	434,713 16 1	87,935 14 10	9,753 17 7	7,197 19 2	489,601 7 8	116,651 16 4	93,188 5	67,785 12 4	0,255 2 8	3,845 2 3	831,726 2 0	1,321,327 9 8
North	347 1	78,716 6 5	1,034 12 2	79,750 18 7	12,476 12 7	3,255 4 3	2,741 2 2	98,223 17 7	23,418 12 0	71,312 8 7	30,712 5 1	149,125 4 3	4,743 13 8	279,312 3 7	377,536 1 2
Total	1,2681	486,546 0 10	27,918 13 10	514,464 14 8	50,412 7 5	13,009 1 10	9,939 1 4	587,825 5 3	140,070 8 4	164,500 17 0	98,497 17 5	699,380 6 11	8,588 15 11	1,111,038 5 7	1,698,863 10 10
Increase 1883	52	49,129 19 - 0	2,134 13 8	51,264 12 8	7,640 7 7	14,779 11 2	241 10 1	73,926 1 6	14,856 12 11		58,258 17 6	92,882 5 7		158,674 19 10	999 603 1 4
Decrease 1883							,			4,937 12 2			2,385 4 0	158,674 19 10	232,601 1 4
		·		<u> </u>					,		.	Ì			

No. 14.

Return of the Traffic in Passengers and Goods, the number of Trains run, and the number of miles travelled by Trains, 1883.

	Traffic.			Coaching '	Traffic.	•						Goods T	raffic.			Nur	nber of Trai	ns.	Number of miles travelled by Trains.				
Year and Name of Railway.	open for T		Passen	gers.		triagos.	es con- in Pas- Trains.	Dogg	s con- d in Frains.	Cattle.	Sheep.	P gs.	Mineral.	Wool.	General Mer-	Passenger.	Goods.	Total.	Passenger.	Goods.	Total	Ballasting, Shunting,	Total.
	Miles op	First Class.	Second Class.	Total 1st and 2nd Class.	Season Tickets.	Ogrnie Ogrnie	Horse veyed	Dogs.	Horses conveyed in Goods Trains.	Cartie.	эпеер.	1 gs.	mmerai.		chandise.	l assenger.	Ouds.	10	2 doors go		Train miles.	&c.	
1883.		No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	Tons.	Bales.	Tons.	No.	No.	No.	No.	No.	No.	No.	No.
South and West	958	3,216,154	6,268,981	9,485,135	14,293	3,666	6,676	11,717	6,911	100,691	1,249,932	11,953	425,840	244,938	679,463	55,924	31,431	87,355	1,753,633	3,033,509	4,787,142	889,317	5,676,459
North	3623	182,015	604,887	786,902	679	1,345	2,432	3,749	3,457	29,355	362,678	9,439	1,489,662	116,068	137,455	8,164	20,767	28,931	376,617	773,502	1,150,119	481,488	1,631,607
Total	1320½	3,398,169	6,873,868	10,272,037	14,972	5,011	9,108	15,466	10,368		1,612,610	21,392	1,915,502	361,006	816,918	64,088	52,198	116,286	2,130,250	3,807,011	5,937,261	1,370,805	7,308,066
1882.														•	,		ŧ						
South and West	921	2,693,901	5,660,455	8,354,356	15,184	3,521	6,284	9,794	5,053	117,929	909,650	16,913	393,956	162,584	606,740	49,162	28,275	77,437	1,531,415	2,383,211	3,914,626	786,858	4,701,484
North	347½	143,008	486,949	629,957	601	1,185	2,319	3,353	2,469	29,584	283,994	10,421	1,395,940	73,334	118,541	8,014	18,702	26,716	307,808	628,693	936,501	440,929	1,377,430
Total	1268}	2,836,909	6,147,404	8,984,313	15,785	4,706	8,603	13,147	7,522	147,513	1,193,644	27,334	1,789,896	235,918	725,281	57,176	46,977	104,153	1,839,223	3,011,904	4,851,127	1,227,787	6,078,914
Increase, 1883	52	561,260	726,464	1,287,724		305	505	2,319	2,846		418,966		125,606	125,088	91,637	6,912	5,221	12,133	291,027	795,107	1,086,134	143,018	1,229,152
Decrease, 1883					813					17,467		5,942								•••••			

APPENDIX TO REPORT ON RAILWAYS-1883.

No. 15.

Return of Working Expenses and Rolling Stock during Year 1883.

	n, er.							Miscellaneous				Porportion		Stock on	318t Dec	, 1883.
Year and Name of Railway.	Miles open, 31 December.	Locomotive Power.	Carriage and Waggon Repairs.	Maintenance and Renewal of Way.	Traffic Charges, Coaching and Merchandise.	Compensation— Personal Injury, &c.	CompensationDamage to and Loss of Goods.	Working Expenditure and General Establishment.	Total Working Expenses.	Total Earnings.	Net Earnings.	per cent. of Expendi- ture to Total Earnings.	Loco- motives.			
1883.		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.					
South and West	9 58	311,455 16 9	43,101 10 5	279,318 3 4	263,439 4	2,878 9 3	3 1,533 3 2	30,482 9 5	932,208 16 8	1,479,386 3 1	547,177 6 5	63.01	228	500	4,824	5,550
North	362½	70,607 6 11	13,008 19	64,004 2 10	88,661 10	2 2 0	187 18	9,107 11 7	245,579 11 2	452,078 9 1	206,498 17 11	54'32	. 68	195	1,564	1,827
Total	1,320}	382,063 3 8	56,110 9 5	343,322 6 2	352,100 14 1	2,880 11 3	1,721 1	5 39,590 I C	1,177,788 7 10	1,931,464 12 2	753,676 4 4	60.98	296	695	6,386	7,377
1882.	021	255,501 12 4	25 208 10 1	215,264 16 7	7 206 784 11			20.540 VP 16	727 622 YO YY	1,321,327 9 8	582.604 0 0	55.83	212	402	4.704	4.810
North	347½		11,212 2 11	,] `			197,002 8 5		180,533 12 9	Ì	_	·	4,194 ,1,251	l . i
Total	1,2681	314,486 11 (46,520 13 0	261,988 18	278,125 4	3,242 2 5	1,049 6 4	4 29,222 12 3	934,635 8 4	1,698,863 19 10	764,228 2 6	55.05	268	564	5,445	6,277
Increase, 1883	52	67,576 12 2	9,589 16 5	81,333 7	73,975 10 10		671 15	10,367 8 9	243,152 19 6	232,601 1 4,		5.96	28	131	941	1,100
Decrease, 1883		·				361 11 2		••••			10,551 18 2					

No. 16.

TRAMWAY LINES OPENED FOR TRAFFIC (CITY AND SUBURBAN.)

Return showing the Working Expenses, Number of Passengers, Earnings, and Rolling Stock for years 1883 and 1882.

	Miles	Miles		V	Working Expenses.		No. of	Earnings.	on per tpendi-	Rolling Stock, 31 December, 1883.
Year.	opened for Traffic.	travelled by Trains.	Locomotive Power.	Carriage Repairs. Maintenance and Renewal of Way.	Traffic Charges. Compensation.	General Charges. Total.	Passenger Fares collected. Pass	ssenger. Miscel- laneous Total.	Proportion per cent. of Expendi- ture to Earnings.	Motors. Cars. Trucks.
,			£ s. d.	£ s. d. £. s. d	£ s. d. £ s. d.	£ s. d. £ s. d		s. d. £ s. d. £ s. d.	£ s. d.	
1883	25	1,076,096	96,028` 7 I	11,064 8 8 30,977 1 0	32,783 4 11 4,775 4 6	3,248 19 7 178,877 5 9	25,684,285 188,47	71 5 92,227 15 9 190,699 1 6	11,821 15 9 93.80	58 98 5 161
,1882	22	670,649	52,735 19 6	7,973 9 8 17,481 7 7	7 19,912 4 4 2,923 15 9	2,109 2 1 103,135 18 11	1 15,269,100 125,83	36 5 8 365 12 11 126,201 18 7	23,065 19 8 81.72	2 46 81 5 132
ļ	<u> </u>									
Increas 1883	3	405,447	, 43,292 7 7	3,090 19 0 13,495 13 5	5 12,871 0 7 1,851 8 9	1,139 17 6 75,741 6 10	0 10,415,185 62,63	35 o 1 1,862 2 10 64,497 2 11	12.08	3 12 17 29
Decreas 1883		.;							11,244 3 11	

No. 17. CAMDEN TRAMWAY.

RETURN of EARNINGS from Traffic in Passengers and Goods during the year 1883.

	•	Miles		G	ross Earnings fro	om Coaching Traff	le.			Gross	s Earnings from	n Goods Traffic.		1
ŀ	Year.	open		Passengers.		Excess-Luggage,					l	i	1	Gross Earning
1188		for Traffic.	ist and 2nd Class Passengers.	Holders of Season Tickets.	Total from Passengers.	Parcels, Cloak Room, Horses, Carriages, and Dogs.	Mails.	Total from Coaching.	Live Stock.	Minerals.	Wool.	General Merchandise.	Total from Goods.	from these Sources.
1	1883 1882 Increase, 1883 Decrease, 1883	7½ 	£ s. d. 1,329 17 2 1,122 19 3 206 17 11	13 7 4	£ s. d. 1,329 17 2 1,136 6 7 193 10 7	£ 8. d. 311 11 6 90 6 2	£ s. d. 96 o o o o o o o o o		£ s. d. 33 2 8 8 12 0	£ s. d. 9 7 11	£ s. d. 6 8 2 4 10 2	£ s. d. 1,452 18 11 842 7 5	864 17 6	£ s. d 3,229 18 5 2,152 10 3

CAMDEN TRAMWAY.

RETURN of the Traffic in Passengers and Goods, the number of Trains run, and the number of miles travelled by Trains, 1883.

		Coaching Traffic.									(Goods Tr	affic.						1				
Year.	Miles open for Traffic.		· Passe	engers.			nger		conveyed ds Trains.						- i	Nui	nber of Tra	ins.	N	fumber of	miles travell	ed by Train	S.
Trai		First Class.	Second Class.	Total 1st and 2nd Class.	Season Tickets.	Carriages	Horses conveyed in Passenger Trains.	Dogs.	Horses con in Goods J	Cattle.	Sheep.	Pigs.	Minerals.	Wool.	General Merchan- dise.	Passenger.	Goods.	Total.	Passenger:	Goods.	Total Train miles	Ballasting, Shunting, &c.	Total.
1883 1882	7호 7 호	No. 3,341 1,611	No. 25,807 25,527	No. 29,148 27,138	No. 8	No. 35 4	No. 78 	No. 40 10	No. 25	No. 250 12	No. 652 263	No. 420 103	Tons.	Bales.	Tons.\ 11,309 5,618	No. 1,994 844	No. 1,639 846	No. 3,633 1,690	No 16,910 13,420	No. 12,964 9,587	No. 29,874 23,007	No. 4,496 2,289	No. 34,370 25,296
Increase, 1883 Decrease, 1883		1,730	280 	2,010	 8	31	78 	30 	² 5	238	389 	317	 32	13		1,150	793	1,943	3,490	3,377	6,867	2,207	9,074

CAMDEN TRAMWAY.

RETURN of Working Expenses and Rolling Stock, during the year 1883.

	Year.	Miles opened	Locomotive Power.	Carriage and Wagon repairs.	Maintenance and Renewal of	Traffic Charges.	Compensation.	General	Total Working	Total	_ Net	Proportion per cent. of Expendi-	R	colling Stoc	k on 31 December	r.
-	31	31 December	2001	wagon repairs.	Way.		-	Charges.	Expenses.	Earnings.	Earnings.	ture to total Earnings.	Engines.	Cars.	Trucks.	Total.
	1883 1882	7 ½ 7 ½	£ s. d. 1,328. 2 9 1,148 14 10	£ s. d.	£ s. d. 1,437 6 1 706 13 9	£ s. d. 632 5 3 377 9 5	£ s. d. 2,161 0 5 416 8 0	£ s. d. 15 3 2 29 15 11	£ s. d. 5,685 19 3 2,719 19 0	£ s. d. 3,229 18 5 2,152 10 3	Nil Nil	176 [.] 04 126 [.] 34	2 2	3 3	Railway	5 5
	Increase, 1883 Decrease, 1883		179 7 11	71 4 6	730 12 4	1,009 14 8	2,577 8 5	14 12 9	2,966 o 3	1,077 8 2	Nil	49.70			Goods Trucks are used.	

No. 18.

Motors received during the year 1883.

		District of Cultural con	Diameter of Wheels	Coupled or Single.	Length of Stroke. Wheel E	nse. Maker's Name.	Commenced to run.
No.	Description of Motor.	Diameter and position of Cylinders.	Leading. Driving.	Trailing.	Stroke.		
	,	`	ft. in. ft. in.	t. in.	ft. in. ft.	in.	
46	4 wheels	Horizontal, 10" diameter	2 11 2 11	Coupled	1 2 5	6 Baldwin Company	1 March, 1883.
47	4 do	do 10" do	2 11 2 11	do	1 2 5	6 do	3 " "
.48	4 do	do 10" do	2 11 2 11	do	1 2 5	6 do	6 " "
49	4 do	do 10" do	2 11 2 11	do	1 2 5	6 do	6 " " .
51	4 do	do ro" do	2 11 2 11	do	1 2 5	6 do	28 April, "
52	4 do	do 10" do	2 11 2 .11	do	1 2 5	6 do	28 ,, ,,
53	4 do	do 10" do	s ii 2 II	· do	1 2 5	6 do	1 May, ,,
54	4 do	do 10" do	2 11 2 11	do	I 2 5	6 do	ı ,, ,,
55	4 do	do 7½″ do	2 31/2 2 31/4.	do	1 0 4	6 Merryweather & Sons	30 June, "
56	4 do	do 10" do	2 11 2 11	, do	1 2 5	6 Baldwin Company	16 " "
57	4 do	do 10" do	2 11 2 11	do	I 2 5	6 do	. 18 " "
70	Compound	Vertical, 9" and 12" diameter	2 6	2 6 do	i o 5	6 do	

No. 19.

List of Tramway Rolling Stock (exclusive of Motors) received during the year 1883.

Desci	ription and C	lass.		No.	Name o	f Maker.	Carrying capacity.	w	eight.		Diame of Whee		No. o Whee	f ls.	Commenced	to run.
Double-deck	and sliding	g doors	Class A4	77	Hudson (Lim	Brothers	60	Tons	cwt.	qrs.	ft.	in.	4).	Jes.	18 Jan.,	i883
\mathbf{D}_{0}	do		A4	78	do		60	4	12	0	2	0	4	9 00	15 Feb.,	,,
Do	do		A 4	79	do		6о	4	. 12	0	2	0	4	double bogres.	· 14 "	,,
Do .	do		A4	80	do		60	4	12	0	2	o	١ ٢.	임	14 ,,	,,
Do	do		A^5	86	Thomas	Wearne	60	4	12	0	2	o	4	altered	19 Jan.,	,,
Do	do		\mathbf{A}^{5}	87	do do		60	4	12	0	2	o	4) i	Since	28 Feb.,	,,
Do	do		A^5	88	do		· 60	4	12	Ō	2	0	8		31 March,	ور
$\mathbf{p}_{\mathbf{o}}$	do	·	A ⁵	89	do		60	4	12	0	2	o	8		23 April,	,,
Do	do		A 5	90	do		60	4	12	0	2	0	8		4 May,	
Do	do		\mathbf{A}^{5}	91	do		60	4	12	0	2	o	8		24 ,,	,,
Do	do		A^5	92	do	•••••	60	4	12	0	2	0	8	i	7 June,	,,
Do	do		A^5	93	do	•••••	60	4	12	0	2	0	8		26 ,,	,,
Do	. do	•••	A^5	94	do	·····	. 6o	4	12	0	2	0	8			·····
Single-deck,	open sides		C	99	doʻ		8o	5	0	0	2	0	8		31 March,	,,
Double-deck, one side	, sliding do 	ors on 	$\dot{\mathbb{D}}_{I}$	100	J. G. B	rill & Co	8o	6	۰,۰	o	2	0	4			

No. 20.

Total number of Miles run by each Motor during the year 1883.

No. of Motor.	Total number of Miles.	No. of Motor.	Total number of Miles.	No. of Motor.	Total number of Miles.	No. of Motor. `	Total number of Miles.
ı	18,558 54	17	21,734.62	33	21,798:30	49	. 22,366 [.] 25
2	17,551.74	. 18	23,751.61	34	29,443'49	50	7,082.68
3	20,873'17	19	25,863.78	35	25'237'47	51	22,373'43
4	23,199.68	20	25,206 50	36	27,683.69	52	25,015. 2
5	13,082,15	21	24,734.30	37	26,265'10	53	17,639.78
6	15,714.50	22	31,200.74	. 38	23,518'20	54	20,900*27
7	4 21,653 6	23	34.20	39	27,233.30	55	5,206.51
8	12,332.45	24	34,277.69	40	25,798.48	56	18,935.43
9	16,899.31	25	21,089.43	41.	28,074.19	57	14,104.62
10	3,166.67	26	31,088.59	42	12,659.58	70	88.65
11	16,299.75	27	25,194.14	. 43	8,706.77	76	415.58
12	24,234.22	28	25,963. 8.	44	31;022.42	-	
13	13,563.72	29	24,490'22	45	25,531'10	Total	1,186,499.68
14	20,653 [.] 15	30	18,022. 4	46	22,505.39		,
15	17,485.74	31	23,596.41	47	20,922.59		
16	18,665 [.] 22	32	24.961.20 ·	48	20,823.15		

No. 21.
WORKING EXPENSES.

Schedules of Expenditure in Revenue Account, during the year ending 31 December, 1883.

Schedules.	Northern.	South, Western, and Richmond.	Total.
LOCOMOTIVE BRANCH.	£ s. d.	£ s. d.	£ s. d.
GENERAL EXPENSES.—Covers charges common to Nos. 10 to 53. 1. Superintendence and office expenses 2. Holidays 3. Half pay 4. Casualties 7. Repairs of machinery and workshops 8. Fuel and lighting 9. Sundries.	2,758 8 1 1,648 6 8 14 2 0 20 1 3 1,648 0 1 583 8 1 18 15 10	7,828 14 11 6,538 10 6 180 13 1 1,381 19 8 4,201 5 10 2,271 17 7 1,191 15 1	10,587 3 0 8,186 17 2 194 15 1 1,402 0 11 5,849 5 11 2,855 5 8 1,210 10 11
LOCOMOTIVES.—RUNNING EXPENSES. 10. Inspectors and foremen 11. Wages of enginemen and firemen 12. Wages of engine-cleaners and running shed labourers 13. Cost of fuel for engines and wages of fuelmen 14. Water, wages of pumpers, and repairs of pumping engines 15. Oil, tallow, waste, flax, and packing, &c. 16. Hand tools and implements 18. Watches. 19. Sundries.	502 6 8 20,989 17 8 5,003 17 8 15,117 10 7 2,285 6 3 4,698 8 4 128 10 9 15 19 0 22 12 2	6,428 0 4 92,416 7 2 20,434 14 5 74,958 18 5 12,877 0 10 23,417 9 9 816 4 1 207 11 0 237 7 6	6,930 7 0 113,406 4 10 25,438 12 1 90,076 9 0 15,162 7 1 28,115 18 1 944 14 10 223 10 0 259 19 8
LOCOMOTIVES.—REPAIRING EXPENSES. 20. Foremen 21. Wages for repairs and renewals of engines 22. Materials for ditto 23. Hand tools and implements 24. Additions and improvements to locomotive engines 25. Sundries.	1,621 7 2 9,504 15 3 3,177 15 11 847 15 10 0 1 8	1,038 16 4 42,997 6 10 10,859 17 9 1,047 13 11 117 10 8 6 1 1	2,660° 3 6 52,502 2 I 14,037 13 8 1,895 9 9 117 12 4 6 I I
CARRIAGES AND WAGGONS.—Covers charges common to Nos. 40 to 53. 30. Inspectors and foremen 31. Carriage examiners 32. Hand tools and implements 33. Sundries	353 5 6 432 15 10 16 11 3 0 13 7	482 10 10 5,791 9 7 153 18 1 32 11 5	835 16 4 6,224 5 5 170 9 4 33 5 0
CARRIAGE REPAIRS. 40. Wages for repairs and renewals 41. Materials ditto 42. Additions and improvements 43. Casualties	2,105 15 11 6 7 1	9,764 6 10 5,959 8 6 407 15 1 514 12 8	13,740 13 2 8,065 4 5 414 2 2 514 19 10
WAGGON REPAIRS. 50. Wages for repairs and renewals 51. Materials ditto 52. Additions and improvements 53. Casualties	2,176 5 5	9,548 5 10 9,232 19 1 953 6 1 260 6 5	13,487 5 0 11,409 4 6 953 6 1 261 18 2
Total, Locomotive Branch£	83,616 5 11	354,557 7 2	438,173 13 1
PERMANENT WAY BRANCH. General Expenses.—Covers charges common to Nos. 70 to 86. 60. Superintendence and office expenses 61. Repairs of workshops, &c. 62. Holidays 63. Half pay 65. Stationery and printing 66. Fuel and lighting	1,739 16 10 32 12 10 1,791 4 6 3 15 0 3 0 4 47 3 9	10,273 6 0 1,639 6 11 5,407 3 0 185 18 7 22 7 9 278 8 5	12,013 2 10 1,671 19 9 7,198 7 6 189 13 7 25 8 1 325 12 2
MAINTENANCE OF WAY. 70. Inspectors, &c. 71. Repairs of permanent way 72. Tools and implements 73. Ballasting 74. Repairs of machinery and workshops 75. Repairs of stunnels, viaducts, bridges, &c. 76. Repairs of sidings, turn-tables, &c. 77. Repairs of gates, fences, &c. 78. Relaying of line. 79. Repairs of stations, platforms, gate-houses, &c. 80. Repairs of signals 81. Repairs of approach roads 82. Casualties 83. Slips and flood repairs 84. Fuel and lighting 85. Repairs of wharves, &c. 86. Sundries	2,310 19 9 40,078 10 9 1,346 15 5 4,531 16 5 47 12 6 3,457 18 9 259 16 8 1,667 8 9 390 19 5 4,869 11 11 168 5 4 388 13 8 9 16 2 592 1 8	3,524 15 11 137,375 14 3 9,679 1 10 10,025 13 7 606 5 10 22,945 10 3 3,532 8 6 9,564 15 4 13,350 0 7 25,503 2 4 4,230 12 5 12,937 8 9 985 18 9 1,836 1 9 963 19 6 1 19 3 4,448 3 10	5,835 15 8 177,454 5 0 11,025 17 3 14,557 10 0 653 18 4 26,403 9 0 3,792 5 2 11,232 4 1 13,741 0 0 30,372 14 3 4,398 17 9 13,326 2 5 995 14 11 2,428 3 5 963 19 6 54 4 11 4,662 0 7
Total, Permanent Way Branch $\mathscr E$	64,004 2 10	279,318 · 3 4	343,322 6 2

No. 21—continued.

Schedules.	Northern.	South, Western, and Richmond.	Total.
TRAFFIC BRANCH. GENERAL EXPENSES.—Covers charges common to Nos. 110 to 129. 90. Cost of management and office expenses 91. Holidays 92. Half pay 93. Wages of signalmen, switchmen, gatekeepers, &c. 94. Line telegraphs 96. Advertising 97. Greasing and oiling passenger and goods stock, wages and stores 98. Clothing, watches, &c. 99. Stationery and printing 100. Repairing station furniture, fittings, and implements. 101. Making and repairing lamps 102. Fuel and stores 103. Casualties 104. Sundries.	3,844 18 4 	£ 8. d. 41,588 8 10 2,084 17 4 103 12 10 15,808 5 11 14,913 8 9 10 7 1 4,977 18 5 2,180 8 5 384 0 2 8,780 1 2 1,352 15 0 13,068 6 7 106 7 8 3,119 14 1	£ 8. d. 58,277 4 2 3,086 3 0 153 1 8 26,162 16 8 18,758 7 1 10 7 1 6,973 17 8 3,341 4 3 464 11 3 10,362 7 11 1,618 19 3 16,454 19 9 115 4 8 3,808 9 7
COACHING CHARGES. 110. Wages of clerks, guards, porters, &c	2 2 0 750 5 8	50,627 I I 2,878 9 3 282 IO 5 342 I9 IO 58 II 6	59,847 17 5 2,880 11 3 1,032 16 1 342 19 10 77 17 8
GOODS CHARGES. 120. Wages of clerks, gnards, porters, &c. 121. Compensation 122. Horse-hire 123. Travelling expenses 124. Making and repairing sheets 125. Steam cranes and staiths 126. Cranes and weighing machines 127. Wharfingers and wharf expenses 128. Casualties 129. Receiving and delivering goods	187 18 3 402 11 6 	87,772 10 6 1,533 3 2 329 14 0 4 0 0 9,442 19 3 382 10 3 1,268 1 10 259 17 0 1 0 0 4,188 16 5	112,689 15 8 1,721 1 5 732 5 6 4 0 0 11,646 13 5 9,346 4 5 1,543 10 3 1,032 11 9 27 12 6 4,188 16 5
Total, Traffic Branch £	88,851 10 10	267,850 16 9	356,702 7 7
GENERAL CHARGES. Covers charges common to all the foregoing Subdivisions. 130. Proportion of general establishment 131. Auditing. 132. Advortising 133. Stationery and printing 134. Travelling expenses 135. Office expenses and contingencies 136. Store expenses 137. Repairs of offices and buildings 138. Sundries.	2,212 13 1	7,547 5 1 6,054 19 2 6 12 10 304 9 11 191 5 2 1,115 8 3 9,870 11 3 740 3 3 4,651 14 6	10,484 2 6 8,267 12 3 6 12 10 319 14 5 324 4 2 1,160 3 3 12,251 16 11 951 7 7 5,824 7 1
Total, General Charges£	9,107 11 7	30,482 9 5	39,590 г о
Grand total, Working Expenditure£	245,579 11 2	932,208 16 8	1,177,788 7 10.
SUMMARY. Locomotive branch Permanent way branch Traffic branch General charges	83,616 5 11 64,004 2 10 88,851 10 10 9,107 11 7	354,557 7 2 279,318 3 4 267,850 16 9 30,482 9 5	438,173 13 1 343,322 6 2 356,702 7 7 39,590 1 0
Total Expenditure£	245,579 11 2	932,208 16 8	1,177,788 7 10

No. 22.

Abstract of the amount of Working Expenses on the different Lines during 1882 and 1883, showing the Increase and Decrease in 1883.

		1882.			1883.			Increase.			Decrease.	
Heads of Expenditure.	South and West.	North.	Total.	South and West.	North.	Total.	South and West.	North.	Total.	South and West.	North.	Total.
Locomotive Power and repairing Engines Carriage and Waggon	255,501	£ 58,985	£ 314,486	£ 311,456	£ 70,607	£ 382,063	£ 55,955	.£ 11,622	£ 67,577	£ 	£	£
repairs	35,309	11,212	46,521	43,102	13,009	56,111	7:793	1,797	9,590			•••
of way Traffic charges	206,785	46,724 71,340	261,989 278,125	279,318 263,439	64,004 88,662	343,322 352,101	64,053 56,654	17,280				•••
Compensation, personal Compensation, goods	3,162	· 80	3,242	2,878	2	2,880	665		672	284	78	362
Miscellaneous	20,743	8,480	29,223				9,740	627	10,367			•••
Total£	737,633	197,002	934,635	932,209	245,579	1,177,788	194,860	48,655	243,515	284	78	362

No. 23. - TRAMWAYS—CITY AND SUBURBAN.

WORKING EXPENDITURE of City and Suburban Tramways during the Twelve Months ending December 31, 1883.

							
LOCOMOTIVE BRANCH.	£	s.	d.	PERMANENT WAY BRANCH—contd.	£	s.	d.
GENERAL EXPENSES—Covers charges common to Nos. 10 to 53.				Maintenance of Way.			
Schedule No. 1. Superintendence and office expenses 2. Holidays 3. Half-pay 4. Casualtics 7. Repairs of machinery and workshops 8. Fuel and lighting 9. Sundries		3 15 17 10	0 8 7 11 1	Schedule No. 70. Inspectors, &c. 71. Repairs of permanent way 72. Tools and implements 73. Ballasting 74. Repairs of machinery and workshops 75. Repairs of tunnels, viaducts, bridges,	12		5 2
Locomotives—Running Expenses. 10. Inspectors and foremen	242	3	10	&c			6
11. Wages of enginemen and firemen 12. Wages of engine-cleaners and running shed labourers 13. Cost of fuel for engines and wages of fuel men.	27,639 7,940	1	9	79. Repairs of stations, platforms, gate- houses, &c	224 8	0	9
fuelmen 14. Water wages of pumpers, and repairs of pumping engines 15. Oil, tallow, waste, flax, and packing, &c.	2,957 3,718	1 18	I I	84. Fuel and lighting	29,631	·	3
16. Hand tools and implements	170 125 15		0	TRAFFIC BRANCH. General Expenses—Covers charges common			
LOCOMOTIVES—REPAIRING EXPENSES. 20. Foremen	679 21,385 7,125	14	2	to Nos. 110 to 129. 90. Cost of management and office expenses 91. Holidays	4,102 501 32		2
23. Hand tools and implements	481 52		8	keepers, &c. 94. Line telegraphs 97. Greasing and oiling passenger and goods stock, wages and stores 98. Clothing, watches, &c.	923	18	0
CARRIAGES AND WAGGONS—Covers charges common to Nos. 40 to 53. 30. Inspectors and foremen			6	100. Repairing station furniture, fittings, and implements 101. Making and repairing lamps 102. Fuel and stores 103. Casualties 104. Sundries	2,380 197 342 595 229 297	4 4 2 17	8 1 6 7
CARRIAGE REPAIRS.				COACHING CHARGES.	•		
40. Wages for repairs and renewals	4,582 4,390 43 209	11	4 4,	110. Wages of clerks, guards, porters, &c 111. Compensation 113. Receiving and delivering parcels 116. Casualties	4,775 o	4	4
WAGGON REPAIRS. 50. Wages for repairs and renewals 51. Materials ditto 53. Casualties		7 13 19	8 4 5	Total, Traffic Branch£	37,558	9	5
Total, Locomotive Branch£ PERMANENT WAY BRANCH.	107,092	15	9	Covers charges common to all the foregoing Subdivisions. 130. Proportion of general establishment 131. Auditing	868	16	4 8
GENERAL EXPENSES—Covers charges common to Nos. 70 to 86. 60. Superintendence and office expenses 61. Repairs of workshops, &c		10	10	135. Office expenses and contingencies	5 345 1,623 28 277	16 2	5 10 2 1
62. Holidays 63. Half-pay 65. Stationery and printing 66. Fuel and lighting	582 15 1 0	8	8 0 0	Total, General Charges£ Grand Total, Working Expenditurc£	3,248	19	7

SUMMARY OF EXPENDITURE.	£	s.	d.
Locomotive Branch	107,092		9
Permanent Way Branch	29,631		0
Traffic Branch	37,558		
General Charges	3,248	19	7
Total Expenditure£ The following adjustments are to be made here:—	177,531	15	9
Total Expenditure	177.531	15	_
Add proportion of relaying cost on Redfern Line, 1882, chargeable to this Year	2,387	10	0
Less # of relaying cost of Crown-street Line, included in Permanent Way	179,919	5	9
expenses above, not chargeable to 1883	1,042	0	0
See Notes on Sectional Returns.	178,877	5	9

No. 24. CAMDEN TRAMWAY.

Working Expenditure of Camden Tramway during the Twelve Months ending December 31, 1883.

····				N			
LOCOMOTIVE BRANCH.	f.	8.	d.	PERMANENT WAY BRANCH—contd.	£	8.	d.
GENERAL EXPENSES—Covers charges common				MAINTENANCE OF WAY—contd.			
to Nos. 10 to 53. Schedule No.				75. Repairs of tunnels, viaducts, bridges, &c.	6-	6	0
2. Holidays	₇ Q	19		76. Repairs of sidings, turn-tables, &c			8 8
3. Half pay		6		77. Repairs of gates, fences, &c		17	
4. Casualties		12	_	79. Repairs of stations, platforms, gate-	9	7	6
8. Fuel and lighting			_	79. Repairs of stations, planforms, gave-			
9. Sundries :		7		houses, &c		15	
9. Danatics	U	14	U	80. Repairs of signals	3		
LOCOMOTIVES-RUNNING EXPENSES.				81. Repairs of approach roads	7		-
11. Wages of enginemen and firemen	601			82. Casualties		6	
12. Wages of engine-cleaners and running	031	15	1	83. Slips and flood repairs	23	4	
shed labourers			6	Motol Downson of W Normal O		$\overline{}$	_
13. Cost of fuel for engines and wages of	111	ΙI	O	Total, Permanent Way Branch £	1,437	О	
fuelmen	6		_	MDATEGO DDANOT			
fuelmen	200	14	9	TRAFFIC BRANCH.			
14. Water, wages of pumpers, and repairs of				G G 7			
pumping engines		14		GENERAL EXPENSES—Covers charges common			•
15. Oil, tallow, waste, flax, and packing, &c.		12		to Nos. 110 to 129.			
16. Hand-tools and implements		4		90. Cost of management and office expenses	137		
19. Sundries	0	3	4	91. Holidays	6	11	
Tagarram B W				93. Wages of signalmen, switchmen, gate-	_		
LOCOMOTIVES—REPAIRING EXPENSES.				kcepers, &c	126	11	
21. Wages for repairs and renewals of			_	97. Greasing and oiling passenger and			
engines		16		goods stock, wages and stores	0	3	
22. Materials ditto		12	_	98. Clothing, watches, &c.	3	15	
23. Hand tools and implements	I.	` ì7	2	100. Repairing station furniture, fittings, and	•		
Y				implements	4	0	
CARRIAGES AND WAGGONS—Covers charges				101. Making and repairing lamps		I	
common to Nos. 40 to 53.				102. Fuel and stores		12	
31. Carriage examiners	42	17	ΙI	104. Sundries	I	16	
Connection Description	`						
CARRIAGE REPAIRS.				COACHING CHARGES.	•	_	
40. Wages for repairs and renewals		14		110. Wages of clerks, guards, porters, &c	307		
11. Materials ditto		16		111. Compensation	2,161	0	
2. Additions and improvements		12	4	G			
3. Casualties	4	6	3	GOODS CHARGES.	٠,	_	
WAGGON REPAIRS.				120. Wages of clerks, guards, porters, &c		18	
53. Casualties		٠	_	124. Making and repairing sheets	13	0	
3. Casualdes	19	13	9	(Data) (Duage - Duage)		_	_
Total, Locomotive Branch £	~			Total, Traffic Branch	2,793	5	
Total, Docomotive Dranch &	1,440	4	4	GENERAL CHARGES.		•	
				GENERAL CHARGES.			
PERMANENT WAY BRANCH.				Covers charges common to all the foresing			
ZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZZ				Covers charges common to all the foregoing Subdivisions.			
GENERAL EXPENSES—Covers charges				130. Proportion of general establishment		-0	
common to Nos. 70 to 86.					-	18	
50. Superintendence and office expenses	_	15	,,	131. Auditing		17	
The state of the s	5	- 3		135. Office expenses and contingencies		2	
MAINTENANCE OF WAY.				135. Office expenses and contingencies	0	•	
o. Inspectors, &c.	76	13	τĠ	*30. Souro expenses	0	17	I
71. Repairs of permanent way	1,101			Total General Changes			_
72. Tools and implements		10		Total, General Charges£	15	3	
73. Ballasting		18		Grand Total, Working Expenditure£	- 60-		_
	52	10	3	Stand Lotar, Working Expenditure	5,685	19	
				<u>'</u>			

SUMMARY OF EXPENDITURE.	£	s.	d.
Locomotive Branch	1,440	4	4
Permanent Way Branch	1,437		
Traffic Branch	2,793	5	8
General Charges	15	3	2
Total Expenditure	£= 68=	ΤΩ.	

No. 25.

STATEMENT of the Number and Class of Rolling Stock manufactured by different Contractors during the year 1883, Great Southern, Western, Richmond, and Northern Lines.

				Locor	notiv	es.									
						Passeng	er.		Go	ods.			r	otal.	
SOUTHERN AND WE Beyor, Peacock, & Co		······				3 2				6				9 2	-
Henry Vale			•••••		<u>.</u>		4				4	·			
Total, Southern	••••••		5	<u> </u>	_		· o				15				
NORTHERN. Beyer, Peacock, & Co		•••••								8					
Dubs & Co* *James McGuigan & Co	· · · · · · · · · · · · · · · · · · ·	••••••	• • • • • • • •	•••••		4			••••	i				4 1	
Total, Northern	•••••	•••••	•••••			4		_		9				13	
Total, all lines, dur	ring 1	883	• • • • • • • •			9			. 1	9 .				28	
* P	urchas	ed from	Jas. M	[cGuiga	n & Co.	Maker	s—Bey	er, Peac	ock, &	Co.		<u> </u>			
				Good	ls Tr	affic.				* *****				,	
	A Waggons.	B High-sided Waggons.	C Covered Goods Vans.	D' Waggons.	Coal Wagguns, Patent Couplers.	G Waggons.	C Vans.	Powder Vans.	Sheep Vans.	Cattle Waggons.	Meat Vans.	Ballast Waggons.	Brake Vans.	Dump Car.	
				<u> </u>		_ <u>_</u>	<u>_</u>	<u> </u>	02 1					<u> </u>	<u> </u>
SOUTHERN AND WESTERN. Judson Bros. (Limited)	60 			250	140 	30 	2 I 		 51 	 50 'I			23		52
Total, Southern and Western	60		···	250	140	30	21				·			I	62
Northern.				-30		- 		<u> </u>		51			23	I .	
Iudson Bros		2 	20 	165 		•			 25 	 30 	 4 	 63	3		16
Total, Northern		2	20	165				I	25	30	4	63	3		31
Total, all lines, during 1883	60	2	20	415	140	30	21	I	76	8t	4	63	26	I	94
*	Purch	ased fro	m Jame	es McGu	igan &	Co. Ma	ikers u	nknown					<u></u>	1	
	_		Pas	ssenge	er Tr	affic.									
			,		First-class Carriages, American type.	Composite Carriages, American type.	Composite Carriages, Ashbury type.	Second-class Carriages, American type.	Second-class Carriages on four wheels.	Mail Vans on bogies.	Workmen's Vans.		Prison Vans.	Brake Vans.	Total
· Southern and Wei	·							02		-	=		" [<u> </u>	£
(udson Bros. (Limited)			•) 						
Total, South and West					7	3	···	8	48	2	-		-	- 1.5	9
Northern.						3			48 	2	I	4	-	15	9
udson Bros. (Limited)	• • • • • • • • • • • • • • • • • • • •	••••••	• • • • • • • • • • • • • • • • • • • •	······			6	•••							2
					l———	!	·	اــــــا		1	1	- 1		- 1	_
Total, Northern	·····	•••••	••••	•••••			. 6		18			.	ı	9	3

No. 26.*

Return showing the descriptions and quantities of Goods, Live Stock, &c., carried on Great Southern, Western, and Northern Railways, for the years 1882 and 1883.

		188	32.	,		1883.							
Description of Goods.	Great Sout	hern and Western.	Grea	at Northern.	Great Sout	hern and Western.	Gre	at Northern.					
	Tons.	Freight	Tons.	Freight.	Tons	Freight.	Tons	Freight.					
		£ s. d.		£ s. d.		£ s. d.		£ s. d.					
A CLASS. Antimony ore			160	140.06.									
Artificial manure	 162	39 3 0	460 34	450 16 3 7 13 4	1,275	224 15 7	350	36 13 3					
Asphalt (in bags)	37	11 11 3	10	I 2 2	34	12 9 9	11	I 2 O					
Bark Battens, &c. (over 40 miles)	2,223	553 I5 7	134 90	45 13 6 44 1 0	2,779	659 18 4	423	105 5 6					
Beetroot	[]						•••						
Bones, (in bags)		125 10 10			816	441 7 8	184	78 I 8					
Bran and pollard	4,924	341 7 5 2,170 7 8	210 1,308	84 7 6 511 12 5	5,470	2,598 17 5	1,314	648 9 4					
Bricks	31,045	2,170 7 8 3,389 8 3	1,422	511 12 5 250 13 8									
Chicory root			1.492	127 9 3	75	56 7 5	5,537	481 19 2					
Flour	14,722	6,529 14 4	6,801	2,321 14 7	14,604	6,368 5 o	6,507	2,024 16 5					
Fruit	9,748 1,640	3,542 4 5	1,131	737 18 9	17,965	5,870 11 10	1,502 806	1,119 4 11					
Gluc-pieces, wet	17	1,099 4 5 5 9 7	773	355 18 1	2,736 73	1,358 12 2 32 15 1		303 I 2					
Grain Green fodder	29,227	11,897 10 1.	7,354	2,763 9 1	30,142	10,188 13 8	6,713	2,508 2 10					
Guano		7 17 1 0 2 6	496 	80 II 5	22 20	6 16 5	568	9 ¹ 5 4 0 12 9					
Hides, wet		446 19 6	187	119 8 5	3,440	2,069 3 5	883	544 8 ó					
Iron, bar, &c. (up)	1,336 3,459	716 2 1 1,932 16 9	290		8,919	 4,717 18 6	1,124	409 19 7					
Millet seed	2	1 6 0			2	1 6 9	9	2 16 2					
Ores	2,522	1,159 15 9	6,118	215 8 10			••• ••						
1)	1,757 2,923	1,023 18 8 673 15 4	311 246	244 15 1 118 15 8	12,284	2,839 13 10	 952	575 12 9					
Paper material	1,473	218 1 3	4	0 7 11	1,373	193 18 7	_5	0 9 9					
Potatoes	11,736 455	7.095 I3 5 317 3 8	4,951 67	1,773 7 11 59 1 3	9,876 2,362	4,737 6 4 1,997 8 8	4,469 321	1,386 16 0 286 6 2					
Preserved meat (to Sydney only)							21	6 15 11					
Regulus Sawdust	131	53 8 10		0 9 0	190	68 3 o							
Shingles		62 8 8	3 22	0 9 0	76 412	20 19 5 228 16 5	9 10 ;	64 6 6					
Slates	117	63 4 9	12	12 3 4	541	203 12 1	122	60 15 3					
Timber, undressed (over 40 miles)	8,775	6,221 15 7	71 3,931	19 15 1 2,173 13 9		I 4 7		1 2 5					
,, dressed	3,735	2,640 5 0	575	368 2 9	14,751	9,870 19 6	3,352	1,823 0 1					
,, log	1,414 5,282	459 14 9 2,294 9 9	535 774	139 0 2 279 1 9	16,217 24,206	5,970 14 4 9,703 15 10	4,394 4,425	1,171 14 1 2,181 3 8					
Tobacco, Colonial leaf	359	347 10 2	40	12 12 10	513	374 4 4	74	38 7 9					
Total	141,126	55,546 19 2	39,802	13,437 1 8	171,204	70,826 o 8	44,182	15.953 11 7					
B CLASS.	•												
Antimony orc						·	16	29 10 4					
Artificial manure	952 402	245 I 3	3 ² 209	7 5 0 335 11 10	2,215	3,820 12 9	943	1,518 18 3					
Battens (under 40 miles)	154	39 10 7	26	5 ¹ 7 3	-,3								
Bones, loose	178 182	100 3 I 282 0 4	148 67	43 13 3 84 15 `9	383	695 9 11	167	251 10 Q					
Cases and casks	133	119 3 4	2 [22 I II	574	518 15 5	134	185 3 10					
Cement Charcoal, &c (in bags)	1,830	1,483 12 0	² 75	297 I 6 	8,808 171	6,186 9 9	1,372	1,681 19 1					
Chicory root	• 101	103 13 0		•••									
Coal (in bags) Coke, owners' trucks	24	17 3 9	3 4.460	2 5 10 668 2 9	136	70 12 8	14	10 14 6					
"Government trucks	···· ·		4,460 20	13 15 1									
,, (in bags)	164				109	23 6 4	1,880	167 6 9					
Copper and tin smelted	647	414 6 2 1,207 13 3	303 455	217 18 4 79 ¹ 4 5	451 7,244	1,040 16 11	993 824	751 0 9 1 145 7 2					
Flower pots	I	2 8 6		I O 2	25	41 6 10	15	19 14 7					
Glue pieces, dry	19 26	6 13 6				37 0 9	6	11 11 3					
Guano	14	6 4 5	4	130									
Hides, dry	57 3,231	42 II 2 2,504 I2 5	22 731	183 6 2 580 12 10		123 0 11	148	248 16 2					
Jams (up)						0 14 8							
Lime Offul	14,883	2 9 9	659	. 257 1 11									
Oil-cake					2	3 11 9		.					
Paper (over 1 ton) Palings (under 40 miles)	215 4,861	130 10 3	7	13 O I 47 5 8	913	515 16 9	22	37 IO I					
Plaster of Paris	4,001	988 3 4 18 0 2	209 1	47 5 8 0 15 7	 61	* 87 13 0		21 2 10					
Preserved meat			24	7 12 1									
	<u>'</u>			o Camden line.	1	J	1						

No. 26—continued.

		18	82.		·	188	83.	
Description of Goods.	Great Sout	hern and Western.	Grea	it Northern.	Great Sout	hern and Western.	Grea	t Northern.
	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.
B CLASS—continued.		£ s. d.		£ s. d.		£ s. d.		-£ s. d
Potteryware Regulus Salt, dairy ,, rock Sheepskins Shingles Sleepers, railway Soda, caustic ,, crystals ,, silicate Tallow Tesselated and ornamental tiles Tin ore Tobacco, Colonial leaf Timber (under 40 miles) Whiting	1,658 119 1,062 707 511 425 1,792 555 88 280 4 248 13,295 68	1,544 14 8 141 13 11 1,646 11 0 969 0 3 733 3 9 276 19 0 842 17 8 61 17 7 147 3 11	256 575 222 99 71 1,318 7 24 104 916 122 1,523 33	278 2 5	3,952 1,954 2,384 14,618 170 315 1,860 23 278	7,598 10 4 212 1 4 605 3 7 1,559 13 1 1,759 13 1 1,7 3 3	2,335 972 405 1,777 20 105 21 605 3,367 	3,207 10 3 1,282 0 5 740 10 6 27 9 6 196 1 0 48 12 6 474 16 0
Total	48,423	29,331 3 7	12,946	7,258 0 1	46,889	50,889 13 0	16,255	18,666 19 5
C CLASS. Bottles Cases and casks Coke Copper Flower-pots Glue-pieces, dry Paper, over 1 ton Salt (rock) Sheepskins, bundles Slates Tin ore Zinc, &c. (to A. K. Co.) Total D CLASS.	263 257 41 1,776 26 64 731 1,013 1,125 428 40	464 10 3 260 9 10 36 1 1 3,196 18 5 41 11 2 29 7 9 364 19 3 1,728 2 1 1,713 9 7 335 10 2 36 9 6	65 96 36 864 3 448 335 14 2,092 	98 3 2 133 17 2 11 7 7 151 6 0 4 7 8 	,			
Charcoal, &c., in bags Coal. in bags Colonial wine Hides, dry Iron, pig, &c. Jams, &c. (up) Oil-cake Salt, dairy Sheepskins, loose Soda caustic ,, crystals Stone, cut Tesselated and ornamental tiles Timber, dressed Whiting Total	68 109 317 57 100 2 1 2,776 127 158 274 274 274 274 277 8,339 178	63 4 4 72 19 8 775 0 4 80 0 2 93 13 7 1 10 4 2 15 3 4,492 13 6 53 13 6 194 7 3 568 5 3 373 7 6 21 19 3 7,661 18 10 359 16 11 14,815 5 8	16 13 694 101 157 1,496 2 20 69 45 1 1,650 80	20 5 5 4 16 3 529 13 2 43 4 2 63 2 9 				
Ist CLASS. Bags and woolpacks Cement Chaff, by weight Dairy produce Dobbins Glucose Hay, by weight , presses Iron (cor.), cases Iron nails (over 340 miles) , , (, 380 ,,) , wire , , (over 300 miles)	1,267 3,916 1,800 66 61 1,086 31 1,030 184 17	3,889 4 6 6,006 7 11 892 11 5	930 923 354 30 519 441 1,161	1,532 13 5 1,583 14 3 188 7 3 	1,390 1,064 134 60 524 23 4,027 5 3,395	691 15 4 2,756 16 0 433 10 7 85 8 0 276 18 3 41 8 3 9,375 13 9 28 5 11 8,748 3 8	285 237 70 1 377 8 1,509 	171 18 6 608 8 8 114 0 8 5 11 0 164 18 7 17 16 7 4,164 8 7

No. 26—continued.

Locomotives, on wheels	s. d. 11 7 16 9 17 11 5 4 17 16 9 17 11 1 5 4 18 19 7 16 2 18 19 7 16 2 18 9 17 10 18 9 17 10 18 8 18 8
TST CLASS—continued.	s. d. 11 7 16 9 17 11 1 5 4 17 16 2 18 19 7 16 2 18 9 17 10 18 9 17 10 18 8 18 8 18 7 4
Locomotives, on wheels	3 8 19 7 10 12 11 1 1 0 18 9 6 7 10 14 5 3 8 8
Malt	3 8 19 7 10 12 11 10 18 9 16 7 10 18 9 17 18 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
Measurement goods	3 8 3 19 7 16 2 11 16 18 9 18 9 18 9 18 9 18 9 18 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
Resin	16 2 12 11 1 0 18 9 6 7 10 7 4 5 8 8
Soap	0 18 9 0 7 10 7 4 5 8 8 8 8 8
Tallow	3 8 8 3 7 4
Total	8 8 8
Ale, in bulk	
Ale, in bulk	
Bollers	7 1 0 7 1 0 7 1 0 0 1 0 1 0 1 0 1 0 1 0
Glass	5 17 2 8 8 2 7 1 1 1 1 1 0 3 1 1 1 1 1 5 1 9 9 1 1 1 1 1 1 1 1 1 1 1
Seeds, garden	
Total 52,058 195,193 10 9 18,336 61,354 19 3 51,096 192,334 6 4 18,460 69,40	3 2 5

APPENDIX TO REPORT ON RAILWAYS-1883.

No. 26—continued.

		188	32.			188	33.	
Description of Goods.	Great Sout	hern and Western.	Grea	t Northern.	Great Sout	hern and Western.	Grea	at Northern.
	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.
4TH CLASS.		£ s. d.		£ s. d.	1	£ s, d.		£ s. d
Acids	33	198 4 3	13	76 8 5	26	151 12 10	7	47 0 8
Ammunition	39	195 12 1	19	57 4 0	40	197 5 6	9	35 3
Bicycles		19 12 5	2	589	7	37 12 2	1	609
FireworksFurniture, loose	15	75 9 11	8	22 17 0	16	8118	5	34 19
Hats and millinery	1,008	3 326 13 10 26 6 10	221	539 5 6	1,176	3,872 1 10	265	744 9
Musical instruments	305	1,478 12 8	. <u>1</u>	3 8 4 356 7 3	357	21 9 9 1,705 10 2	100	2 18 396 8 1
Opium	303	16 14 0		356 7 3	357	9 3 9		0 4
Paintings	43	221 13 I	12	45 4 7	38	166 15 7	15	60 10
Perambulators	17	102 11 8	4	20 18 7	21	118 19 8	5	26 14
Picture frames	l i	4 15 0			1	576	1	2 19
Pier glasses	18	104 15 0	3 6	1696	14	73 16 3	6	28 10
Plate glass Sewing-machines	19	120 2 8	1 1	35 5 5 36 4 0	27	¹ 54 5 7	6	27 11 1
Slate slabs	- (321 11 7 23 5 6	12	36 4 0	66	239 19 11	25 8	105 2 1
Not described	710	23 5 6 3,057 6 3	5 404	25 8 4 1,639 12 11	1,8	101 4 0 2,897 6 9	367	30 13 1,670 12
	<u>-</u>				770			
Total	2,313	9,293 6 9	796	2,880 2 7	2,583	9,833 12 11	821	3,219 19
1st, 2nd, 3rd, & 4th Class Goods in Truck Loads.			}		•			
A erated waters	7	21 13 4		************	l i			
Ale and beer	40	133 12 0		•••	· 58	193 6 8		
Bags		••• •• • • • • • • • • • • • • • • • • •]	*****	6	20 0 0	•••	·······
Bottles				· ··· · •••	6	20 0 0		\ } •••••••
Boots	I	3 6 8		*******	4	15 0 0		•••••••
Carpentry		******		• • • • • • • • • • • • • • • • • • • •	12	41 13 4	******	
Confectionery					9	30 0 0	••••	
Dairy produce		•••••	•••••		2 2	6 13 4	••••	
Drapery	6	22 0 0		*** ***** * ***	113	6 13 4 387 9 2		
Drugs				*** ***** * ***	5	16 13 4		
Furniture in cases	2	5 0 Os			16	16 13 4 52 2 6		
,, loose	,				2	6 13 4	••••	
Glass	3	13 0 0			27	96 16 8		
Glucose					1	3 6 8		
Grain					5	16 13 4		
Groceries Iron bar	139	474 6 9			1,143	3,889 8 8		
1*	4	13 6 8		••••	67	231 17 10	••	
" cor. cases	28	99 17 6		• • • • • • • • • • • • • • • • • • • •	38 გი	130 19 1 266 16 8	•••	• ••••••••
" cor. tanks		95 17 0				23 6 8		
,, wire	19	61 19 2			7 74	246 14 2		
" nails	′				1 '6	20 5 0		
Ironmongery	23	85 7 10		••••••	503	1,715 10 8		
Iron wheels, railway					36	121 18 11	••••	
Kerosene	2	6 13 4		*******	49	161 15 0		
Lead					1	3 6 8		• • • • • • • • • • • • • • • • • • • •
Malt tanks					I	3 6 8	••••	
Maize		3 6 8		*******	13	41 17 6 13 6 8	••	
Malt				*** ********	4 28			
" in bags					20	93 6 8 103 19 7		
" in tanks					35	116 13 4	•	l .''
Measurement goods	· · · · · · · · · · · · · · · · · · ·				3	10 0 0		
Miscellaneous	1	з 68		•••	10	33 16 8		
Not described					9	31 13 4		
Oils and colors Palings] 3	8 6 8			56.	187 7 6		
Paper) ······		•••••		I	3 6 8		
Potatoes		· · · · · · · · · · · · · · · · · · ·			2	6 13 4		
Potteryware					2 I	10 0 0 3 6 8	•	
Resin	ا ا			• • • • • • • • • • • • • • • • • • • •	7	23 6 8		
Rice	15	51 9 2			94	317 3 10		·
Rope	1	5 0 0	١.,		1	1 13 4		
Salt, dairy	II	38 9 6			45	150 4 6		
"rock. Soap	2	6 13 4	•	• • • • •	4	13 6 8		
Soda, caustic		2 0 0		•••	7	22 10 0		
crystals					2 1	6 13 4 3 6 8	٠.٠	
Sulphuric acid					3	10 0 0	٠. ا	
Stone, carved			 ¦		11	40 3 4		
Sugar	139	478 15 6	•••	••• ••	817	2,782 3 3		
Гаг Геа					3	10 0 0		
Timber, dressed	5	16 13 4			45	149 0 0	•••••	
_ ,, sawn	1 1		•••••	•	I	3 6 8	•	
Γοhaceο	1	3 6 8			5 8	16 13 4 26 13 4	•••	
Whiting					0 1	0 16 8		
Wines	29	98 3 4			286	954 9 5		
Total	<u>'</u> '		 		 -			
	482	1,646 14 1		•	3,807	12,915 6 7	1	

No. 26—continued.

		188	82.			188	83.	
Description of Goods.	Great Sou	thern and Western.	Grea	at Northern.	Great Sou	thern and Western.	Gre	at Northern.
	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.
Miscellaneous Class.		£ s. d.		£ s. d.		£ s. d.		£ s. d.
Antimony ore ,, per truck Artificial manure ,,	••••		3 333	3 4 9 282 7 10	 24	13 19 11	33 169	36 12 6 145 3 I
Asphalt, ,,	6	5 17 9					····•	
Bark ,, Bones, ,, Bran and pollard, ,,	 6 1,394	4 17 I 1,070 4 IO	 175	132 8 10	18 78 3,575	11 12 8 55 7 9 2,551 9 2	 654	477 6 11
Bricks	6,345	698 11 0	551 68	94 3 4 38 4 9	25,122 36	2,690 7 6 34 9 8	3,342 53	331 17 0 4 4 6
Chaff, ,,, Chickory root, per truck		6,939 7 5	1,231	906 6 5 	20,632 6 288	11,004 12 5 4 1 11	3,477	2,643 9 6
Clay Coal Coal, per truck	94	61 6 0 43,072 5 11 67 0 11	12,867	3,927 19 6	136,179 1,940	55 19 10 46,694 15 4 1,366 19 6	8,902	3,315 2 9
,, owners' trucks		273 0 5	1,314,178 52	59,369 16 3	188 372	57 19 9 918 5 10	1,419,839 42	64.398 15 10 22 5 6
Crude oil, oil, per truck	201 1,77‡	99 16 1 973 15 6			1,979	9 13 5 1,085 15 7		
Firewood	207	20,058 19 4	232	19 15 7 15 2 7	205	22,617 10 10 549 10 9 11,962 18 1	419 5 899	40 13 0 7 12 8 642 14 4
Flour, per truck		8,089 2 2	466· 	349 14 0	17,196	115 1 4		
Garden produce, per truck Glass (scrup) Grain Gunpowder	7.	4 9 11 4 4 6 16,795 8 9 3,662 13 6	2,896 80	2,293 17 11 663 9 7	6 6 28,926 561	7 11 11 2 15 9 24,676 11 5 4,417 12 1	6,151 262	4,932 8 2 2,797 13 O
Haulage, per truck		335 7 0 7,5 ²² 5 3 11 9 11	7,014 	2,296 6 4	2,431 22,092 37	173 15 0 9,473 5 7 26 5 11	6,902 6	2,255 0 8 5 11 11
Iron cor. cases, per truck Iron (pig, &c.), from factory	191 753	592 6 4 453 6 3	5 56	18 0 0 28 5 9	630 1,678 27.	1,948 8 0 731 7 1 31 9 6	110 227 268	335 II II 267 I 4 322 I5 O
Ironstone	7,346 1,650	2,175 11 10 950 4 4		6 10 4	24 10,589 81	9 12 4 6,155 14 5	 48	27 14 5
Limestone	140	1,117 7 7	215	48 7 6	100	32 5 3 128 0 0	121	55 2 6
Marble, undressed Manure—loose Meat, per truck	1,265	209 15 8 1,844 19 4		******	968 11,344	119 6 10 4,700 18 6	3 ¹	5 4 4
Milk, ,,		1,632 16 11 25 12 10	3,198	312 14 9	1,742 289	2,025 19 6 24 5 10	3,284	321 16 9
Ores	161 12 11	69 17 0 6 18 4 13 10 7	1,777 46 17	58 5 8	1,700 222	715 18. 5 219 4 8	4,433 178 77	163 3 7 149 11 11 49 12 6
Potatoes ,,	1,893	1,747 12 9	277	219 4 1	1,841 65	1,725 10 5 79 13 4	86	70 9 5
Poultry, ,,	72,203	15 19 4 12,592 9 6 1,441 3 7	1,496 1,622	132 13 4 100 8 7	6 60,319 14,688	9,963 7 10 1,345 4 9	853 867	67 6 4 69 1 3
Scrap iron, to smelting works , per truck Shale	914	455 ¹ 7 7	319	96 12 1 8 19 0	5 ² 7 22 27,858	204 I 5 I4 I8 5 9,357 I 0	208	61 12 4
,, per truck				***********	1,488 5	527 12 5 5 14 4	7	5 18 11
Slates, ,,		4 5 1 2,441 12 10 89 5 2	42,453 53	1,542 18 0 32 18 8	9,973 303	1,997 17 1 199 18 8	34,080 60	20 8 3 1,351 0 9 40 8 9
Straw, ,, Sugar, ,, Timber (dressed), ,,	7,839 3,570	4,702 6 7 10,489 10 4	894	2,301 11 11	5,718 3,743	3.348 8 11 10,921 9 1	1,321 91	8 18 2 3,858 12 11 79 4 8
,, (sawn), ,, Waggons on whoels Water	59 386	49 14 11 833 5 8	2,591 3,974	2,146 6 7 74 5 0 1 12 1	15 608 1,251	18 14 4 575 19 0 283 4 7	492 2,502 16	447 0 4 68 8 9 3 10 0
Wire, per truck	1,486 28,203	457 14 1 4,881 17 3 67,311 11 0	29 224 13,641	694 6 1 30,618 3 3	1,815	5,486 3 6 104,480 15 8	466 21,317	1,421 6 0 51,603 13 11
mpty returns Use of line	197 1,332	478 11 6 2,667 7 8	1,180 	94 I IO 786 I6 3	241 1,332	563 8 0 3,030 4 10 2,026 14 6	1,314 	874 15 3
Goods to and from Victorian Railways Total				109,983 16 8	1,528	313,833 8 4		143,946 0 0
10111	552,941	244,511 11 8	1,414,368	109,903 10 8	027,704	313,033 0 4	1,523,760	1-43,940 0 0

No. 26—continued.

		18	82.	,		18	83.	
Description of Goods.	Great Sou	thern and Western.	Gre	at Northern.	Great Sou	thern and Wes ter n.	Gre	at Northern.
	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.
SUMMARY.		£ s. d.		£ s. d.		£ s. d.		£ s. d.
A Class B ,, C ,, D ,, 1st Class 2nd ,, 3rd ,, 4th ,, 1st, 2nd, 3rd, and 4th Class in truck loads	48,423 5,764 12,807 55,353 27,585 52,058 2,313	55,546 19 2 29,331 3 7 8,207 9 1 14,815 5 8 87,265 4 7 70,223 18 0 195,193 10 9 9,293 6 9 1,646 14 1	39,802 12,946 3,957 4,344 10,018 10,569 18,336 796	13,437 I 8 7,258 O I 4,881 I4 3 4,304 O II 22,723 O 2 26,341 5 9 61,354 I9 3 2,880 2 7	171,204 46,889 47,013 24,658 51,096 2,583 3,807	70,826 0 8 50,889 13 0 106,318 13 0 62,751 7 2 192,334 6 4 9,833 12 11 12,915 6 7	18,246 7,141 18,460 821	33,813 8 8 16,127 15 7 69,403 2 5 3,219 19 4
Miscellaneous Class Total		716,035 3 4	1,414,368	109,983 16 8 253,164 1 4	975,014	819,702 8 O	1,523,760	301,130 17 0
Less difference over-charges and special credits		3,949 14 5		2,014 3 5		10,066 12 3	· · · · · · · · · · · · · · · · · · ·	724 13 5
Live stock	898,852 48,335	712,085 8 11 116,660 8 4	1,515,136	251,149 17 11 23,418 12 0	975,014 52,522	809,635 15 9 127,376 19 0	1,628,865 15,737	300,406 3 7 27,583 4 II
Demurrage, storage, weighing, use of cranes, &c	,	3,845 2 3		4,743 13 8		4,362 13 5		1,840 18 6
Total	947,187	832,590 19 6	1,528,979	279,312 3 7	1,027,336	941,375 8 2	1,644,602	329,830 7 0
Departmental— Coal and mineralGeneral	92,314 39,972	40,027 13 10 19,170 18 8	9,115 3,913	3.293 19 6 2,630 14 10	150,819 23,067	70,935 I4 4 22,843 IO I	14,489 5,129	5,619 13 8 3,950 14 1
Grand total	1,079,473	891,789 12 0	1,542,007	285,236 17 11	1,201,222	1,035,154 12 7	1,664,220	339,400 14 9

No. 27.*

Revenue and Expenditure of each Station, with other particulars, for the year ending 31st December, 1883.

•	No. of hands employed,	Total	No. of	Revenue from Tickets and	Go	ods.	Co	al.	Other M	inerals.	На	y.	Wo	ol.	Earnings from	
Stations.	including Station- master.	Expenditure.	Tickets issued.	Coaching Traffic.	Tonnage outwards.	Tonnage inwards.	Tonnage outwards.	Tonnage inwards.	Tonnage outwards.	Tonnage inwards.	Trucks outwards.	Trucks inwards.	Bales Bales outwards.		Earnings from Goods Traffic.	Total Earnings.
			-	SUBURB	AN RA	ILWAY	, INCL	UDING	3 SYDN	ΈΥ.						
		£ s. d.		£ s. d.	1		1						,		£ s. d.	£ s. d.
Central Office, Sydney	7	939 13 4	19,575	30,387 19 91/2												30,387 19 9½
Darling Harbour	140	i4,745 5 II			35,888	204,357	6,975	15,310	1,996	71,981	549	7,277	1,957	221,869	196,521 14 5	196,521 14 5
Sydney	289	33,320 5 11	1,253,700	142,148 10 7	162,397	4,818	3,016	2,289	8,556	1,875	695		13,624		37,457 10 7	179,606 1 2
Eveleigh	6	869 17 3	·61,258	1,226 14 1						•••••	.,					1,226 14 1
M'Donald Town	5	529 12 4	122,320	1,873 2 4				` `					•••••		··········	1,873 2 4
Newtown	18	2,362 18 9	344,141	6,519 0 3	1,200	30,162	7	38,316	62	10,856		8			21,031 7 10	27,550 8 1
Stanmore	5	634 г 8	89,246	2,019 18 5						•			· · · • •		************	2,019 18 5
Petersham	13	2,120 17 9	541,706	11,565 1 6	261	11,103	29	15,330	30	8,875		9	•••••	·	9,363 18 5	20,928 19 11
Summer Hill	7	729 0 5	156,645	4,309 2 7		5								•••	ı 5 4	4,310 7 1 i
Ashfield	10	1,510 17 2	206,833	8,697 10 6	929	7,899	11	6,118	34	2,886	4	152			4,143 11 1	12,841 1 7
Croydon	5	670 19 11	106,352	4,038 5 11	1	6									1 17 8	4,040 3 7
Burwood	11	1,719 17 3	238,111	9,700 11 11	1,605	7,381	20	5,153	20	4,065	1	226			4,124 17 2	13,825 9 1
Redmyre	4	457 3 7	42,588	2,529 14 6												2,529 14 6
Homebush and Platforms	17	1,959 15 1	50,741	2,772 18 8	4,315	1,363	7	989	22	3,374	2	9	••••		90,790 11 10	93,563 10 6
Rookwood	7	1,042 4 5	60,551	1,957 10 6	3,901	2,325		877	11	2,125		25	8		828 18 3	2,786 8 9
Auburn	4	612 5 9	17,742	593 11 5	236	1,070		183	4	547		••••	371	152	355 0 0	948 11 5
Granville and Platforms	30	3,246 6 6	100,127	5,053 19 6	14,761	16,400		4,822	106	8,995	2	11	2,009	2,858	40,750 0 10	45,804 0 4
1883	578	67,471 3 0	3,411,636	235,393 12, 5	225,494	286,889	10,065	89,387	10,841	115,579	1,253	7,717	17,969	224,879	405,370 13 5	640,764 5 10½
1882	555	58,953 10 11	2,988,943	218,090 15 10	229,348	259,180	7,236	76,762	20,603	151,738	1,967	5,522	12,282	149,228	331,124 15 9	549,215 11 7

^{*} Includes traffic on Camden Line.

No. 27—continued.

	Stations.	No. of hands employed,	Total	No. of	Revenue from	God	ods.	Co	al.	Other M	inerals.	Ha	ıy.	Wo	ool.	Earnings from	Total earnings.
	Seations.	including Station- master.	Expenditure.	Tickets issued.	Tickets and Coaching Traffic.	Tonnage outwards.	Tonnage inwards.	Tonnage outwards.	Tonnage inwards.	Tonnage outwards.	Tonnage inwards.	Trucks outwards.	Trucks inwards.	Bales outwards.	Bales inwards.	Goods Traffic.	Total earnings.
						~ ~ ~		~~~~		~~~.~							
I.						GRE	SAT SO	UTHEF	KN KAI	LWAY	•	•					
Ι,		£ s. d. £ s. d. rylands														£ s. d.	
	Merrylands		•			3,534	214		1,309		369	2	4	•	•••••	•	833 18 8
1 3	Guildford	1	115 4 0 407 17 0	5,344	241 9 5	2,692	106	•••••	234		185		5		******	170 2 10 639 18 9	411 12 3
1 7	Fairfield	3	407 17 0 122 13 8	25,112 4,600	1,691 2 2 321 19 3	10,303	2,528		52	94	258	5	41	l r		639 18 9	2,331 0 11
	Liverpool	10	1,200 8 8	44,322	321 19 3 4,662 4 1	4,907	342 6,989	•••••	7.007	('	1,292	1	80	8,893	14 525	6,547 0 8	11,209 4 9
	Minto and Platforms	10	1,209 6 6	5,457	473 4 I	21,497	693		7,001	4,070	1,292	193	5	0,093	14,525	189 16 1	663 0 2
Î	Campbelltown	9	1,105 5 5	33,810	6,741 15 10	2,592	8,297	2	164	27	437	194	24	82		2,930 7 11	9,672 3 9
1	Menangle and Platforms	5	496 9 3	4,089	582 7 2	672	484			2	50	273		37		200 2 5	782 9 7
1)	Oouglas Park	2	202 18 3	3,731	820 4 8	626	680		42			125	5	9		516 17 3	1,337 1 11
1)	Picton and Platforms	20	2,043 1 4	6,429	1,925 12 1	4,265	2,123		21	3	9	375	ق ا			1,300 9 1	3,226 1 2
	Colo Valc			216	22 8 9		••••		••••			••••				0 16 5	23 5 2
- 1	Mittagong	7	839 0 11	11,028	2,570 2 1	5,084	2,672	4,274	112	18,331	99	81	j 5	39		9,422 12 4	11,992 14 , 5
	Bowral	5	551 17 5	8,076	2,187 0 8	1,392	2,938		125	2	248	3	19	2		2,213 3 3	4,400 3 11
- ‡	Moss Vale	7	854 17 9	11,558	4,767 10 5	3,013	3,659	3,800	220	7	946	I	18	143		4,022 11 9	8,790 2 2
	Bundanoon	2 8	252 8 0	4,167	695 14 10	2,238	551		. 4	746	52		I			467 15 8	1,163 10 6
	Marulan	2	900 2 10,	7,233	1,631 11 8	13,463	1,676	1,349	852	5,206	6	208	29	881		1,326 9 0	1 ,,,,,
	FowrangGoulburn	45	259 14 4 4,937 6 10	1,257	139 0 4	3,847	72		······	40	_	98	46	11,831	228	.9 5 7 48,927 8 8	69,555 8 0
	Breadalbane	45	381 0 3	30,579 2,687	20,627 19 4 671 18 5	15,036 660	45,969	23	5,021	10,397	2,916	26	40	248	338	260 6 0	69,555 8 0 941 4 5
	Funning	5	519 13 4	4,835	1,954 8 11	1,266	1,795 1,059		7	18	30	. 20	· ·	2,241		2,036 16 7	3,991 5 6
	Jerrawa	2	192 4 0	691	112 14 10	154	23		·′	ı		3		37		14 8 0	127 2 10
	Yass and Platforms	6	514 6 9	6,240	4,030 I 2	1,540	2,476		. 11	2	110	10		2,920		5,750 13 5	9,780 14 7
1	Bowning	5	688 13 6	1,687	715 3 11	592	2,096			668	33	2		3,565		8,549 15 0	9,264 18 11
	Binalong	5	541 2 9	3,445	1,805 11 8	1,425	1,521			17	65			2,752		4,157 18 6	5,963 10 2
	Rocky Ponds and Platforms	2	173 17 1	372	91 15 1	177	34			12				I	• • • • • • • • • • • • • • • • • • • •	194	93 4 5
	Harden ,,	12	1,405 5 5	5,156	2,923 13 8	1,726	6,010		94	18	87	· 5		9,709	11	19,212 14 3 4,894 18 6	22,136 7 11
	Morrumburrah	3	325 19 4	7,776	4,839 9 5	1,647	2,654		82	2	74			123		1 1 2 1	9,734 7 11
\	Wallendbeen	4	386 19 8.	2,521	770 12 1	2,117	658	•••••	12	•••••	2	32	*******	1,410		. 862 4 9	1,632 16 10
1	Cootamundra	10	1,226 0 9	11,294	8,521 8 6 466 8 1	5.175	5,932	•••••	84	14	208	33	14	5,623		15,825 1 1	24,346 9 7
	Illabo	3 3	398 10 1 218 17 11	1,695 1,221		333	248	******	*****	24	r		2	546		315 17 0 587 11 8	782 5 I
	Tunee Junction	14	1,695 2 9	9,552	433 18 0 3,847 13 2	974 758	395 5,633	5	195	12	633	т т	3	1,362		3,938 2 0	7,785 15 2
F	Harcfield	2	140 13 0	9,552	175 8 11	750 529	5,033 97	5	195			I		600		3,930 2 0	484 10 8
Î	Bomen	3	283 6 7	927	382 18 11	788	903		23			· · ·		1,741	[• • • • • • •	608 11 6	991 10 5
l S	South Wagga	12	1,750 5 5	17,684	11,955 14 0	5,122	7,345	6	782	546	164		1	5,184	8	17,057 1 4	29,012 15 4
S	Sandy Creek	2	139 5 5	1,200	174 I I	247	7,343	·	,,, ,	••••				94		31 18 1	205 19 2
T	The Rock	3	359 15 10	2,273	717 18 7	126	604		6		3			2,544	6	756 7 8	1,474 6 3
	Kerong Creek	3	173 2 10	1,989	682 18 0	87	514			,	15	• • • • • •		1,403	•	497 11 10	1,180 9 10
	Culcairn	3	395.19 5	2,794	1,167 2 5	796	911	••••		·	36			1,514		1,690 17 8	2,858 O I
	derogery	4	410 14 3	. 2,079	452 5 6	3,735	482		12	293	3	• • • • • •	• · · · · · ·	352		337 7 1	789 12 7
	Zamblif	I	119 15 5	1,271	273 18 10	472	153				17			817		146 3 6	420 2 4
	Albury and Platforms	15	1,858 15 9	21,202	17,083 5 5	6,857	5,139	•••••	300	513	1,023	13	••••	63	2,751	6,487 6 9	23,570 12 2
	Coolaman and Platforms	. 2	275 11 6	1,115	463 15 1. 769 15 8	626	775	••,	5	••••	8	• • • • • • • • • • • • • • • • • • • •	.	3,564		1,749 16 1	2,213 11 2
1	JOHNS	-	213 19 11	2,219	769 15 8	2,962	813	•••••	•••••		22		•••••	2,319	•••••	1,203 7 9	1,973 3 5

٠,	·					1	No. 27—	-continue	ed.		,						
	Stations	No. of hands employed,	Total	No. of Tickets	Revenue from Tickets and	Goo	ods.	Cos	al.	Other M	inerals.	На	y.	Wo	oL	. Earnings from	Total earnings.
		including Station- master.	Expenditure.	issued.	Coaching Traffic.	Tonnage outwards.	Tonnage inwards.	Tonnage outwards.	Tonnage inwards.	Tonnage outwards.	Tonnage inwards.	Trucks outwards.	Trucks inwards.	Bales outwards.	Bales inwards.	Goods Traffic.	Total earnings.
1188—Y	Grong Grong and Platforms		£ s. d.		, £ s. d.	•	AT SOU	THERI	N RAIL	WAY—	-continue	ed.				£ s. d.	£ s. d.
	Narrandera Quarries and Platforms Whitton Darlington and Platforms Bringagee Carathool Beabula Hay and Platforms. Victorian Railways Camden and Platforms	9 1 5 2 5	173 18 8 982 3 2 12 6 1 637 12 6 413 15 2 159 19 2 700 i0 8 117 16 7 1,084 18 5	1,624 8,686 399 1,928 1,946 258 3,681 122 6,034 13,004 284	485 9 8 7,128 15 8 139 2 10 1,095 7 3 1,043 3 0 32 11 8 1,792 9 1 12 17 1 7,522 19 2 22,282 6 10 1,583 1 4	1,545 3,190 .70 205 45 338 939 1,376 6,036	13,257 47 1,597 400 2,603 9,722 479 2,222		328 6 6 6	34	2 65 12 2 25 167 41	2 2 2 2 2 969	38 3 24 	3,251 6,787 1,197 6,660 2,299 6,099 8,688 	16 34 1,199	149 18 8 19,641 12 9 12 7 8 5,047 11 11 1,539 4 11	635 8 4 26,770 8 5 151 10 6 6,142 19 2 2,582 7 11 32 11 8 6,683 8 7 12 17 1 26,021 5 3 23,057 7 11 2,806 8 0
: }	1883		33,526 2 10 30,766 17 7	364,623 296,061	158,920 18 1 141,759 13 4½	152,511	158,891	9,459 9, <i>260</i>	17,307	41,153 48,758	9,748 7,453	2,735 2,236	399 <i>939</i>	75,272	18,888	228,684 6 5 220,906 5	387,605 4 6 362,665 15 9½
		,				GRI	EAT W	ESTERI	N RAIL	WAY.	•			,			
	Parramatta and Platforms Seven Hills ,, Blacktown Rooty Hill and Platforms South Creek ,, Penrith and Platforms Emu Plains Glenbrook Springwood Linden Lawson Wentworth Falls Katoomba Mount Victoria and Platforms Mount Wilson Clarence Zig Zag Esk Bank and Platforms Lithgow Bowenfels and Platforms Wallerawang Rydal	21 2 2 7 3 5 2 6 5 5 4 5 2 4 1 2 2 2 4 8 2 5 1 1 4	2,505 I II 233 0 2 912 5 0 392 9 I 541 6 2 3,166 15 5 546 5 4 588 10 3 469 5 7 190 16 0 290 17 2 489 5 10 246 5 10 233 15 0 406 II 6 2,145 19 4 233 3 5 626 6 9 1,390 0 7 491 I II	243,507 7,610 8,459 6,027 11,184 20,981 3,976 1,108 4,224 660 2,317 1,697 6,155 11,441 818 553 487 7,764 5,952 2,168 8,995 2,556	16,194 · 7 · 0 519 16 · 4 935 13 · 2 797 6 · 2 1,221 3 8 3,865 3 3 2 648 6 11 169 1 9 796 9 9 29 15 2 486 4 9 198 8 8 1,337 9 8 2,717 13 7 226 0 4 62 13 11 37 15 3 2,131 5 8 1,661 17 4 649 1 0 1,938 12 3 513 16 7	12,690 4,839 5,211 15,420 26,412 18,254 392 576 2,933 57 6 105 2,609 31 7,446 7,446 335 3,210 447	18,436 1,180 1,011 1,034 1,845 4,179 764 263 522 804 89 1,013 2,291 119 94 3,621 422 2,681 211	5,109	5,331 1 50 607 315 180 44 39 6 413 6 237 35	3,004 2,165 37 3,087 55,265 4 10 13,487 132 132 251	4,112 457 330 181 424 1,124 252 15 69 8 77 877 	20 103 510 96 1 1 1 1 1 1 1 1 1 1	491	139 14 30 160 40	203	8,674 I 9 573 I9 2 11,363 0 2 391 3 2 856 3 0 3,344 8 6 1,842 I4 3 27 9 8 315 I3 4	24,868 8 9 1,093 15 6 12,298 13 4 1,188 9 4 2,077 6 8 7,209 11 8 2,491 1 2 196 11 5 1,112 3 1 29 15 2 704 0 10 243 5 0 2,199 18 6 3,653 12 8 342 8 2 106 10 8 37 17 3 8,498 4 9 1,661 17 4 1,371 13 3 3,390 3 0 888 17 0

													 -				
1.		No. of hands employed,	'Total	No. of	Revenue from	Goo	ods.	Cos	.1 .	Other Mi	inerals.	На	ŗ.	Woo	ol.	Earnings from	Total earnings.
	Stations.	including Station- master.		Tickets issued.	Tickets and Coaching Traffic.	Tonnage outwards.	Tonnage inwards.	Tonnage outwards.	Tonnage inwards.		Tonnage inwards.	Trucks outwards.	Trucks inwards.	Bales outwards.	Bales . inwards.	Goods Traffic.	Total earnings.
1		••	<u> </u>		·	GRE	AT WE	STERN	RAILV	V A Vc	ontinued	······································		·			
1		t	£ s. d.	1	£ s. d.		1	1	1			1	1	1	l	£ `s. d.	(£ s. d
1,	Tarana	1 4	476 16, 1	2,716	860 3 1	1,175	557			1	. 8	105		498	l <i></i>	806, 7 4	1,666 10 5
	Lockslev		213 4 0	889	170 8 2	197	51			2		79_		2.1	i	22 14 2	193 ,2 4
	Brewongle		544 9 3	3,203	542 0 4	2,627	458		254		9	533		186	·	445 7 3	987 7 7
	Raglan		247 0 0	1,004	223 14 6	445	296		42	1	21	467		4		384 1 10	607 16 4
١,	Kelso	7	601 16 1	1,406	893 12 5	2,217	766	l	335	3	6	370		376		2,154 0 5	3,047, 12, 10
	Bathurst and Platforms		4,487 13 2'	33,705	15,537 6 2	13,387	21,830	, B	9,967	453 138	320	262	`9	1,855	; 43 ⁹	26.774 11 ·7 1,006 3 10	42,311 17 9
	Perth	2	211 3 0	3,978	359 14 0	434	468		30	687		68	••••	926	i	, ,	1,305 17 10
	George's Plains	1 4	423 15 8	4,318	550 3 2	387	516	1		' '	. 1	13		57		495 17 9	204 6 9
1	Wimbledon		240 5 I 546 6 8	1,475	192 14 1	3,785	57 779		6	5		238		796		1,205 10 0	2,274 12 3
			546 6 8	5,073	4,364 15 9	4,125	2,279	. 10	2,479	33	101-	212	3	4,454	13	12,550 3 11	16,914 19 8
1	Blayney Spring Grove and Platforms	, 5	619 15 9	5,292	905 10 3	3,098	2,610	5	40	1,158	100	339		673	·	678 18 4	1,584 8 7
1	Spring Hill		445 19 7	5,351	761 18 4	2,365	540		23	3	21	315	12	24		721 7 9	1,483 6 1
	Orange and Platforms		3,608 1 10	22,848	12,617 1 9	18,809	17,159	6	4,847	711	738	55	220	13,620	77	46,827 11 4	59,444 13 1
	Mullion Creek		215 2 3	1,559	171 7 3	3,532	38					2		68		15 15 8	187 2 11
	Kerr's Creek		344 9 9	422	76 13 8	782	27		· · · · · · ·				3 8	83		18 18 3.	95 12 5
	Warne and Platforms		370 12 1	1,708	445 3 6	53 ²	243				. 17	49	1	3,15		218 0 3	663 3 9
	Ironbarks		397, 10 7	2,327	779 8 2	272	507		182	137	, 40	4	·····	362		966 12 10 358 5 1	783 0 11
	Springs		232 1 3	1,781	424 15 10	434	14		28 176	206	382	,	······ I	3,100	6	358 5 I 6,870 9 IO	11,395 9 5
	Wellington		1,259 9 6	8,869	4,524 19 7	3,414	2,510		1,0	161	302	······ I	l .	134	1	65 7 9	317 16 7
	Mary Vale	2 2	213 3 5 178 19 1	1,394 2,037	252 8 10 428 3 6	319	110			6		2		480	· · · · · · ·	99 10 4	527 13 10
	Dubbo and Platforms	42	4,853 10 7	20,464	16,929 1 1	13,017	13,755	373	981	169	606	6	. 23	18,919	12	34,232 14 7	51,161`15 8
- 1	Narromine ,, and sidings	5	1,601 12 1	5,034	1,382 4 6	6,189	3,396		2,038	. 1	4	3	ĭī	3,279		5,852 18 3	7.235 2 9
	Trangie ,,		314 9 4	945	396 2 11	22	430		21		· i] 3	2.621		770 15 2	1.166 18 1
	Nevertire	. 3.	2,835 17 6	5,654	6,670 12 6	3,148	18,789	42	42	228	19	2	37	10,984		31,996 0 0	38,666 12 6
	Mullengudgery	3	172 3 0	269	107 3 2	4	148			•••••	٠٠٠ ٬			644		27 19 11	135 3 1
1.	Nyngan	49	2,838 0 6	6,649	10,822 9 9	3,210			393	6	27		76	38,262	, I	71,106 0 5	81,928 10 2
1	Piper's Flat		110.8 0	, 240	10 6 0,	9	. 923	1,638	741	2,340	15	.28		5.281		9^2 5 3	102 11 3
]	Capertee	17	1,600 JI 5	7,311	. 5,499 12 3	2,745	14.396	884	1,081	563	50	21	10	5.201	5	18,727 15 3	24,227 7 6
	1000	1	48,668 I 3	F07.070	125 107 4 10	194,468	175,958	118,751	31,095	84,474	10,479	4,216	1,097	117,956	1,003	304,029 13 11	429,136 18 9
j	. 1883			527,012	125,107 4 10	1 * * *	,	'•		!		1		1	1	1	, , , ,
1	- 1882	374	36,532 15 2	432,975	114,901 17 6	138,926	151,882	100,972	22,524	110,523 ·	19,897	3,473	1,611	74,978	1,023	268,499 19 11	383,401 17 5
3		!			WIND	SOR A	ND RI	CHMON	D RAI	LWAYS	 8.	1	,				•
1.	Riverstone and Platforms		1 216 1 6	8,625	768 18 10			5	231		162	35	1 8	208	177	6,208 17 11	6,977 16 9
	Mulgrave		247 2 1	2,985	521 10 5	8,895	381	21	61		56	346	2	1	3	213 6 5	, 734 16 10
	Windsor	_	618 5 0	18,654.	2,986 13 9	7,544	4,403	6	127	102	280	543	33	. 79	.21	2,185 0 10	.5,171 14 7
1	Clarendon		115 4 0	1,634	271 16, 2	97	139			53	,	19	2		••••	55 2 7	326 18 9
	Richmond		579 5 6	12,931	2,682 15 8	4,006	1,972		99	20	339	93	12	6		1,312 11 10	3,995 7.6
	•	ļ				·	<u>-</u>	 	<u> </u>						l		
I	<i>1883</i>	15	1,775 18 1	44,829	7,231 14 10	57,260	7,995	32	518	¹ 75	837	1,036	57	311	201	9,974 19 7	17,206 14 5
		15	1.681 0 7	. 36:789	7,199 8 9	47,847	7,529		441	·350	1,146	626	230	52	. 9	12,751 3 11	19,950 12 8
		1	-, ,	55,7.55	',==,	1 , , , , , , ,			1	, ;	1	ļ	ł	,	1	1	[

No. 27—continued.

	Stations.	No. of hands employed,	_ Total	No. of Tickets	Revenue from Tickets and	God	ods.	Co	al.	Other M	finerals.	Ha	y.	w	ool.	Earnings from	
		including Station- master.	Expenditure.	issued.	Coaching Traffic.	Tonnage outwards.	Tonnage inwards.	Tonnage outwards.	Tormage inwards.	Tonnage outwards.		Trucks outwards.	Trucks inwards.	Bales outwards.	Bales inwards.	Goods Traffic.	Total earnings.
1	•					•		-			<u>-</u>	·					
1																	
	•				G	REAT 1	NORTH	ERN R	AILW	ΔY.			•				
		1		l 1		ſ		i i		1]			ļ	j	1	1
Central Offic	ee	. 	£ s. d.	679	£ s. d.					•						£ s. d	£ s. d.
Newcastle .	• • • • • • • • • • • • • • • • • • • •	159	20,594 11 0	87,643	1,493 4 2 24,111 10 10	24.044	27.754		* 405 504	6 0 = 6						0	1,493 4 2
Honevsuckle	Point	16	1,975 13 0	33,885	2,148 0 11	34,044 2,765	21,754 3,274		1,407,794 286	6,256	34,588 26	128	586		51,900		3 111,688 10 1
Bullock Isla	nd	8	181 16 0			7,675	3,274 787	133	646	94 71		5	113 14	*****	•••••	1,198 15 7	0,01
Hamilton .		7	993 13 11	24,351	872 19 7	444	625			488			48i	••••	 	16,577 4 11 105 5 2	1 .0.1
Weighbridge	•i	li l				8,661		1,405,226								105 5 2	978 4 9
Waratah		II	1,403 5 6	54,211	2,546 12 0	3,074	2,481		. 882	33,392	4,914	10	178	тт		705 10 5	3,252 2 5
	l Platform	6	488 11 5	15,528	9 ² 4 5 5	466	947	7	••••	2	390	56	39	••••		205 8 6	
Tarro		I	121 0 6	4,485		1,447	113			10	84	89		***	 	58 0 7	319 1 3
Woodlord .	a	I	141 4 9	5,785	278 14 10	2,830	80	365				35 289	2			41 3 8	319 18 6
High-street	ıd	11 2	921 18 3	29,503	2,528 18 2	2,622	1,049	••••	67	254	169	289	9			4,496 2 9	7,025 0 11
West Maitle	nd	26	346 18 4 2,780 8 3	30,162	3;833 0 7	11	. I	•••••			111	•••••			•••••	21 6 7	3,854 7 2
Farley		3	2,780 8 3 322 16 6	27,627	5,232 19 10	10,330	7,206 80		1,170	17	439	667	106	179	245	16,465 7 6	21,698 7 4
Lochinvar	••••••	5	471 17 4	2,455 4,753	199 12 8 554 19 11	457 490			21 24	89		2		· · · · · · · ·	····· .	289 6 6	488 19 2
Allandale	••••	ī.	62 8 0	1,088	98 16 5	496	454 39	• • • • • • • • • • • • • • • • • • • •		•••••	37	113	2	4		235 18 7	790 18 6
Greta		6	. 497 7 8	6,333	911 16 8	717	672	12,340			1	6		*******		19 17 9 356 8 5	1 44 ' 1
Branxton	. .	4	461 10 0	6,785	, , , , , , , , , , , , , , , , , , ,	2,679	778		61		35	28	16	147		356 8 5 430 19 0	7 7 - 1
Singleton		22	3,289 14 2	15,690	1,163 2 3 5,424 19 8	3,385	3,717	97	1,286	21	96	38 86	51	294		7,658 8 4	1,594 1 3
Ravensworth		9	554 11 1	2,246	380 12 6	195	255	10				.8	12	492		281 17 6	662 10 0
Musclebrook		21	1,522 13 5	8,916	3,567 6 7	1,019	3,421	. т	119	36	58	3	53	4,197	2	5,232 5 0	1
Aberdeen		7	443 8 9	1,610	366 I3 3	223	290		I		ĭ	9		134		270 12 7	637 5 10
Scone	······	11	,870 11 6	5,016	1,982 9 4	478	1,787		65	1	52	20	10	2,687	3	2,196 9 11	
Wingen		5	389 17 9	1,250	281 9 5	62	. 494			•••	71	8		295		268 14 6	550 3 11
Murrandi		3	200 13 4	1,055	393 7 9	31	292				52	22	:	895		267 10 9	
Doughboy H	ollow	. ²⁷	3,209 3 8 302 18 8	5,500	2,421 7 7 182 8 5.	369	1,712		50	109	27	97	7	219	i -	2,250 1 3	4,671 8 10
Willow Tree		7	655 12 6	1,349 3,173	182 8 5. 786 13 4	52 279	121 529		15		I		7	547	••••	112 19 10	
Quirindi			1,177 15 7	6,030	2,325 0 4	1,362	2,182		91		4	32		2,230	•••••	699 13 10 4.177 10 8	
Werris Creek	s	15 8	845 15 5	3,350	977 14 5	251	436		91	1	7	35	5	7,247 221		サーバーン シ	1 -/5_5
Currabubula		5	317 4 4	1,635	407 6 2	588	245		,]		3	12	ə	149		505 11 6 245 16 10	
West Tamwo	orth	24	2,711 7 5	6,043	2,012 5 2	4,808	9,365	2	614	491	36	42		12,012		23,458 16 1	25,471 1 3
Tamworth		13	982 11 9	10,941	7,930 18 4	847	1,404	,		251		11	3	. 93	30	3,365 12 5	11,296 10 9
MIOONDI		10	623 0 5	2,884	989 17 7	1,701	254			2	5			681		311 14 4	1,301 11 11
Welche P	ver	3 8	² 55 ¹ 5 3	874	31 17 9	26	12							. r	131	22 I 4	53 19 1
Kentucky	d		676 5 5	2,644	1,420 8 4	753	973		, 6		23			4,454		3,587 15 2	5,008 3 6
Uralla		20	220 18 11	2,238	405 5 2	171	242			12	6 r			695	4	396 14 0	801 19 2
Armidale	***************************************		1,302 13 6 3,813 2 2	8,399	3,536 5 9	6,097	11,985		124	2,576	25	1	2	7,050	24	21,313 9 3	24,849 15 0
Breeza	***************************************	35	° 574 3 10	13,577	12,123 2 10 568 16 3	2,535	16,006		2,359	881	189	I	31	4,928	4	38,935 1 10	
Curlewis	***************************************	. 2	166 14 6	. 1,009	568 16 3	247	216			•••• ′	<u> </u>	•••••	3	666		616 13 11	
1		-		1,010	233 2 10	2,455	130		1		1	••••	•••••	206		277 3 2	512 6 0
		<u>`</u>		·				<u>'</u>		······			l		. '		

No. 27—continued.

	No. of hands employed.	Total	No. of	Revenue from	Go	ods.	Co	al.	Other M	inerals.	Ha	N.	Wo	ol.	Earnings from	Total earnings.
Stations.	including Station- master.	Expenditure.	Tickets issued.	Tickets and Coaching Traffic.	Tonnage outwards.	Tonnage inwards.	Tonnage outwards	Tonnage inwards.	Tonnage outwards.	Tonnage inwards.	Trucks outwards.	Trucks inwards.	Bales outwards.	Bales inwards.	Goods Traffic.	Tour carmings.
			<u></u>		<u> </u>	<u> </u>										
	F			GREAT	NORT	HERN	RAILV	WAY—c	ontinued	•						
	1	£ s. d.	1	£ s. d.	1	·	1		1				1	1	£ s. d.	} . £ s. d
Gunnedah Boggabri Turrawan Narrabri	19 10 2 31 28	1,897 10 6 780 16 7 213 4 9 3,622 19 6 2,281 11 0	7,926 3,251 622 7,950 22,824	5,113 16 0 1,373 15 4 107 13 4 9,918 12 0 1,616 16 0	832 269 586 480 16,414	3,478 811 17 16,910 1,653	7	101 11 173 11,447		32 9 98 2,504		64 9 433	8,319 1,471 25 55,023 493	 63,702	9,105 15 8 2,034 12 6 6 7 0 51,203 14 1 20,431 7 4	3,408 7 10
Morpeth	5	598 4 6	30,207	1,395 13 9	735	7,091		1,320		911		228			1,757 17 4	3,153 11 1
1883	634	66,276 0 7	514,492	115,437 10 1	126,368	126,368	1,428,756	1,428,756	45,066	45,066	2,065	2,065	116,068	116,068	329,776 12 1	445,214 2 2
1882	497	51,678 14 11	406,878	94,358 0 8	108,491	108,491	1,327,060	1,327,060	58,339	58,339	2,254	2,254	73,334	73,334	080,017 16 1	374,375 16 9
- -				· · · · · · · · ·	 ;	 [;	 [; -	[[J
						SUM	ARY.						•			
Suburban Line, including Sydney Southern Line	578 292 454 15	67,471 3 0 33,526 2 10 48,668 1 3 1,775 18 1	364,623 527,012	235,393 12 5½ 158,920 18 1 125,107 4 10 7,231 14 10	225,494 152,511 194,468 57,260	158,891 175,958	9,459	17,307 31,095	41,153 84,474	115,579 9,748 10,479 837	2,735 4,246	399 • 1,097		224,879 18,888 1,003 201	228,684 6 5 304,029 13 11	640,764 5 16 387,605 4 6 429,136 18 9 17,206 14 5
Northern Line	1,339 634	151,441 5 2 66,276 0 7		526,653 10 2½ 115,437 10 1	629,733 126,368	1		138,307 1,428,756	1			•	244,971 116,068			1,474,713 3 6 445,214 2 2
1883	1,973	217,717 5 9	+4,862,592	642,091 O 3½	*756,101	756,101	1,567,063	1,567,063	181,709	181,709	11,335	11,335	361,039			1,919,927 5 8
1882	1,716	179,602 19 7	† <i>4,161,646</i>	576,309 16 11/2				'	·		<u> </u>	ـــــــا			1,113,299 18	<u> </u>
					1883 1882	Mails, a 	dvertising "	, sale of O	ld Materia	al, &c., £3 £3	34,723 Is 31,597 I98	. 3d. <i>Les</i> . 1d.	s Credits,	£19,955 £20,191	16s. 4d 12s. 2d	14,767 4 11
												1883—G 1882—	ross Earn			

No. 28.*

GREAT SOUTHERN, WESTERN, AND RICHMOND RAILWAYS.
RETURN showing Outwards and Inwards Traffic at each Station during 1883.

,	Coad	ching	Go	ods.	Coaching	and Goods,	Total Coaching and Goods.
Stations	Outwards.	Inwards	Outwards.	Inwards	Outwards.	Inwards	Inwards and Outwards.
		Subu	rban Railway,	including Syl	DNEY.	<u> </u>	
Central Office	£ s. d. 34,636 8 3 139,838 18 6 1,223 4 2 1,858 0 4 6,508 1 4 2,006 3 6 11,453 9 3 4,286 1 8 8,759 9 10 4,023 9 2 9,645 12 10 2,495 11 0 2,495 11 0 2,663 17 2 1,948 10 1 585 9 4 5,087 6 5	£ 8. d 569 8 5 189,688 0 9 115 14 2 533 11 1 4,269 19 1 802 17 5 5,836 16 2 1,993 4 10 4,388 15 4 1,831 4 6 5,119 11 7 843 15 8 2,573 0 3 4,948 1 11 547 1 1 5,960 5 7	£ s. d	£ s. d 224,651 10 9 5,050 4 6 1,022 19 11 0 3 9 21,226 15 3 9,481 4 4 3 16 8 4,296 9 6 6 11 0 4,198 0 8 88,906 13 0 999 1 0 396 9 1 7,371 13 2	£ s. d. 34,636 8 3 53,150 3 1 490,090 9 6 1,223 4 2 1,858 0 4 7,439 0 0 2,006 3 6 11,725 9 11 4,286 3 11 9,145 4 8 4,023 17 10 9,896 11 5 2,495 11 0 5,307 14 0 2,358 16 9 654 12 3 42,223 3 10	£ 8. d. 569 8 5 224,651 10 9 194,738 5 3 1,138 14 1 533 14 10 25,496 14 4 802 17 5 15,318 0 6 1,997 1 6 8,685 4 10 1,837 15 6 9,317 12 3 843 15 8 91,479 13 3 5,947 2 11 943 10 2 13,331 18 9 597,633 0 5	£ s. d. 35,205 16 8 277,801 13 10 684,828 14 9 2,361 18 3 2,391 15 2 32,935 14 4 2,809 0 11 27,043 10 5 6,283 5 5 17,830 9 6 5,861 13 4 19,214 3 8 3,339 6 8 96,787 7 3 8,305 19 8 1,598 2 5 555,555 2 7
			GREAT SOUTH	 ERN RAILWAY.	l		
Merrylands Guildford Fairfield Cabramatta & Platfms Liverpool Minto & Platforms Campbelltown Menangle & Platforms Douglas Park Picton Colo Vale Mittagong & Platforms Bowral Moss Vale & Platforms Bundanoon Marulan Towrang Goulburn Breadalbane Gunning Jerrawa Yass Bowning & Platforms Binalong Rocky Ponds & Platforms Binalong Rocky Ponds & Platforms Cootamundra Wallendbeen & Platforms Cootamundra Wallendbeen & Platforms Cootamundra Wallendbeen & Platforms Cootamundra Sethungra Junee Junction Harefield Bomen South Wagga Sandy Creek Culcairn Gerogery Yambla Albury and Platforms Old Junee Coolaman & Platforms Coong Grong Narrandera Yanco and Platforms Whitton	780 13 0 1,826 2 7 30 7 1 2,481 16 10 1,972 15 6 4,648 14 11 671 14 4 1,540 3 7 135 0 7 641 9 3 1,880 18 10 109 7 3 3,765 3 5 557 6 4 1,614 2 1 89 0 8 2,378 15 6 4,583 10 6 407 12 10 7,780 18 7 407 13 0 389 10 10 3,594 16 11 367 5 3 11,059 0 11 165 4 11 367 5 3 11,059 0 11 165 4 11 367 5 3 11,059 0 11 162 0 9 648 7 1 15,821 19 8 370 19 10 702 7 6 482 3 6,681 0 4	130 18 4 150 11 2 1,346 2 4 350 0 11 3,324 13 11 611 17 1 6,392 1 2 548 6 4 2,141 2 3 162 7 4 2,739 3 8 3,128 14 7 6,503 7 11 575 19 0 1,619 4 3 286 11 7 20,445 6 7 508 11 9 1,798 10 10 100 3 5 3,949 7 11 530 0 4 1,493 0 9 1,798 10 10 103 3 5 3,949 7 11 530 0 4 1,493 0 9 1,798 10 10 103 3 5 3,949 7 11 530 0 4 1,493 0 9 1,798 10 10 103 3 5 3,949 7 11 530 0 4 1,798 10 10 103 3 5 1,798 10 10 103 3 5 1,798 10 10 103 3 5 1,798 10 10 103 3 7 104 10 10 105 10 10 10 107 10 10 10 108 10 10 108 108 10 108 10 10 108 10 10 108 10 10 108 10 10 108 10 10 108 10 10 108 10 10 108 10 10 108 10 10 108 10 10 108 10 10 108 10 10 108 108 108 10 108 108 10 108 108 108	261 I I 276 7 I 1,264 2 4 522 3 4 3,461 14 6 1,068 8 5 1,100 14 5 522 I 8 330 2 4 2,638 18 5 686 18 10 9,658 10 I 1,100 14 10 5,917 17 11 816 3 5 7,866 18 8 323 11 7 25,810 11 11 922 19 10 2,730 11 10 118 8 5 3 728 16 0 2,759 11 0 2,730 11 0 2,730 11 0 2,730 11 0 2,730 11 0 2,730 11 0 2,730 11 0 2,730 17 0 9,637 10 7 387 14 11 876 1 7 4 17 8 1,051 17 3 5,7673 14 9 2,170 11 7 9,497 16 10 380 13 9 2,170 11 7 9,497 16 10 380 13 9 2,170 11 7 9,497 16 10 11 7 9,497 16 5 11,299 17 9 3,305 19 1 3,055 5 3 2,883 10 8 14,052 1 9 3,055 5 3 3 2,883 10 8 14,052 1 9 890 6 7 3,989 3 8	530 12 4 129 12 8 694 6 10 117 12 7 6,430 7 0 248 13 3 3,483 7 11 234 16 3 569 14 6 1,439 2 11 129 5 4 3,101 4 5 2,325 5 5 5 4,730 4 0 570 17 8 1,706 13 4 40 3 4 54,103 14 10 530 5 8 2,423 13 2 32 9 1 8,241 18 3 4,253 1 7 559 19 3 7 8,241 18 3 4,253 1 7 55,321 5 5 1,000 8 10 14,796 14 5 323 1 10 623 0 8 3,204 12 8 99 17 11 336 13 4 17,938 14 4 17,796 14 5 323 1 10 623 0 8 3,204 12 8 99 17 11 336 13 4 17,938 14 4 17,796 14 5 323 1 10 623 0 8 3,204 12 8 99 17 11 336 13 4 17,938 14 4 17,79 1 4 55 11 465 11 4 1,719 3 4 342 5 6 215 19 3 15,320 4 9 1,262 10 7 1,342 9 10 481 3 7 33,529 6 6 79 16 0 2,833 6 3	469 7 2 516 13 7 2,862 6 11 937 10 8 7,460 15 11 1,848 6 9 8,262 8 3 1,203 18 5 1,110 15 4 4,465 1 0 717 5 11 12,140 6 11 3,073 10 4 10,566 12 10 1,487 17 9 9,401 2 3 458 12 2 45,235 11 6 1,564 9 1 4,611 10 8 227 15 8 7,493 19 5 3,316 17 4 4,442 9 0 146 13 11 10,052 10 3 5,813 18 1 2,857 18 11 2,857 9 10 17,418 9 2 795 7 11 1,265 12 5 4,535 2 11 5,561 17 3 2,36 18 5 1,700 4 4 1,170 4 4 1,170 3 3 2,889 3 8 2,537 16 10 20,556 17 3 236 18 5 1,700 4 4 1,170 3 3 6 27,121 17 5 3,676 18 11 3,757 12 9 3,315 14 1 20,733 2 1 1,001 3 7	661 10 8 280 3 10 2,040 9 2 467 13 6 9,755 0 11 860 10 4 9,875 9 1 783 2 7 1,151 18 10 3,580 5 2 291 12 8 5,840 8 1 5,4454 0 0 11,233 11 11 1,146 16 8 3,325 17 7 326 14 11 74,549 2 5 1,038 17 5 4,222 4 0 132 12 6 9,868 11 6 8,771 18 7 5,746 2 4 145 2 8 20,430 17 4 10,221 8 6 1,687 14 3 22,618 7 0 710 15 10 955 10 2 6,739 18 6 263 2 11 612 3 0 29,642 11 6 277 8 0 1,382 18 3 958 9 2 2,625 4 0 701 6 6 413 19 2 28,814 8 4 1,468 9 9 2,006 6 1 887 7 7 40,090 6 9 1,3562 14 7 169 4 11 169 4 11 169 4 17 169 4 17 169 4 17 169 4 17	1,130 17 10 796 17 5 4,902 16 1 1,405 4 2 17,215 16 10 2,708 17 1 18,137 17 4 1,987 1 0 2,262 14 2 7,045 6 2 1,008 18 7 18,980 15 0 8,527 10 4 21,800 4 9 2,634 14 5 12,726 19 10 785 7 1 119,784 13 11 2,603 6 6 8,833 14 8 360 8 2 17,362 10 11 12,088 15 11 10,188 11 4 291 16 7 30,483 7 7 16,035 6 7 4,545 4 1 40,036 16 2 1,506 3 9 2,221 2 7 11,275 1 5 809 1 7 3,149 19 10 50,199 8 9 514 6 5 3,083 2 7 2,155 14 5 3,083 2 7 2,155 14 6 5 3,083 2 7 2,155 14 6 5 3,083 2 7 2,155 14 6 5 3,083 2 7 2,155 14 6 5 3,083 2 7 2,155 14 6 5 3,083 2 7 2,155 14 6 5 3,083 2 7 2,155 14 6 5 3,083 2 7 2,155 14 6 5 3,083 2 7 2,155 14 6 5 3,083 2 7 2,155 14 7 8,149 19 10 50,199 8 9 514 6 5 3,083 2 7 2,155 14 6 5 3,083 2 7 2,155 14 6 5 3,083 2 7 2,155 14 6 5 3,083 2 7 2,155 14 6 5 3,083 2 7 2,155 14 6 5 3,083 2 7 2,155 14 6 5 3,083 2 7 2,155 14 7 8,164 2 8 8 5,763 18 10 4,203 1 8 60,823 8 10 1,193 17 2 8,563 18 2
Darlington Bringagee & Platforms Carrathool ,, Beabula Hay and Platforms Victorian Railways	957 15 0 73 4 9 1,655 13 0 17 14 4 6,982 14 2 22,266 9 8	554 7 3 308 7 1 1,250 3 11 153 16 10 6,074 12 6 24,060 2 9	6,294 5 9	656 5 11 4,628 15 5 16,074 6 2 700 12 11	7,252 0 9 73 4 9 10,411 13 5 17 14 4 16,817 18 4 22;387 12 11½	1,210 13 2 308 7 1 5,878 19 4 153 16 10 22,148 18 8 24,760 15 8	8,462 13 11 381 11 10 16,290 12 9 171 11 2 38,966 17 0 47,148 8 7½
Camden & Platforms		969 0 4	3,089 18 9	1,366 15 10	4,270 10 3 336,574 17 10 ¹ / ₂	2,335 16 2	6,606 6 5

* Includes Camden Line.

No. 28—continued.

Return showing Outwards and Inwards Traffic at each Station during 1883—continued.

	Coac	ching.	God	ods.	Coaching a	and Goods.	Total Coaching
Stations.	Outwards.	Inwards.	Outwards.	Inwards.	Outwards.	Inwards.	Inwards and Outwards.
			GREAT WEST	ern Railway.			
Parramatta & Platfms. Seven Hills Blacktown Rooty Hill & Platfms. South Creek Penrith Emu Plains Glenbrook Springwood Linden Lawson Wentworth Falls Katoomba & Platfms. Mt. Victoria Mt. Victoria Mt. Visson Clarence Zig Zag Eskbank & Platforms Lithgow Bowenfels Wallerawang & Ptfms. Rydal Tarana & Platforms Locksley Brewongle Raglan Kelso Bathurst Perth and Platforms George's Plains Wimbledon Newbridge Blayney & Platforms Mullion Creek Kerr's Warne Lironbarks Springs Wellington & Platfms. Maryvale Murrumbidgerie Dubbo & Platforms Narromine Trangie Nevertire Mullungudgery & Pls Nyngan Piper's Flat Capertee & Platforms	£ 8. d. 16,117 10 3 494 16 0 920 11 5 779 16 10 1,502 10 7 3,757 6 2 572 13 6 126 16 0 678 17-2 135 13 10 480 10 4 175 2 1 1,133 11 1 2,619 2 9 191 6 0 57 17 5 42 5 0 2,073 8 9 1,602 12 5 550 0 5 2,044 0 5 488 2 10 165 16 5 16 5 187 13 3 211 7 5 487 13 3 211 7 5 846 18 8 15,060 11 11 348 17 1 489 6 3 150,060 11 11 348 17 1 489 6 3 150,060 11 11 348 17 1 489 6 3 150,060 11 11 348 17 1 489 6 3 150,060 11 11 348 17 1 489 6 3 150,060 11 11 348 17 1 489 6 3 150,060 11 11 348 17 1 489 6 3 150,060 11 11 348 17 1 489 6 3 150,060 11 11 348 17 1 35 18 18 18 18 18 18 18 18 18 18 18 18 18	# s. d. 13,021 15 7 408 15 2 993 17 1 742 13 1 1,155 16 11 3,686 18 7 575 14 7 4 1,153 0 5 461 9 5 971 11 0 585 6 3 1,878 18 7 5,510 7 6 323 8 0 125 10 2 80 92 2 1,453 18 3 5,510 7 6 323 8 0 125 10 2 80 92 1 453 18 7 80 1 2 11 261 14 11 446 2 0 178 15 5 624 4 1 16,487 4 10 178 15 5 624 4 1 16,487 4 10 178 15 5 624 1 1 16,487 4 10 178 15 5 624 1 1 16,487 4 10 178 15 5 624 1 1 16,487 1 7 420 17 4 133 17 10 811 15 6 4.055 3 5 657 19 1 545 19 10 12,407 3 10 162 18 3 56 10 11 341 11 1 672 3 5 657 19 1 163 38 30 197 13 2 244 13 1 16,333 7 10 1,240 17 3 4,52 13 5 7,212 2 11 81 6 11 9,196 19 3 70 3 9 4,471 13 6 124,049 19 11	£ s. d. 3,253 i 6 1,066 i 6 3,700 i 4 4,066 2 i 1 4,742 i6 ii 9 6,766 i 4 0 108 8 10 703 i 2 6 34 i 8 2 15 7 7 2 4 i 8 6 62 i 9 9 7,235 i 5 ii 14 5 ii 152 0 4 44,376 i 6 i 1192 i 7 ii 4,181 9 7 5,151 i 0 8 1,174 i 5 2 2,44 6 9 1,805 3 0 1,331 i 3 4 2,679 6 7 942 0 5 593 i 3 0 1,331 i 3 4 2,679 7 942 0 5 593 i 3 0 1,331 i 3 4 2,679 6 6 381 2 3 2,127 4 4 6 3,098 i 5 7 1,919 i 5 4 25,155 9 7 326 7 0 14,181 0 6 381 2 3 293 5 9 14,623 i 6 1 i 3,098 i 5 7 1,919 i 5 4 25,155 9 7 326 i 9 7 48,122 i 5 ii 5,044 i 2 io 2,702 0 6 24,483 i 5 4 3,951 9 5 40,547 i 5 9 1,738 i 4 5 5,077 8 6	£ s. d. 8,835 o 1 291 6 o 12,649 8 o 143 7 2 959 6 2 456 1 7 94 2 4 376 13 11 138 6 5 248 18 7 69 6 2 917 1 1 2,588 13 10 140 15 4 47 7 3 0 9 7 4,187 7 9 756 11 6 29 8 10 484 16 1 365 4 5 2,397 18 11 27,024 4 9 496 6 10 45 5 1 1,374 11 1 10,371 0 7 1,101 13 7 619 18 9 37,730 1 1 18 18 8 231 5 5 977 8 5 351 15 6 7,056 13 7 1,516 6 7 15516 6 7 15516 6 7 26,334 16 18 80,734 11 5 270 14 7 26,965 17 3 315,352 10 9	# s. d. 19,370 11 9 1,561 2 3 1,620 12 9 2,839 16 8 5,908 12 8 8,500 3 1 10,249 7 6 1382 9 8 170 12 0 495 17 6 180 0 7 1,196 10 10 9,854 17 10 205 11 11 209 17 9 42 5 0 46,450 4 10 1,602 12 5 742 18 4 6,225 10 0 1,003 13 13 6 1,987 19 7 390 3 2 2,292 16 3 1,543 0 9 3,526 5 5 26,765 19 5 1,200 17 6 1,082 19 3 386 19 1 3,121 16 7 10,109 2 9 3,958 4 4 2,598 15 10 36,873 15 3 485 12 11 702 15 8 18,876 12 7 466 12 10 729 11 5 64,364 9 0 6,346 5 5 3,067 0 8 30,184 16 0 49,861 16 4 1,736 11 7 409,661 17 5	£ s. d. 21,856 15 8 700 1 2 13,643 5 1 1,186 0 3 2,114 17 2 7,244 4 9 1,031 16 3 408 9 8 1,529 14 4 599 15 10 1,220 9 7 654 12 5 2,795 19 8 8,099 1 4 464 3 4 172 17 5 80 18 9 5,641 6 1 1,72 17 5 80 18 9 5,641 6 1 1,72 17 5 80 18 9 5,641 6 1 1,72 17 5 1,662 15 0 5,393 9 0 827 12 4 1,647 14 5 2,91 3 9 230 18 1 543 19 10 3,022 3 0 43,511 9 7 1,189 10 11 917 4 2 179 2 17 2,186 6 7 14,426 4 0 2,059 12 8 1,165 18 7 50,137 4 11 177 15 2 75 9 7 75,2 16 6 1,649 11 10 607 2 11 1,393 2 1 75,194 4 8 1,969 0 0 3,546 9 5 235 3 0 89,931 10 8 340 18 4 31,437 10 9 439,402 10 8	£ 8. d. 41,227 7 5 2,261 3 5 15,263 17 10 4,025 16 11 8,023 9 10 15,744 7 10 11,281 3 9 643 14 0 2,912 4 0 770 7 10 1,716 7 1 834 13 0 3,992 10 13 17,953 19 2 069 15 3 382 15 2 123 3 9 52,091 10 11 5,137 14 10 2,405 13 4 11,618 19 0 1,831 5 10 3,635 14 0 3,635 15 0 3,635 15 0 3,635 16 0 3,635 17 0 3,635 17 0 3,635 17 0 3,635 17 0 3,635 17 0 3,635 17 0 3,635 17 0 3,635 17 0 3,635 17 0 3,635 17 0 3,635 17 0 3,635 17 0 3,635 17 0 3,635 17 0 3,635 14
	118,538 16 10	124,049 19 11	291,123 0 7	315,352 10 9	409,661 17 5	439,402 10 8	849,064
		. w	INDSOR AND RIC	CHMOND RAILWA	Y.		
Riverstone & Platfms. Mulgrave Windsor Clarendon Richmond	842 19 2 514 1 10 2,935 13 10 266 1 5 2,637 11 7	653 0 10 441 10 5 3,908 19 5 1,736 0 6 2,682 0 3	6,511 9 10 2,019 4 4 3,873 1 0 59 7 5 1,521 19 7	3,655 5 0 219 0 3 2,457 1 11 82 9 6 1,480 4 2	7,354 9 0 2,533 6 2 6,808 14 10 325 8 10 4,159 11 2	4,308 5 10. 660 10 8 6,366 1 4 1,818 10 0 4,162 4 5	11,662 14 10 3,193 16 10 13,174 16 2 2,143 18 10 8,321 15 7
	7,196 7 10	9,421 11 5	13,985 2 2	7,894 0 10	21,181 10 0	17,315 12 3	38,497 2 3
	·.		GRAND	SUMMARY.	•		
Suburban Line Southern Line Western Line Richmond Line	150,171 7 51	149,433 5 9½	445,501 1 7 186,403 10 5 291,123 · 0 · · 7	367,611 12 7 246,154 10 7	682,520 14 5 336,574 17 10½ 409,661 17 5 21,181 10 0	395,587 16 4	1,280,153 14 10 732,162 14 3 849,064 8 1 38,497 2 3
Northern Line	512,926 4 11½ 113,218 6 10	512,926 4 11½	937,012 14 9	937,012 14 9	1,449,938 19 8½ 441,443 9 7 43,312 1 4		
	626,144 11 92	626,144 11. 92	1,265,237 17 6	1,265,237 17 6	1,934,694 10 7,2	1,934,694 10 7	3,869,389 г з

No. 28—continued.

GREAT NORTHERN RAILWAY.

Return showing Outwards and Inwards Traffic at each Station during 1883—continued.

,.		ching.	· Go		Coaching	and Goods.	Total Coaching
, Stations.	Outwards.	Inwards.	Outwards.	Inwards.	Outwards.	Inwards.	and Goods, Outwards and Inwards.
Central Office Newcastle Honeysuckle Point Bullock Island Wickham Siding Weighbridge Hautilton Waratah Wallsend Sandgate Cemetery Hexham Tarro Woodford Victoria-street East Maitland Morpeth High-street West Maitland	25,472 19 11 2,195 6 4	£ s. d. 538 17 7 26,979 4 7 1,126 15 3	£ s. d. 55,225 17 2 3,588 15 1 17,282 2 5 26 11 4 67,064 5 4 286 9 0 1,793 5 1 266 16 4	£ s. d. 96,876 9 5 1,094 14 10 87 7 10 98 10 4	£ s. d. 2,718 14 6 80,608 17 1 5,784 1 5 17,282 2 5 26 11 4 67,064 5 4 1,141 7 0 4,134 4 9 1,480 13 0 31 16 1 1 14 0 901 6 7 539 11 6 583 0 5 194 6 1 3,704 8 9 55,872 15 10 4,049 16 5 23,865 2 4	£ s. d. 538 17 7 123,855 14 0 2,221 10 1 87 7 10 98 10 4	£ s. d. 3,257 12 1 204,554 11 1 8,005 11 6 17,369 10 3 125 1 8 67,064 5 4 1,799 19 11 7,123 17 6 4,594 6 9 162 18 7 377 6 0 1,817 0 11 720 4 6 777 13 0 206 3 1 10,082 19 4 92,335 17 3 4,410 18 7 36,937 0 5
	51,081 16 5	47,694 15 5	218,992 18 5	143,953 7 6	270,074 14 10	191,648 2 11	461,722 17 9
Farley Lochinvar Allandale Greta Branxton Belford Whittingham Coal Siding Singleton Glennie's Creek Ravensworth Liddell Grass Tree Muswellbrook Aberdeen Scone Park Wingen Blandford Murrurundi Temple Court Doughboy Hollow Willow Tree Braefield Quirindi Quipolly Werris Creek Currabubula Duri West Tamworth Tamworth Moonbi Macdonald River Walcha Road Wolleen Kentucky Uralla- Kelly's Plain Armidale	574 I 6 170. 9 4 896 15 6 1,108 6 3 45 8 2 79 4 9 5,203 15 9, 88 7 3 346 9 7 21 0 11 40 14 0 3,357 2 5 359 17 11 1,781 17 7 20 3 10 262 4 1 370 4 11 2,104 8 10 68 6 5 161 2 9 676 3 8 11 3 3 2,125 12 7 42 0 11 989 9 3 385 10 8 27 I 4 1,812 14 8 7,374 14 8 7,374 14 8 7,374 14 8 7,374 14 8 7,374 14 8 7,374 14 8 7,374 14 8 7,374 14 8 7,374 14 8 7,374 14 9 183 9 2 1,131 9 5 19 19 9 372 10 9	179 19 3 424 11 4 142 19 1 703 1 1 789 5 8 92 12 6 193 19 10	223 10 10 441 11 2 260 5 4 1,329 18 5 2,033 1 0 2 15 2 63 8 11 17 18 5 3,290 13 10 96 18 0 233 0 11 3 19 1	11,980 19 7 417 17 3 33 18 9 299 0 1 383 9 10 6 13 4 74 19 3 0 16 0 6,889 8 1 43 18 3 235 7 4 10 1 5 0 13 3 5,039 13 3 246 18 6 1,980 1 3 246 18 10 6,2426 9 0 119 0 6 757 16 10 0 8 0 119 0 6 757 16 10 0 8 0 3,993 16 4 30 3 5 478 14 4 299 10 3 3,111 19 0 377 6 4 46 13 6 2,428 16 5 2 2 2 279 11 11 36,611 10 3 0 35,052 17 8	416 15 6 1,015 12 8 430 14 8 2,226 13 11 3,141 7 3 48 3 4 142 13 8, 17 18 5 8,494 9 7 185 5 3 579 10 6 25 0 0 40 14 0 5,706 6 5 793 14 7 3,383 2 4 6 14 7 2,125 15 10 11 8 0 11,004 7 4 92 7 3 1,708 17 11 716 17 7 80 10 1 13,240 8 4 8,363 3 3 1,319 9 7 844 13 4 3,348 15 0 20 0 1 808 11 0 13,585 12 8 17,027 0 2	12,160 18 10 842 8 7 176 17 10 1,002 1 2 1,172 15 6 99 5 10 268 19 1 0 16 0 12,465 1 7 207 5 18 11 38 8 0 8,364 3 10 566 17 40 74 1 1 505 18 6 713 14 3 4,661 17 6 123 1 7 262 12 11 1,301 16 7 21 2 2 10 1,276 0 1 5,950 7 9 142 3 10 1,276 0 1 5,755 5 5 86 18 10 22,946 5 6 9,756 0 8 1,226 4 3 182 9 7 3,465 19 1 43 6 6 526 1 2 40,275 11 10 1,8692 7 0	12,577 14 4 1,858 1 3 607 12 6 3,228 15 1 4,314 2 9 147 9 2 411 12 9 18 14 5 20,959 11 2 392 11 1 1,009 2 2 82 18 11 79 2 0 14,070 10 3 1,270 11 11 6,987 10 2 95 9 11 958 19 8 1,484 18 10 7,442 7 11 191 10 0 679 7 6 3,427 12 5 33 10 10 6,954 15 1 2,984 18 0 1,292 3 0 16,954 15 1 2,984 18 0 1,292 4 11 6,814 14 1 6,814 14 1 6,814 14 1 6,814 14 1 6,814 14 1 6,814 14 1 6,814 14 1 6,814 14 1 6,814 14 1 6,814 14 1
	47,054 4 7	49,861 ī5 6	58,317 6 4	134,426 8 2	105,371 10 11	184,288 3 8	259,659 r4 7
Gap Breeza Curlewis Gunnedah Emerald Hill Boggabri Baan Baa Turrawan Narrabri	11 11 9 504 10 11 227 0 2 4,638 3 7 44 3 5 1,203 10 1 10 15 7 99 6 9 8,343 3 7	54 7 7 435 14 6 185 11 9 4,442 10 7 47 15 11 1,130 9 9 34 18 2 59 9 10 9,270 17 10	1 9 1 5,873 16 5 1,019 19 6 7,051 8 1 0 2 0 2,760 4 6 72 13 7 34,135 3 6 50,914 18 0	21 0 1 564 9 7 217 17 1 7,925 12 2 5 14 7 1,933 2 6 3 10 2 28 11 1 39,145 9 10 49,845 7 1	13 0 10 6.378 7 4 1,246 19 8 11,689 11 8 44 5 5 3,963 14 5 10 17 1 172 0 4 42,478 7 1	75 7 8 1,000 4 1 403 8 10 12,368 2 9 53 10 6 3,063 12 3 38 8 4 88 0 11 48,416 7 8	88 8 6 7,378 11 5 1,650 8 6 24,057 14 5 97 15 11 7,027 6 8 49 5 5 260 1 3 90,894 14 9 131,504 6 10
Suburban Linc Great Northern Line North-Western Line	51,081 16 5 47,054 4 7 15,082 5 10	47,694 15 5 49,861 15 6 15,661 15 11	218,992 18 5 58,317 6 4 50,914 18 0	143,953 7 6 134,426 8 2 49,845 7 1	270,074 14 10 105,371 10 11 65,997 . 3 10	184,288 3 8 65,507 3 0	461,722 17 9 289,659 14 7 131,504 6 10
Mails, &c	113,218' 6'10	113,218 6 10	328,225 2 9	328,225 2 9	441,443 9 7 10,634 19 6	441,443 9 7 10,634 19 6	882,886 19 2 21,269 19 .0

No. 29.*

Return showing Live Stock Earnings for years 1882 and 1883.

			Year 1882.		,			Year 1883.		
Month.	Southern.	Western.	Richmond.	Northern.	Total.	Southern.	Western.	Richmond.	Northern.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
January	4,436 13 5	4,042 0 7	29 15 7	1,250 16 6	9,759 · 6 I	4,855 15 9	7,119 14 1	22 13 6	2,151 5 4	14,149 8 8
February	3,689 9 г	3,012 17 8	12 9 5	59 ¹ 4 7	7,306 0 9	3,221 9 5	6,754 10 3	24 4 4	1,644 11 10	11,644 15 10
March	4,870 2 0	2,477 6 5	26 4 6	1,359 3 5	8,732 16 4	2,430 3 5	6,690 18 10	22 15 9	2,155 10 5	11,299 8 5
April	3,283 12 6	3,637 19 11	17 10 6	1,725 9 4	8,664 12 3	2,765 1 1	4,533 16 0	33 8 0	2,604 7 7	9,936 12 8
Мау	2,322 6 7	5,050 6 11	20 7 2	3,651 11 3	11,044 11 11	2,696 10 7	5,047 6 2	23 6 6	1,950 5 4	9,717 8 7 .
June	1,696 1 3	4,667 17 8	11 9 5	2,121 15 1	8,497 3 5	2,545 10 5	5,640 9 11	15 8 2	1,740 16 3	9,942 4 9
July	2,930 0 9	6,559 9 6	21 0 5	2,037 5 2	11,547 15 10	3,488 3 4	6,225 19 11	18 8 4	2,598 3 10	12,330 15 5
August	2,894 13 9	- 7,658 II I	21 18 3	2,560 10 10	13,135 13 11	3,597 14 1	7,394 8 5	26 11 8	3,077 0 10	14,095 15 0
September	2,668 4 2	10,992 13 1	26 19 7	2,248 11 10	15,936 8 8	4,034 7 9	7,779 8 o	18 0 10	2,196 8 6	14,028 5 1
October	5,442 19 8	8,934 8 0	14 8 11	2,429 15 0	16,821 11 7	7,366 12 11	8,386 5 3	10 13 5	2,608 17 8	18,372 9 3
November	6,663 6 2	7,452 6 11	33 6 9	1,851 7 4	16,000 7 2	. 8,505 11 10	4,374 14 2	21 14 10 [.]	2,239 12 3	15,141 13 1
December	4,120 4 7	6,898 16 9	22 9.5	1,591 1 8	12,632 12 5	6,570 19 6	5,096 19 9	17 2 10	2,616 5 1	14,301 7 2
Totals	45,017 13 11	71,384 14 6	`257 19 11	23,418 12 0	140,079 0 4	52,078 0 1	75,044 10 9	254 8 2	27,583 4 11	154,960 3 11

*Includes Camden Line.

No. 30.* RETURN of the quantity of Wool carried on the Railways of New South Wales, and the amount of Freight received therefrom, in 1882 and 1883.

					,	1882.									1883.				
	Months.		Bales.			Weight.			Freight.			Bales.			Weight.			Freight.	
1188		s. & w.	North.	Total.	S. & W.	North.	Total.	S. & W.	North.	Total.	S. & W.	North.	Total.	S. & W.	North.	Total.	S. & W.	North.	Total.
$-\mathbf{z}$	•	No.	No.	No.	Tons.	Tons.	Tons.	£	£	£	No.	No.	No.	Tons.	Tons.	Tons.	£	£	£
	January	17,038	8,989	26,027	2,834	1,620	4,454	6,659	3,714	10,373	23,624	13,683	. 37,307	3,965	2,533 _.	6,498	9,707	6,155	15,862
	February	8,215	3,826	12,041	1,301	688	1,989	3,052	1,597	4,649	12,432	6,461	18,893	1,978	1,154	3,132	4,847	3,007	7,854
	March	5,898	4,633	10,531	942	843	1,785	2,259	1,939	4,198	7,368	6,009	13,377	1,174	1,100	2,274	2,708	2,723	5,431
	April	4,741	2,041	6,782	749	338	1,087	1,742	832	2,574	4,067	3,052	7,119	637	537	1,174	1,434	1,427	2,861
_`\	May	3,325	2,967	6,292	547	485	1,032	852	1,124	1,976	2,774	2,549	5,323	447	427	874	570	1,160	1,730
	June	1,452	248	1,700	245	43	288	276	104	380	2,571	2,284	, 4, 8 ₅₅	409	386	795	717	935	1,652
	July	997	75	1,072	166	. 9	175	194	27	221	1,756	1,578	3,334	267	270	537	476	697	1,173
	August	3,036	782	3,818	528	143	671	1,209	315	1,524	7,116	2,294	9,310	1,195	411	1,606	3,408	1,079	4,487
	September	18,627	7,620	26,247	3,310	1,425	4,735	8,889	3,104	11,993	29,068	12,055	41,123	5,042	2,184	7,226	14,398	5,318	19,716
	October	27,355	13,720	41,075	5,098	2,609	7,707	12,431	5,672	18,103	46,244	19,702	66,046	8,398	3,707	12,105	21,600	8,597	30,197
	November	41,387	15,560	.56,947	7,354	3,009	10,363	17,700	6,599	24,299	61,888	27,084	88,972	11,143	5,010	16,153	26,554	11,885	38,439
	December	30,513	12,873	43,386	5,326	2,471	7,797	12,527	5,685	18,212	46,063	19,317	65,380	7,866	3,647	11,513	18,625	8,736	27,361
	Total	162,584	73,334	235,918	28,400	13,683	42,083	67,790	30,712	98,502	244,971	116,068	361,039	42,521	21,366	63,887	105,044	51,719	156,763
	Increase								•••••	•	82,387	42,734	125,121	14,121	7,683	21,804	37,254	21,007	58,261

^{*} Includes Camden Line.

No. 31.

GREAT SOUTHERN AND WESTERN RAILWAY.

Return of the number of Bales of Wool forwarded from the undermentioned Stations, from 1st September, 1882, to 30th April, 1883, and from 1st September, 1882, to 30th April, 1884.

Stations.	1882-1883.	1883-1884.	Stations.	1882-1883.	1883-188
	Bales.	Bales.		Bales.	Bales.
Sydney	9,265	10,521	Warradgery		
Darling Harbour	1,344	3,644	Hay	15 8,312	IC
Burwood	1,344	3,044	Narellan	0,312	5,598
Homebush			Camden	28	17
Rookwood			- Canada		
Luburn	279	l	Total S. and S.W. Line	91,873	113,227
ranville	1,513	1,891		7-7-73	3,7
airfield	-,5-5	7	Parramatta	150	27
abramatta	I		Blacktown	5	l
viverpool	5,688	7,513	Rooty Hill	2	1
ampbelltown	26	73	South Creek		11
Ienangle	8	25	Penrith	13	12
Oouglas Park	28	ī	Emu Plains		
Littagong	17	. 36	Mount Victoria	37	144
Ioss Vale	58	104	Esk Bank	7	i
Badgery's	ĭ5		Bowenfels	. 13	51
Iorrice's		I	Wallerawang	121) j
Iarulan	530	, 849	Rydal	55	3:
Jarrick	•••	29	Sodwalls	•••	30
owrang	32		Tarana	382 .	518
Foulburn	9,152	8,924	Locksley	17	24
arrago		2,166	Brewongle	183	18:
Breadalbane	196	176	Raglan	62	
lanning	1,927	2,292	Kelso	243	300
errawa	23	19	Bathurst	1,380	1,659
7ass	2,412	2,583	Perth	677	703
Bowning	2,865	3,441	George's Plains	64	11
Binalong	2,563	2,682	Wimbledon	57	56
Halong	1		Newbridge	57 ²	720
unningar	479	. 661	Blayney	3,514	3,960
Harden	6,634	8,903	Spring Grove	394	559
Aurrumburrah		127	Spring Hill	20	32
Wallendbeen	806	1,367	Orange	10,744	11,070
Cootamundra	3,903	5,151	Lawrence	• • • • • • • • • • • • • • • • • • • •	2:
Tubba		39	Kerr's Creek	•••••	80
ungegong	36	36	Mullion Creek	2	48
Bethungra	452	507	Warne	219	287
llabo	1,015	1,344	Ironbarks	228	400
unee Junction	620	1,005	Springs	607	32:
Iarefield	500	596	Wellington	2,422	2,87
Bomen	1,304	1,749	Mary Vale	3	164
outh Wagga	3,960	5,142	Murrumbidgerie	151	44
andy Creek	40	45	Dubbo	24,226	11,840
Hanging Rock	1,789	1,937	Narramine	2,319	2,14
Terong Creek	291	531	Trangie	or 887	2,568
Sulcairn	980	205	Nevertire	21,881	6,92
derogery	······	9			47.
Bowns	545	305	Nyngan Piper's Flat		47,65
Old Junee	42 1 665	31	Cullen		······
Coolaman	1,665 2,234	3,793	Benbullen		l .
Devlin's Siding	2,234 858	2,195	Capertee		4,91
Frong Grong	527	1,102	Douglas Siding	3,334	
arrandera	327 4,745	6,099	Richards Siding		44.
anko	960	1,142	Riverstone	25	
Iulong	5,196	6,430	Mulgrave	2 2	100
Parlington	705	2,015	Windsor		
Benerembah	989	691	Richmond	3 6	
Bringagee	460	485		<u>_</u>	<u> </u>
Kooroongal	1,642	1,421	Total Western Line	74,150	102,07
Carrathool	2,194	3,093]		<u> </u>
Uardry	->->-	112	Grand total	166,023	215,30
Beabula		41	1		ı

No. 31—continued.

GREAT NORTHERN RAILWAY.

RETURN of number of Bales of Wool forwarded from undermentioned Stations from 1st September, 1882, to 30th April, 1883, and 1st September, 1883, to 30th April, 1884.

Stations.	1882-1883.	1883-1894.	Stations.	1882-1883.	1883-1884.
·	Bales.	Bales.	•	Bales.	Bales.
Waratah	r		West Tamworth	12,997	9,527
West Maitland	122	190	Ţamworth	*******	<u>1</u> 73
Lochinvar	3	ı	Moonbi	339	754
Greta	5	4	M'Donald River	,	93
Branxton	170	118	Walcha Road	. 2,984	3,325
Singleton	247	277	Kentucky	571	663
Ravensworth	· 253	. 549	Uralla	6,163	5,435
Musclebrook	3,687	4,199	Armidale	1,612	5,687
Aberdeen	63	132	Breeza	618	627
Scone	1,907	2,553	. Curlewis	196	207
Wingen	198	279	Gunnedah	11,021	7,336
Blandford	745	863	Boggabri	6,251	1,471
Murrurundi	157	192	Turrawan		25
Doughboy Hollow	442	444	Narrabri	29,066	37,390
Willow Tree	1,152	2,029	Morpeth	98	175
Quirindi	5,387	7,076 .	Wallsend	9	
Werris Creek	. 230	216			
Currabubula	142	. 147		.86,836	92,157

SUMMARY.

	1882-1883.	1883-1884.
Southern and Western Railway	Bales.	Bales. 215,304
Northern Line	86,836	92,157
Total	252,859	307,461

No. 32.

Statement of the Value of Live Stock and Wool and other Exports and Imports across the Border during the year 1883.

•			Value of	Live Stock.			Qu	antity and Value of	Wool.	Other Exports.	Exports Total Value.	Imports—
,	Goats.	Horses.	Cattle.	Sheep.	Pigs.	Total.	Bales.	lbs.	Value.	Value.	Total Value.	Total Value.
	£	£	£	· £	£	. £	No.		£	£	£	£
Albury to Victoria		10,921	112,731	29,396	277	153,325	14,141	5,732,369	276,834	33,920	464,079	692,375
Corowa do		2,970	11,467	64,126	57	78,620	15,615	5,792,691	303,370	10,635	392,625	118,837
Monma do		4,400	75,633	304,124	202	384,359	27,090	10,539,809	525,453	67,893	977,705	463,550
Hay do							14,013	5,376,000	291,700	1,989	293,689	13,395
Swan Hill (Crossing) do	•••••	620	9,378	47,422		57,420	28,183	10,854,396	550,821	3,112	611,353	15,947
Euston to Victoria	••••••	792	4,704	3,500		8,996	3,094	998,665	65,279 .	49	. 74,324	. 13,170
(Victoria		.		5,312		5,312	2,992	1,029,374	66,228	791	854,883	458,563
Wentworth to South Australia		730	•••	45	<i>:</i>	775	38,075	12,553,970	777,557	4,220	5 054,003	430,303
Tocumwall to Victoria		45	4,136	20,761		24,942	1,827	702,990	36,906	286	62,134	22,673
Howlong do		1,285	3,409	671	133	5,498	20	5,514	189	2,798	8,485	3,765
Stanthorpe to Queensland	•••••	2,000	1,589	3,170	·	6,759	320	115,502	7,745	23,604	38,108	6,456
Boggabilla do						***************************************	687	260,100	16,967	50	17,017	1,669
*Mungindi do	*******					*************	•••••				***************************************	
~Curriwillinghi do	*******	·				•····••	;······				••••	
*Hungerford do									·····			**********
Barringun do	*******		•••••							46,166	46,166	44,898
Tenterfield do.	••••		**********			•••••	431	185,168	8,118	71,770	79,888	- 34,136
Wilcannia do				3			**********		•••••	11,839	11,839	••••••
Total in 1883		23,763	223,047	478,527	669	726,006	146,488	54,146,548	2,927,167	279,122	3,932,295	1,889,434
Total in 1882	4	27,183	262,623	384,811	452	675,073	167,443	59,946,760	3,104,668	255,510	4,035,251	1,722,280
Increase in 1883				93,716	217	50,933				23,612		167,154
Decrease in 1883	4	3,420	39,576				20,955	5,800,212	177,501		102,956	•••••

[·] Stations abolished.

No. 33. CENTRAL RAILWAY OFFICE.

					J.	ear 1883	ng the ye	ved dur	ue rece	ind Rever	nsacted a	iess trai	of Busin	EMENT (Stat										
				Parcels.			nway.					engers.	Pass					arcels.	Pa		<u> </u>	Cattle	les.	rths.	
e of ing- Amount	Value of Sleeping- berths.	Jestern.	hern and W	Sout	thern.	Nor		l ———	Time-table Books · sold.	estern.	thern and W	Sou		Northern.		Total.	Vestern.	ern & W	South	thern.	Nor	Sheep and C Trucks	Horse-boxes.	Sleeping-berths.	Dat
	der uns.	Outwards.	Inwards.	Cloaked.	Outwards,	Inwards.	Amount.	Number of Tickets sold.		Amount.	2nd Class.	1st Class.	Amount.	2nd Class.	1st Class.	Total.	Out.	In.	Cloak.	Out.	In.	Sheer	Hom	Sleep	
3. d. £ s.	£ s. (£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		£s. d.	£ s. d.	No.	No.	£ s. d.	No.	No.										1388
0 0 14,701 3		524 13 6	54 16 9		141 13 9	40 15 1	1,291 14 11	1,426,092	2 17 2	2,235 3 6	354	978	26 13 2	10	13	10,441	7,381	931	567	1,045	517	121	3	. 752	Jan
0 0 13,085 14		469 9 10	67 11 4	580	132 7 4	43 10 11	9,813 6 1	1,278,486	1 10 1	2,147 5 0	323	886	51 15 5	18	16	9,245	6,563	836	401	1,034	411	39	0	707	'eb
0 0 17,324 1	1	517 8 11	67 1 6	8 6 0	137 19 5	47 10 8	2,639 9 3	1,658,633	4 8 0	3,424 4 10	650	1,366	62 2 11	25	30	10,218	7,352	894	424	1,080	468	24	. 0	831	ĭar
0 0 13,884 19	377 10	494 5 3	68 5 1	7 17 10	159 4 9	35 0 9	0,586 14 11	1,400,120	2 17 3	2,083 14 6	424	917	69 9 0	21	24	10,646	7,590	• 916	373	1,360	407	53	. 1	631	pr
2 6 14,200 14	322 2	556 11 0	63 1 1	5 16 0	191 2 4	47 19 7	0,910 18 7	1,465,858	2 12 7	2,061 13 8	377	901	38 16 11	21	13	10,880	7,617	998	472	1,274	519	73	2	556	ау
2 6 13,811 8	335 12	539 19 8	77 1 6	9 1 10	172 19 9	45 15 6	0,298 12 3	1,398,427	1 19 2	2,247 8 6	339	1,069	82 17 10	29	85	10,941	7,625	1,050	420	1,425	421	11	0	583	ın
2 6 13,698 14	375 2	508 19 9	55 17 0	6 12 0	155 3 4	45 18 7	0,263 14 8	1,413,444	3 2 11	2,237 5 3	329	968	46 18 5	21	15	10,673	7,208	1,236	388	1,345	496	87	1	653	ıly
0 0 14,180 7	300 0' (584 10 3	62 0 11	600	180 2 8	44 14 10	0,901 1 0	1,501,487	2 13 5	2,044 6 2	330	1,138	54 18 4	25	12	11,509	7,834	1,417	i	1,441	431	ii	j.	515	ıg
7 6 14,277 9	363 17 (532 13 0	52 2 10	5 2 0	157 14 6		0,470 13 2	1 1	i	2,560 17 8	328	1,095	76 5 7	40	32	10,821	6,981	1,516		1,431	527	135		627	pt
2 6 17,811 6	348 12 (592 6 1	56 18 4	980	180 9 1		1,697 15 11		ł	4,831 13 10	347	1,424	46 3 3	21	16	11,393	7,928	969	539	1,493	464	i 1	1 1	603	et.
0 0 16,274 4	285 0 (606 11 8	62 3 9	7 10 0	181 19 2	ľ	1,329 12 1	1		3,706 16 10	387	1,307	50 2 2	25	12	11,541	8,115	968	478	1,538	442	85		485	ov.
2 6 19,181 5	353 12 6	619 9 2	75 15 1	900	194 1 0	60 6 2	2,721 8 9	1,764,300	1 14 7	4,979 10 3	662	2,135	116 8 2	66	94	12,060	8,273	1,139	512	1,657	479	112	8	606	ec.
10 0 182,431	4,206 10	6,546 18 1	762 15 2	86 17 4	1,984 17 1	551 12 4	32,925 1 7	17,962,418	34 6 6	34,560 0 0	4,850	14,184	772 11 2	322	362	130,368	90,467	12,870	5,326	16,123	5,582	1,046	31	-7,549	, .
			1				<u>.</u>	<u>'</u>		,				<u>, , , , , , , , , , , , , , , , , , , </u>									· ·		_
		~		1000					•	MMARY		1882	1	1883											
		•	1882	1883. 20.260			ed	raole bool	hor of Da	Num	». s. d.		s. d.	_			٠.								
			138,	30,368						I Trum					nent	Departr	ilway 1	c., Rai	ght, &	Frei					
		579	16,	19,718		•••••	oked	ssengers b	, Pa	,						-	•	-	- <i>-</i>						
		132	8,854,	62,418	17,90		kets sold .	mway Ti	, Tr	,					_										
		579	16,	19,718		•••••	oked kets sold .	ssengers b	, Pa	,		41,338 73,784		49,506 1 32,92 5		Departs kets	•	-	- <i>-</i>						

					i.	UMMARY.	
	188	3.		1882.	٠.	1883. 1882.	
	£	s.	d.	£	s. d.	Number of Parcels booked	
Freight, &c., Railway Department	49,506	-	-	41,338 1		,, Passengers booked 19,718 16,579	
Value of Tramway Tickets	132,925	1		73,784	8 4	" Tramway Tickets sold	
	£182,431	9	3	115,123	7 5	Sheep and Cattle Trucks ordered	
						Horse-boxes ordered 31 46	
Increase for the year	£67	7,308	3 1s.	10d.		Sleeping-berths ordered	

No. 34.

RETURN of the quantity of COAL exported from Newcastle to Intercolonial and Foreign Ports in 1882 and 1883, showing the increase and decrease in each.

Countries.	1882.	1883.	Increase.	Decrease.
	Tons.	Tons.	Tons.	Tons.
Victoria	403,510	480;918	77,408	••••••
New Zealand	142,582	151,136	8,554	••••••
South Australia	134,099	126,955	•••••••	7,144
Tasmania	29,280	28,533		647
Western Australia	4,384	5,459	1,075	
Fiji	6,725	11,160	4,335	
Queensland	18,747	44,219	25,472	••••••
Total, Intercolonial	739,327	848,380	116,844	7,791
Foreign—				•
United Kingdom		630	630	**********
Tahiti	1,175	1,276	101	
Callao	1,035	1,867	832	
New Caledonia	4,106	9,526	5,932	
India	36,153	64,055	27,920	
United States	3,004	, 30,423	27,419	
San Francisco	100,769	114,394	13,625	
Hong Kong	57,996	100,510	52,514	
China	9,631	8,910	•••••	721
Mauritius	19,688	4,324		15,364
Japan	16,414	4,785		11,629
Manila	21,030	34,037	13,007	
Valparaiso	18,557	39,859	21,302	·······
Honolulu	12,038	7,398		4,640
Java	31,107	64,229	33,122	
Рапата		4,187	4,187	
Africa		370	. 370	······
Bankok		2,303	2,303	'
Guam	3,265	1,609		1,656
Mahucona		539	539	<u>'</u>
Iquique	1,595	6,685	5,090	
Mexico	1,724	6,889	5,165	
San Diego	788	1,190	402	
Diego Garcio		_ 1,130	1,130	
Total, Foreign	341,119	511,125	215,060	34,010
Grand Total	1,080,446	1,359,505	331,904	41,801

No. 34-continued.

PORT OF NEWCASTLE.

Foreign and Intercolonial Trade.

	188	32.	18	83.	Increase.			
_	No. of Vessels.	Tonnage.	No., of Vessels.	Tonnage.	No. of Vessels.	Tonnage.		
					, .			
Inwards	• 1	559,228	945	656,906	106	97,678		
Outwards	1,143	737,772	1,305	926,956	162	189,184		
;								

NUMBER of Tons and Value of COAL Exported.

Foreign and Intercolonial.

	382.	1	383.	Increase.	Increase.
Tons.	Value.	Tons.	Value.	Tons.	Value.
	£		£		£
1,080,446	527,575	1,359,505	722,428	279,059	194,853

Coastwise.

. ,	3t	183.	18	82.
	No. of Vessels.	Tons.	No. of Vessels.	Tons.
Outwards	1,205	346,272	1,170	289,779

No. 35.
GREAT NORTHERN RAILWAY.

MONTHLY RETURN OF COAL hauled for the year 1883.

:	Newcastle Co's. Colliery.	New Lambton Colliery.	Lambton Colliery.	Ferndale Colliery.	Co-operative Colliery.	Wallsend Tunnels.	Purified Coke Co.*	Minmi Colliery.	Woodford Colliery.
`			T. c. q. £ s. d.	T. c. q. £ s. d.	T. c. q. £ s. d.	T. c. q: £ s. d.	T. c. q. £ s. d.	T. c. q. £ s. d.	T. c. q. £ s. d.
1883.	T. c. q. £ s. d.	T. c. q. £ s. d. 5554 14 2 231 8 11	T. c. q. £ s. d. 21267 9 0 886 2 9	4229 13 1 176 4 9	18786 15 2 1122 14 4	37259 7 0 1552 9 6	327 15 2 13 13 2	10655 13 1 532 15 8	1371 4 1 87 5 3
January	9422 5 0 399 1 10		21235 4 3 884 15 11	3525 10 2 146 18 0	18744 11 3 1085 9 8	33640 6 3 1401 11 11	285 8 2 11 17 10	10019 3 3 500 18 10	1146 1 2 72 14 4
February	9665 9 2 401 15 5	0022 20 2	19469 16 0 811 4 8	3131 5 2 134 17 11	14713 4 3 862 19 3	35134 7 3 1463 18 7	372 1 3 15 10 1	10333 0 0 516 12 11	816 16 2 51 5 2
March	9754 9 1 405 10 11		19513 5 0 813 0 11	5320 13 3 221 13 10	15043 10 0 987 17 4	32340 17 1 1347 10 6	396 13 2 16 10 7	9421 15 1 471 1 9	1191 17 1 74 9 9
April	11279 8 0 469 1 11		19280 13 2 803 7 2	5298 14 1 222 18 6	19257 19 2 1307 16 9	41015 19 2 1708 14 11	329 12 3 13 14 8	11284 16 0 564 4 9	1106 9 1 69 3 0
May	12234 18 3 512 15 7		22868 11 0 952 17 0	5177 4 0 216 17 4	20149 8 1 1375 16 10	42215 2 0 1756 7 7	354 1 1 14 15 0	9297 12 3 464 17 8	1646 13 3 104 4 4
June	13486 18 2 559 12 11	1000	20989 6 0 874 11 1	5004 14 2 208 10 6	19423 8 3 1316 18 5	39150 17 0 1628 11 10	368 9 2 15 7 0	11541 15 3 577 1 10	1159 5 1 72 9 0
July	12371 10 3 518 2 7		23404 1 2 975 3 4	4849 0 0 202 0 10	24461 7 1 1451 2 1	41132 17 2 1710 7 3	385 0 3 16 0 10	9546 19 3 477 6 11	1446 0 1 100 6 2
August	14471 14 2 594 2 1		21565 1 3 898 10 10	4896 5 1 204 0 3	20163 0 1 1192 17 6	35278 1 3 1466 13 4	339 5 3 14 2 8	5844 7 2 292 4 4	1524 18 0 93 1 8
September	12961 12 2 534 0 11		24943 4 1 1039 5 11	5027 12 1 213 10 0	21220 12 1 1244 3 8	40140 18 1 1668 10 9	626 7 3 26 1 11	5934 1 2 296 14 1	1405 18 2 91 14 3
October	15984 0 2 660 2 0		21848 0 0 910 6 7	5384 5 3 224 6 10	16603 9 0 915 14 5	37614 8 0 1564 10 4	193 3 1 7 12 7	9401 7 1 470 0 5	997 8 1 61 17 7
November	14843 1 3 616 1 6	6492 14 3 248 14 10		3348 12 3 139 10 6	15209 3 1 810 18 10	28969 16 3 1206 9 9	497 8 3 20 14 6	12698 1 2 634 18 1	166 4 2 10 8 7
December	9097 19 1 377 6 0	4570 6 2 173 12 7	19418 11 2 809 2 1	5040 15 6 100 10 6					
Total	145573 8 1 6047 13 8	64903 14 3 2557 3 11	255803 4 1 10658 8 3	55193 11 3 2311 9 3	223776 10 2 13674 9 1	443892 19 2 18475 16 3	4465 9 0 186 0 10	115978 14 1 5798 17 3	13978 17 1 888 19 1
•	Greta Colliery.	Goose Colliery. Rix	's Creek Colliery. War	atah Colliery. A	. A. Co. Speedwell Coll	liery. Brickfield Colliery.	Sneddon's Tighe's Hill Colliery.	Sneddon's Wallsend Colliery.	Total.
			1 - 1 -		.q. £ s. d T. c. q. £	s. d. T. c. q. £ s. d.	T. c. q. £ s. d.	T. c. q. £ s. d.	T. c. q £ s. d.
	T. c. q. £ s. d.	T. c. q. £ s. d. T.		- I I		978 1 3 40 15 1	718 5 2 29 18 6	1 - 1	16379 6 2 5524 8 6
January	4389 2 2 394 11 9	42 0 0 1 15 0 11	l I		.	707 18 9 99 4 11	303 8 1 12 12 10		09486 11 2 5125 13 2
February	3414 4 2 311 2 10		8 0 4 0 9 633			H17 4 0 80 17 7	290 6 1 12 1 10	1	06048 7 0 5025 16 5
March	4219 3 3 390 18 7	" " "	3 19 0 10 14 6 2343			624 17 2 32 18 0		54 14 1 2 14 9 1	08726 12 1 5219 11 6
April	4880 13 2 441 0 7		3391			00 9 9 9 11 10		l 1	23445 3 2 5895 5 5
May	2559 7 0 245 11 4	"	1 13 0 12 8 3 4393			683 2 3 28 9 3		1 1	31063 0 3 6326 13 5
June	4886 4 3 443 4 8	• -	3 17 0 2 7 0 4263			500 17 0 84 10 6		341 5 1 17 1 4 1	27794 6 3 6227 18 4
July	5981 1 0 533,13 1		0 10 0 1 5 9 5216	l i		8 7		1 1	37812 14 2 6564 9 2
August	5827 7 1 528 14 3		5 17 0 3 18 4 5688	* = =	170 0 0 7	9 2		292 10 2 14 12 7 1	17444 10 3 5555 1 10
September	5058 12 3 469 18 10		3810 1	i I	100 10 0 4	3 11	618 10 1 30 18 6	i I I	29126 15 1 6041 12 9
October	4987 9 2 451 5 5	36 0 0 1 10 0 11	1 4 0 1 4 4 3773	1 1	·	17 9	010 10 1 00 10 0	i I Y	20908 7 2 5578 13 11
November	4670 18 1 435 0 0	1	1769 1	1 1	405 7 7 80				00519 14 2 4639 8 8
December	3732 9 0 331 0 5	30 0 0 1 5 0 5	5 9 0 0 19 1 1379	0 0 57 9 2	495 1 1 20				
Total	54606 13 3 4976 1 9	522 0 0 21 14 2 105	5 2 2 44 14 0 38026	12 3 1480 5 11 313 7	1 83 11 9 1430 12 1 59	12 0 4476 5 1 193 7	4 2916 7 0 126 16 4	2792 0 2 139 12 3 1	28755 10 3 67724 13 1

→ Output of Wallsend Tunnel.

No. 36.

Monthly Return of Coal forwarded from Western Collieries during the year 1883.

	Months.	North's	Siding.	Hartle	y Vale.	Zig	Zag.	Vale of	Clwydd.	Esk I	Bank.	Lithgow Vall	ey Company.	Bowenfels	Company.	Iron	dale.	Tot	al.
1188		Т. с. q.	£ s. d.	т. с. q.	£ s. d.	T. c. q.	£ s. d.	Т. с. q.	£s.d.	T. c. q.	£ s. d.	T. c. q.	£ s. d.	T. c. q.	£ s. d.	T. c. q.	£ s. d.	T. c. q.	£ s. d.
8-22	January	· ••••••		• • • • • • • • • • • • • • • • • • • •				2,972 10 0	1,064 10 3	2,730 12 0	1,006 7 5	2,761 19 0	953 11 3	224 7 0	71 18 10			8,689 8 0	3,096 7.9
₽	February	•••••		-				1,963 1 0	697 5 0	2,330 7 0	921 15 3	2,590 5 0	893 9 5	282 10 0	90 15 4	•••••	*****	7,166 3 0	2,603 5 0
	March	140 12 1	39 7 8					3,183 11 0	1,134 9 10	2,991 11 0	1,337 14 10	2,539 7 0	924 5 10	276 13 0	121 10 9	204 6 3	84 18 9	9,336 1 0	3,642 7 8
	April	400 16 0	109 5 4					3, 2 16 11 0	1,196 12 2	2,985 7 0	1,179 17 6	3,369 16 0	1,252 8 2	216 12 0	65 18 6	124 10 2	39 12 1	10,313 12 2	3,843 13 .9
i	May	178 6 0	49 13 9					3,853 7 0	1,446 18 7	2,638 10 0	985 12 5	3,082 8 0	1,096 7 3	255 0 0	82 8 9	153 4 2	51 3 4	10,160 15 2	3,712 4 1
	June	242 19 2	67 12 2	<i></i>				4,457 11 2	1,594 7 11	2,980 3 0	1,094 0 2	3,119 10 0	1,095 15 4	336 4 0	98 0 11	197 4 0	83 0 0	11,333 12 0	4,032 16 6
;	July	310 5 0	85 14 10					4,393 19 0	1,607 17 6	2,519 4 0	953 15 8	3,626 12 2	1,351 8 11	315 13 0	92 5 7	208 0 3	87 0 1	11,373 14 1	4,178 2 7
	August	997 13 2	269 6 11	12 5 0	4 3 9			4,274 6 0	1,587 8 0	2,348 5 0	917 16 10	3,339 3 0	1,245 14 3	248 16 0	88 14 1	178 5 0	28 2 9	11,398 13 2	4,141 6 7
,	September	846 13 3	224 15 8	5 10 0	1 17 5			3,320 2 0	1,207 9 4	2,122 9 0	830 19 9	2,559 16 0	948 10 11	181 9 0	62 14 9	224 10 1	64 7 4	9,260 10 0	3,340 15 2
	October	528 0 0	141 19 2	212 8 0	78 19 7		;	4,155 0 0	1,526 13 10	2,419 9 0	974 7 7	2,790 19 1	1,047 17 9	244 5 0	81 2 2	339 16 1	90 9 6	10,689 17 2	3,941 9 7
	November	685 8 2	181 11 4	120 2 0	41 0 6			3,984 16 0	1,445 6 2	2,514 10 0	965 14 8	2,321 9 0	912 18 11	169 5 0	52 8 4	451 17 0	152 5 0	10,247 7 2	3,751 4 11
	December	317 6 0	86 0 8	109 17 2	37 13 0	508 14 0	192 8 4	2,727 7 0	1,024 19 0	1,898 10 0	706 2 7	2,137 4 0	891 6 4	143 19 0	36 9 1	388 1 1	126 5 7	8,230 18 3	3,101 4 7
						·													
	Total	4,648 0 2	1,255 7 6	460 2 2	163 14 3	508 14 0	192 8 4,	42,502 1 2	15,533 17 7	30,478 17 0	11,874 4 8	34,228 8 3,	12,613 14 4	2,894 13 0	944 7 1	2,469 16 1	807 4 5	118,200 13 2	43,384 18 2
-														ا .					

No. 37.

Monthly Return of Shale carried on the Great Southern and Western Lines during the year 1883.

Months.	Joadja Sid	ing.	· Hartley V	Vale.	Total			
	Tons cwt. qrs.	£ s. d.	Tons cwt.qrs.	£ s. d.	Tons cwt.qrs.	£ s. d.		
January	1,686 0 0	553 7 6	2,022 18 0	693 14 5	3,708 18 0	1,247 1 11		
February	1,314 0 0	437 4 10	2,076 19 0	710 18 7	3,390 19 0	1,148 3 5		
March	2,562 0 0	842 2 6	2,175 2 2	751 2 3	4,737 2 2	1,593 4 9		
April	1,398 18 2	456 10 11	1,705 18 0	593 7 4	3,104 16 2	1,049 18 3		
Мау	1,283 11 0	425 4 7	774 0 0	265 13 8	2,057 ii o	690, 18 3		
June	1,134 0 0	369 13 6	699 13 3	. 241 19 5	1,833 13 3	611 12 11		
July	1,686 0 0	553 1 0	461 3 O	167 6 0	2,147 3 0	720 7 0		
August	556 0 0	190 14 4	409 7 0	. 139 2 11	965 7 0	329 17 3		
September	371 17 - 0	126 10 3	789 19 0	272 5 8	1,161 16 0	398 15 11		
October	318 0 0	106 12 3	1,109 10 0	383 7 3	1,427 10 0	489 19 6		
November	1,769 17 0	585 15 9	175 8 0	62 1 9	1,945 5 0	647 17 6		
December	1,776 0 0.	582 17 6	1,087 11 2	371 16 11	2,863 11 2	954 14 5		
Total	15,856 3 2	5,229 14 11	13,487 9 3	4,652 16 2	29,343 13 1	9,882 11 1		

No. 38.

Return of O.H.M.S. Coal forwarded from the Western Collieries during the year 1883.

Months.	North's	Siding.	Vale of	Clwydd.	Esk	bank.	Lit	ngow.	Bowenfels Siding	g.	Iron	dale.	То	tal.
,	Tons owt. qrs.	£ s. d.	Tonscwt. qrs.	.£ s. d.	Tons cwt. qrs.	£ s. d.	Tons cwt. qrs	. £ s. d.	Tonscwt.qrs. £	s. d. T	Cons cwt. qrs.	£ s. d.	Tons cwt. qrs.	£ s. d.
January			2,554 5 0	1,292 15 2	2,357 6 0	876 16 5	2,463 7 0	660 9 7			•••••		7,374 18 0	2,830 I 2
February	•••••	•••••	1,905 9 0	911 10 9	1,721 14 2	599 6 9	1,012 5 0	660 19 5			<i>i</i>	·····	4,639 8 2	2,171 16 11
March	924 4 3	² 55 4 5	2,435 18 0	1,159 14 8	2,358 18 o	1,036, 12 3	2,063 1 0	891 17 1			29 18 1	23 3 9	7,812 0 0	3,366 12 2
April	1,526 4 0	, 405 6 I	2,219 6 0	1,363 17 7	2,199 6 0	694 7 9	2,346 15 0	1,185 6 8			590 0 0	251 19 7	8,881 11 0	3,900 17 8
May	2,096 13 0	595 I 4	1,773 17 0	675 19 1	2,038 3 0	946 18 1	2,217 18 0	965 14 4			382 0 2	203 11 2	8,508 11 2	3,3 ⁸ 7 4 0
June	2,011 19 3	709 10 1	1,622 11 0	917 16 8	2,461 14 0	1,334 14 10	2,205 6 2	894` 9 3			565 15 o	159 15 0	8,867 6 1	4,016 5 10
July	2,465 16 1	842 1 6	1,778 13 0	743 ^I 3	1,968 13 о	758 1 10	1,936 19 0	776 11 0	74 6 0 30	o 8	457 12 0	144 18 5	8,681 19 1	3,294 14 8
August	1,146 19 3	326 3 0	1,896 7 o	746 15 7	2,361 11 3	1,151 15 8	2,216 7 2	873 3 7			765 19 o	242 17 1	8,387 5 0	3,340 14 11
September	1,852 2 0	525 3 2	2,596 16 0	1,208 3 2	2,419 19 1	1,136 2 10	2,655 9 0	1,249 6 6			625 11 0	201 3 10	10,149 17 1	4,319 19 6
October	2,533 11 0	940 0 1	3,404 10 0	1,442 6 5	3,594 18 0	1,797 10 0	3,612 8 0	1,984 3 5			269 7 2	227 1 8	13,414 14 2	6,391 1 7
November	1,777 13 0	503 16 9	2,858 16 o	1,686 6 I	2,823 5 0	1,316 14 2	2,764 4 1	1,217 1 1			128 18 o	125 11 3	10,352 16 1	4,849 9 4
December	1,300 11 0	577 3 ^I	2,365 0 0	953 14 6	2,802 3 2	1,075 0 2	2,793 8 3	1,922 10 8			167 13 0	119 14 6	9,428 16 1	4,648 2 11
Total	17,635 14 2	5,679 9 6	27,411 8 0	13,102 0 11	29,107 12 0	12,724 0 9	28,287 9 0	13,281 12 7	74 6 0 30	o 8 3,	982 14 1	1,699 16 3	106,499 3 3	46,517 o 8

No. 39.

GREAT NORTHERN RAILWAY.

ABSTRACT of the Tonnage and Amount received for carriage of COAL shipped at the Government Cranes and Staiths, Newcastle, during 1882 and 1883.

Companies.	188	2.	188	33,	lncreas	e, 1883	Decreas	е, 1883.
Companies.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.
i	<u>'</u>	£	* 1	£	· i	£	1	£
Newcastle	154,564	6,428	145,573	6,048	• • • • • • • • • • • • • • • • • • • •		8,991	38o
A. A. Company	2,405	105	313	84			2,092	21
Lambton	238,518	9,942	255,803	10,658	17,285	716		
New Lambton	72,077	. 2,624	64,904	2,557			7,173	67
Ferndale	45,820	2,000	55,194	2,311	9,374	311		•••••
Co-operative	200,202	11,938	223,777	13,674	23,575	1,736		• • • • • • • • • • • • • • • • • • • •
Wallsend Tunnels	407,823	17,663	443,893	18,476	36,070	813		
Wallsend Pit	335	, 8					335	8
Purified Coke	2,893	. 121	4,465	186	1,572	65		
Minmi	115,602	5,781	115,979	5,799	377	18		••••••
Woodford	12,979	814	13,979	889	1,000	75		
Greta	44,843	4,118	54,607	4,976	9,764	858		• • • • • • • • • • • • • • • • • • • •
Groose	397	18	522	22	125	4		
Rix Creek	118	57	105	45			. 13	12
Waratah	9,930	418	38,027	1,480	- 28,097	1,062		
Sneddon's (Tighe's Hill)	5,991	222	2,916	127			3,078	95
Brickfield		1,048	4,476	193			8,084	855
Speedwell		•••••	1,431	60	1,431	60		
Sneddon's (Wallsend Co.)			2,792	140	2,792	140	••••	
Total	1,327,060	63,305	1,428,756	67,725	131,462	5,858	29,766	1,438
Local consumption	56,132	2,493	53,683	2,648		155	2,449	•••••

No. 40.

Abstract of the Tonnage and amount received for the carriage of Coal and Shale on the Great Southern and Western Railways in 1882 and 1883.

	188	2.	188	3.	Increase	e, 1883.	Decreas	е, 1883.
	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.	Tons.	"Freight.
	i	£	— <u>'</u>	£	`	£		 £
North's Siding			4,648	1,255	4,648	1,255	•••••	
Hartley Vale	23,120	7,761	13,947	4,817		.,	9,173	- 2,944
Zig Zag			509	192	509	192		
Lithgow Valley—	1	İ		- 1	,			
Lithgow	27,819	10,062	34,238	12,614	6,419	2,552		
Esk Bank	31,259	13,192	30,479	11,874			7S0	1,318
Bowenfels Company	9,576	3,444	2,895	944			6,681	2,500
Vale of Clwydd	32,025	11,436	42,502	15,534	10,477	4,098		
Wallerawang	5	1					5	1
Irondale			2,470	807	2,470	807		
Mittagong	210	97					210	97
Joadja Siding	23,398	7,715	20,131	6,671			3,267	1,044
Austermere	4,468	2,099	3,765	1,175		•••	703	924
Baker's Siding	825	117	1,336	197	511	80		·
Total	152,705	55,924	156,920	56,080	25,034	8,984	20,819	8,828

No. 41.

Abstract of the total quantity of COAL and Shale carried on Great Southern, Western, and Northern Railways during 1882 and 1883, and the amounts of Freight received therefrom.

	188	32.	1881	33.	Increas	e, 1883.	Decreas	e, 1883.
	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.	Tons.	Freight.
COAL,	ĺ	£		£		£	i	£
Newcastle Lines	1,327,061	63,305	1,428,755	67,725	101,694	4,420		
North's Siding		******	4,648	1,255	4,648	1,255		•••••
Hartley Vale		••••	460	164	460	164		• • • • • • • • • • • • • • • • • • • •
Lithgow Valley Mines	100,679	38,134	110,623	41,158	9,844	3,024		• • • • • • • • • • • • • • • • • • • •
Wallerawang	. 5	1	••••				5	I
Irondale	•••••	• • • • • • • • • •	2,470	807	2,470	807	••••	• • • • • • • •
Great Southern Railway-								
Mittagong	192	92					192	92
Joadja	3,746	1,185	4,275	1,441	529	256	•••••	•••••
Austermere	4,468	2,099	3,765	1,175			703	9 ² 4
Baker's Siding SHALE.	825	117	1,336	197	. 511	80	•••••	•••••
	Ì						1	
Great Western Railway— Hartley Vale							_	_
Great Southern Railway-	23,120	7,761	13,487	4,653	· ·····		. 9,633	3,108
	18	_				l		
Mittagong		. 5		•••••			18	5
Joadja	19,652	6,530	15,856	5,230	******	;	3,796	1,300
Total	1,479,766	119,229	1,585,675	123,805	120,156	10,006	14,347	5,430

No. 42.*

Return of the number and percentage proportion of First and Second Class Passengers on the Great Southern, Western, and Richmond, and Northern Lines, and the amount received from that source during 1883.

	· First Class.	Second Class.	Total.
Number— South and West— Passengers	No. 1,706,756	No. 4,275,487	No. 5,982,243
Season Tickets	1,512,582	928,514	2,441,096
Workmen's Tickets		1,090,392	1,090,392
Northern Passengers	134,427	543,35 ¹	677,778
Season Tickets	47,588	61,536	109,124
All Lines	3,401,353	6,899,280	10,300,633
Amount received— South and West— Passengers	£ 202,273	£ 239,849	£ .
Season Tickets	15,279	6,272	21,551
Workmen's Tickets		7,382	7,382
Northern— Passengers	33,176	61,708	94,884
Season Tickets	675	445	1,120
All Lines	. 251,403	315,656	567,059
Percentage number— South and West		No. 66·16 76·87	No. 100'00
All Lines	33.02	66.98	100.00
Percentage amount received— South and West Northern	·	£ 53 [.] 82 64 [.] 74	100.00 %
All Lines		55.67	100.00

^{*} Includes Camden traffic.

No. 43.

Return of the Mileage of Suburban Passengers during the years 1882 and 1883.

Description.		1882.	1883.
No. of Passengers, Workmen's journeys	No.	3,943,581 972,360	4,616,438
" Season Ticket-holders' journeys	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	2,250,536	2,333,284
Total Passenger journeys		7,166,477	8,040,114
No. of miles travelled	Miles.	34,987,807.	40,241,902
Average mileage per passenger	15	4 [.] 88	2.01
Amount received for passengers	£	93,311 2 7	94,458 11 0
Average receipts per mile per passenger	d.	0:64	0.26

APPENDIX TO REPORT ON RAILWAYS-1:

No. 44.

Return of the Number of Tickets issued, and amount received for same, from Suburban Stations to Suburban Stations, during the year 1883.

	;				Down	l.											Up.	,			
		Number	r issued.		Total			Amount.		•		Numbe	r issued.		Total			Amount.			Total
Stations.	Sing	gle.	Ret	urn.	number issued— Down.	S	ngle.	Ret	urn.	Total.	Sin	gle.	Ret	urn.	number issued— Up.	Sin	gle.	Re	turn.	Total.	number of Passengers- Down and
	1	2	1	2		1	2	1	2		1	2	1	2	Op.	1	2	1	2		Up.
						£ s. d	£ s. d.	£ s. d.	£ s. d.	£ s. d.						£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	
Sydney	153,958	390,365	152,591	309,531	1006445	3,043 1 5	5,337 16 0	7,118 19 6	9,941 13 7	25,441 10 6			••••			•••••					1,006,445
Eveleigh	4,302	36,658	1,163	9,535	51,658	51 5 7	294 1 1	27 17 2	167 15 5	540 19 3	293	3,344	14	13	3,664	2 8 6	13 18 8	0 3 5	0 2 2	16 12 9	55,322
M Donald Town	2,793	9,119	. 644	2,204	14,760	50 8 1	113 8 0	21 13 6	53 15 10	239 5 5	10,304	50,547	5,609	26,692	93,152	126 7 8	368 11 1	112 13 0	359 17 3	967 9 0	107,912
Newtown	26,388	104,035	6,661	20,659	157,743	390 0 10	982 4 5	224 6 8	529 1 9	2,125 13 8	29,057	69,976	15,881	45,195	160,109	357 7 10	538 10 10	305 5 11	609 4 6	1,810 9 1	317,852
Stanmore	5,365	4,984	2,204	849	13,402	82 18 5	45 11 0	67 18 5	16 6 0	212 13 10	14,140	17,470	27,458	13,637	72,705	159 9 3	119 7 0	550 11 6	196 5 0	1,025 12 9	86,107
Petersham	14,963	35,758	4,498	7,996	63,215	255 19 3	421 6 0	169 4 10	200 12 1	1,047 2 2	47,428	154,239	94,257	155,947	451,871	522 7 8	1,002 5 11	1,882 13 8	2,226 3 9	5,633 11 0	515,086
Summer Hill	4,093	13,586	1,416	2,766	21,861	68 6 3	151 15 6	46 7 6	61 1 7	327 10 10	15,589	42,903	25,349	43,998	127,839	199 4 8	383 16 2		1	2,161 0 3	149,700
Ashfield	8,370	15,107	2,730	3,077	29,284	136 10 1	163 13 2	83 13 6	69 15 2	453 11 11	25,655	51,068	36,595		167,914	445 12 11					197,198
	,	,	,	,				-) ·		′		,	'			579 6 8	,,	1,340 18 11	ļ	
Croydon	4,219	12,321	1,578	2,087	20,205	55 16 8		37 9 1	39 15 4	228 0 3	11,256	29,441	11,655	28,929	,	220 15 5	355 5 0	530 12 7	772 15 4	1,879 8 4	101,486
Bûrwood	5,328	19,218	1,621	3,245	29,412	82 10 8	169 3 11	54 14 1	77 1 1	383 9 9	26,070	62,206	35,586	73,395	197,257	529 15 6	764 8 3	1,703 1 9	1,993 3 10	4,990 9 4	226,669
Redmyre	1,097	3,148	390	649	5,284	20 18 2	35 7 2	13 9 7	13 13 9	83 8 8	8,091	10,748	8,581	8,461	35,881	163 12 0	142 5 8	441 6 11	271 9 11	1,018 14 6	41,165
Homebush	497	4,093	164	608	5,360	12 5 8	55 4 7	6 15 0	13 8 1	87 13 4	5,737	21,837	3,259	8,247	39,080	113 10 0	256 18 0	175 0 8	243 5 1	788 13 9	44,440
Rookwood	768	8,931	178	3,258	13,135	11 11 2	94 13 5	4 2 2	50 4 0	160 10 9	2,558	21,600	966	18,540	43,664	70 2 5	. 380 16 6	66 10 7	665 5 2	1,182 14 8	56,799
Auburn	683	4,313	244	1,479	6,719	8 10 8	35 18 6	4 1 2	18 9 6	66 19 10	711	5,491	454	3,777	10,433	27 9 0	130 0 2	37 16 2	162 10 8	357 16 0	17,152
Granville	2,831	27,618	. · 815	1,935	33,199	23 11 8	115 1 6	10 2 8	16 2 4	164 18 2	3,110	25,060	1,952	18,330	48,452	138 9 2	627 11 0	164 14 11	862 3 7	1,792 18 8	81,651
Parramatta											27,510	105,252	24,342	57,931	215,035	1,280 16 2	2,234 16 9	2,297 2 2	3,170 17 11	8,983 13 0	215,035
Total	235,655	689,254	176,897	369,876	1471682	4,293 14 2	8,110 3 10	7,890 14 10	11268 15 6	31,563 8 4	227,509	671,182	291,958	557,688	1748337	4,357 8 2	7,897 17 8	10426 8 9	13734 1 11	36415 16 6	3,220,019
Return Tickets—Return																·					
Journey			291,958	557,688	849,646								176,897	369,876	546,773						1,396,419
· Total			468,855	927,564	2321328								468,855	927,564	2295110						4,616,438

No. 44—continued.

Return of the number of Season Tickets issued, and Amounts received for same, by each Suburban Station during the year 1883.

Stations.	Mon	thly.	Quar	terly.	Half-y	early.	Yes	arly.	То	tal.	\	Amo	unts.		
Statuons.	· I.	2	ı.	2.	ī.	2.	ī.	2.	I.	2.	ıst	Class.	2nd	Clas	9.
1883. Sydney	49 ¹ 93 73	 24 1,020 106 1,074 320 517 173 270 68 14 63 24	15 9 209 139 547 133 335 144 238 105 44 22 44	4 274 26 443 221 233 129 133 55 11 82 14 80	 1 101 . 75 371 118 295 89 218 108 49 14 4	 1 53 16 171 67 114 35 79 15 4 12 1	1 9 13 78 22 110 37 74 47 22 1 1	:: 5 :: 24 3 22 4 12 3 2 :: : : I	63 22 63 39 1,674 652 1,193 397 5,453 1,646 1,545 447 4,568 1,213 1,609 469 3,401 1,620 353 763 185 49 206 87 130	42 29 2,220 1,352 280 3,717 1,712 1,421 611 2,164 886 818 341 1,287 494 359 141 95 31 157 72 39 332 131	} 27 642 } 523 } 2,245 } 758 } 2,335 } 1,087 538	14 3 7 5 2 2 10 1 17 4 7 15 0 11 4 1 6 4 9	14 499 81 1,028 552 875 370 724 202 49 188	2 3 13 3 7 2 1 11 13 14 7	6 7 6 8 2 4 6 3 0 1 4
Parramatta	166	260	140	114	61	-39	27	4 {	1,276 394	884 417	1,221	19 10	745	13	9
Total	2,913	3,977	2,151	1,819	1,509	613	444	8o {	23.748* 7,017	14,072 6;489	} 13,55	5977	5,537	9	3

*All tickets brought into months.

No. 44-continued.

Return of the number of Workmen's Weekly Tickets issued, and Amounts received for same, by each Suburban Station during the year 1883.

	Weekly Tickets issued. 2nd Class.	Amounts.
Sydney Eveleigh Macdonald Town Newtown Stanmore Petersham Summer Hill Ashfield Croydon Burwood Redmyre	20,082 5,875 13,989 17,654 2,018 12,556 3,216 3,006 2,053 3,371 420	£ 8. d. 2,007 2 10 659 14 2 606 15 9 1,055 9 10 137 4 4 972 5 8 276 5 0 273 10 3 191 4 10 323 19 11 46 19 0
Homebush Rookwood Auburn Granville Parramatta	346 1,274 242 1,924 2,840	34 4 0 148 11 9 33 8 7 282 7 8 333 5 9
·	90,866	7,382 9 4

No. 45.

Detailed Statement of Mileage of Engines, for the twelve months ending 31st December, 1883

Train Mileage.	Suburban.	Southern.	Western.	Richmond.	Northern.	Total.
Passenger	373,769	776,239	512,607	24,161	35 ⁸ ,375	2,045,151
" Special	7,795	26,969	17,824	1,874	15,659	70,121
Funeral	12,363	•••••	••••••	32	2,583	14,978
Goods	13,721	1,071,457	1,676,550	32,988	587,962	3,382,678
" Special	5,836	139,945	92,585	427	50,309	289,102
Coal		······			135,231	135,231
· Total Train Mileage	413,484	2,014,610	2,299,566	59,482	1,150,119	5,937,261
Increase of Train Mileage for 1883	38,829	286,811	,540,922	5,954	213,618	1,086,134
OTHER MILEAGE.		06				1,110,849
Shunting	53,089	375,867	252,522	. 13,360	. 416,011	•
Coal	102	17,102	203		37,484	17,407
Ballasting	12,779	63,876 8,881	54,547	1,557 482	21,665	170,243
Empty	2,709 5	24,722	2,237 5,277	402	6,328	35,974 36,332
Total other Mileage	68,684	490,448	314,786	15,399	481,488	1,370,80
Grand Total	482,168	2,505,058	2,614,352	74,881	1,631,607	7,308,060
Increase, Train & other Mileage for, 1883	56,073	318,789	600,112	ı	254,177	1,229,152

No. 46.

Statement of Mileage, Passenger and Goods Trains, for the years 1882 and 1883.

Lines and Trains—Train miles.	1882.	1883.
Great Southern, Western, and Richmond Railways—Passenger Great Northern Railway—Passenger Great Southern, Western, and Richmond Railways—Goods Great Northern Railway—Goods	1,531,415 307,808 2,383,211 628,693	1,753,633 376,617 3,033,509 773,502
Total Train Miles	4,851,127	5,937,261
OTHER MILEAGE.		
Great Southern, Western, and Richmond Railways—Ballasting, Shunting, &c	786,858 440,929	889,317 481,488
Total other Mileage	1,227,787	1,370,805
TOTAL MILES	6,078,914	7,308,066

No. 47.

Annual and Daily Mileage of Trains, including Sundays, 1882 and 1883.

•	18	82.	188	33.
• ,	Annual.	Daily.	Annual.	Daily.
TRAIN MILES.				
Suburban	374,655	1,026	413,484	1,13
Western	1,727,799 1,758,644	4,734 4,818	2,014,610	5,520 6,300
Richmond	53,528	147	59,482	165
Northern	936,501	2,566	1,150,119	3,15
Total Train Miles	4,851,127	13,291	5,937,261	16,267
CLASS OF ENGINE.				
PassengerGoods	1,839,223	5,039	2,130,250	5,837
•	3,011,904	8,252	3,807,011	10,430
· Total	4,851,127	13,291	5,937,261	16,267
OTHER MILEAGE.	-			
Suburban	51,440	141	68,684	188
Southern	458,470	1,257	490,448	1,344
Richmond	255,596	700	314,786	863
Northern	21,352 440,929	58 1,208	15,399 481,488	42 1,319
Total other Mileage	1,227,787	3,364	1,370,805	3,756
	-		-	· · · · · · · · · · · · · · · · · · ·
CLASS OF WORK.		,		
Ballasting	170,604	467	170,243	466
Shunting	999,776	2,739	1,110,849	3,044
Empty Water	35,718	98	35,974	99
Fuel	3,942	11	36,332	100
. Total	17,747	49	17,407	47
-	1,227,787	3,364	1,370,805	3,756
Total with shunting, &c	6,078,914	16,655	7,308,066	20,022
Average daily work per engine		49.59	<u></u>	£4.05
-				54.95
Do. including shunting		62.14		67.64
Number of engines	268		296	
,	-		.,-	

No. 48.

Detail of Mileage of each Engine for the year ending 31st December, 1883.

o.	, cı	lass of Engine.	Total Mileage of each Engine.	No.	c	lass of Engine.	Total Mileage of e Engine.
1		GREAT SOUTH	TERN WESTE	EN AND	RICHMON	VD LINES	
					_	,	
1	Goods	•••••••	44,392	85	Passenger	·	32,934
2	"	•••••	30,754	86	,,		32,743
3	12		32,026	87	,, `		19,963
4	,,		32,486	88	,,		29,695
	Passenger		7,408	89	,,		29,030
5	-		1,953	9ó			26,802
	,,	••••	Nil.	91	**		26,717
7 8	33	***************************************	Nil.		,,	***************************************	21,386
- 1	,,	***************************************		92	Coods		
9	,,	***************************************	Nil.	93	Groous		38,051
10	,,	•••••	23,996	94 ·	"		38,567
II	,,		Nil.	95	,,		25,904
12	,,		Nil.	96	,,	******	25,391
13	,,	*********	16,742	97	,,		23,333
14	, ,,		1,421	98	,,		25,009
15.	. "		16,805	99	,,,		19,279
				100			39,406
16	Goods		15,315	101	22		34,231
17.		• • • • • • • • • • • • • • • • • • • •	25,458		,,		24,841
18	"	***************************************	² 5,353	102	,,	· · · · · · · · · · · · · · · · · · ·	
19	"		28,706	103	"	•••••	19,307
20	,, ,	•••••	24.612	104	D.,,		30,954
21	,,	•••••	Nil.	105	Passenger	•••••	7,350
22	,,		Nil.	106	Goods		40,895
23	Passenger		18,894	107	,,		30,504
24	,,	**********	18,075	108	,,		27,579
		***************************************	25,552	109		******	31,810
25 26	"			110	,,		26,483
26	"		26,821	1	"	***************************************	26,466
27	"		18,449	111	,,		
28	- "	***************************************	19,023	112	"	***************************************	24,73 ¹
29	,,,		15.051	113	"		28,134
30	, ,,		15,812	114	,,		26,044
31	,,,		18,973	115	,,		23,526
32	,,	***************************************	23,090	116	,,	· · · · · · · · · · · · · · · · · · ·	36,620
33	,,,	*******************************	20,357	117	,,		28,705
			17,022	118	Passenger	***************************************	20,161
34	,,	***************************************	22,385	119	-		30,333
35 36	, ,,			120	,,	***************************************	34,588
30	"		34,658	11	"	***************************************	24,081
37)) ·	***************************************	19,553	I2I	"	***************************************	
37 38	,,		24,598	122	,,		27,935
39			36,395	123	,,	***************************************	36,701
40	Goods	* * * * * * * * * * * * * * * * * * * *	29,604	124	,,		26,162
41	,,		14,815	125	,,		28,779
42	,,	*******************************	18,231	126	,,		30,596
43	i .		21,079	127	,,		22,711
	,,		23,221	128	i		21,964
44	"	•••••••••••••••••••••••••••••••••••••••	22,883	II .	,,	***************************************	17,749
45	,,	***************************************	, , ,	129	,,		
46	,,	***************************************	31,090	130	Coods		25,504
47	,,		26,553	131	Goods		30,458
48	,,	•••••	20,965	132	,,		19,252
49	· "		23,938	133	,,		17,818
50	,,	******	17,344	134	,,		23,314
51	,,		22,903	135	,,, .		20,165
52	,,		20,052	136	,,		10,97
-	1		21,078	137	,,		30,662
53	,,		28,208	138	"	******************	23,610
54	,,			139	1		26,75
55 56	,,,		23,753	140	,,		30,164
56	,,,	***************************************	17,707	11 .	"		
57	"	* - * * * * * * * * * * * * * * * * * *	19,961	141	"		11,390
58	,,		29,559	142	Doggen gen	***************************************	30,049
59	n "		23,251	143	Passenger		26,04
60	Passenger		. 26,538	144	,,		28,260
61	,,		25,781	145	,,		24,71
62	,,,		26,688	146	,,		33,40
63	,,	*************************	25,369	147	,,		17,95
64	,,	***************************************	30,200	148	,,		27,35
65	",		14,910	149	,,	***************************************	35,71
66		***************************************	15,697	150	,,		36,71
	"			11 -	1		31,36
67 68	"		22,200	151	,,		20,95
_	"	***************************************	10,931	152	"		
69	"	***************************************	10,854	153	"	•••••••••	19,12
70	"	•••••	13,059	154	"	••••••	34,27
71	,,		. 14,622	155	,,	,	
72	,,	***************************************	17,849	156	,,		, ,,,
73	,,		0 -64	157	,,		25,71
74	,,	*********************************	16,077	158	.,		22,01
75		· · · · · · · · · · · · · · · · · · ·		159	,,		1
76 76	"			160			24,33
	"	*	1 7 5	161	"		26,23
77 78	"			162	"		lō
78	,,	••••••••••	. 18,150	11 -	"		1 .
79	"		, ,	163	7,7		21,56
80	,,	************************	1 00,7	164		·····	35,35
81	,,	••••••	1 0 , 1 2	165	Passenger		. 22,24
82	,,		30,198	166	,,	***************************************	
	i .	•		167	1		. 24,10
83	,,,	***********	. 28,999	10/	,,,		- 47

No. 48—continued.

GREAT SOUTHERN, WESTERN, AND RICHMOND LINES—continued.

-		Class of Engine.	Total Mileage of each Engine	No.	Class of Engine.	Total Mileage of Engine
ī	Passenger	٠	34,544	216	Goods	24.00
1	,,	*****	26,395	217	,,	34,23 38,29
	"	*** *** *	36,292	218	,,	34,29
	,,		27,289	219	"	
	"	***	33,539	220		37,58
-	"		36,727	225	2)	38,09
-	"		30,244	226	"	11,72
	"		29,944	227	,,	12,28
				228	"	9,02
1	**	*** ** *** **** ******	24,735	ŀ	22	10,41
-	"	• • • • • • • • • • • • • • • • • • • •	29,636	229))	11,70
ı	,,		29,570	230	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	10,96
-	,,	•••••	31,069	239]	l
	"	• • • • • • • • • • • • • • • • • • • •	31,677	240	11	i
ŀ	Goods	••• ••••	30,190	241	11	İ
		*******	32,142	242		İ
1	,,		23,627	243	[]	Í
ĺ	,,	*** * * *** **** ***	33,340	244		
	,,		30,348	245		
	"		31,188	246	Ordered, but not yet delivered.	
-	9)		27,432	247	Cidered, but not yet delivered.	
	,,		32,321	248		
	,,		30,717	249		
	,,		40,872	250] [
))		32,099	251*		
1),	•••••	34,031	252*		
	"		23,157	253*]] ,	
1	"		28,727	254		
1			32,870		Passenger	
	2) \ 2)	•••	24,915	255 256]	39,00
			28 522		,	29,95
h	,,		28,532	² 57	,,	46,25
				, 258	,,	18,111
		_		259 260	"	28,507
	> Ordered,	but not yet delivered.		265 266	,,	34,418
IJ	<i>α</i> 1			267		
	Goods		33,131	268	Ordered, but not yet delivered.	
ł	,,		37,120	269	11	
	,,		37,698	270		
	,,		30,524	271	[j	
1	93		39,268	272	Passenger	236
1	,,		37,365	273	Ordered, but not yet delivered.	-30
-	33		39,799	274	Passenger	600
	,,		35,445	-/4	Contractors	
	33		39,810	-,		I,455
-	"		35,425	· .	Total mileage	5,676,459
_	"	• • • • • • • • • • • • • • • • • • • •	39,577			
		G)	REAT NORTHE		VE. Passenger	
1:	Passenger		22 767 N			33,247
:	Passenger		22,767 38,375	37 38	_	
:	,,		38,375	38	,,	33,804
:	-		38,375 24,911	38 3 9	39	33,804 30,065
	" "		3 ⁸ ,375 24,911 35,990	38 39 40	,,	33,804 30,065 31,947
))))))		38,375 24,911 35,990 16,009	38 39 40 41	Goods	33,804 30,065 31,947 30,734
	., ,, Goods .		3 ⁸ ,375 24,911 35,990 16,009 16,674	38 39 40 41 42	"	33,804 30,065 31,947 30,734 27,794
	" " Goods .		3 ⁸ ,375 24,911 35,990 16,009 16,674 17,414	38 39 40 41 42 43	Goods	33,804 30,065 31,947 30,734 27,794 37,302
	Goods .		3 ⁸ ,375 24,911 35,990 16,009 16,674 17,414 8,679	38 39 40 41 42 43 44	Goods	35,802 30,065 31,947 30,734 27,794 37,302 29,535
	Goods . Passenger Goods .		38,375 24,911 35,990 16,009 16,674 17,414 8,679	38 39 40 41 42 43 44 45	Goods	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,919
	Goods . Passenger Goods .		38,375 24,911 35,990 16,009 16,674 17,414 8,679 13,335 22,137	38 39 40 41 42 43 44 45	Goods	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,919 32,531
	Goods . Passenger Goods .		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533	38 39 40 41 42 43 44 45 46	Goods	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,919 32,531 33,735
	Goods . Passenger Goods .		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610	38 39 40 41 42 43 44 45 46 47 48	Goods	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,919 32,531 33,735 18,912
	Goods . Passenger Goods .		38,375 24,911 35,990 16,009 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167	38 39 40 41 42 43 44 45 46 47 48	Goods " " " " " " " " " " " " " " " " " "	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,919 32,531 33,735 18,912 33,715
	" " Goods . Passenger Goods . " " " " "		38,375 24,911 35,990 16,009 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670	38 39 40 41 42 43 44 45 46 47 48 49 50	Goods	33,804 30,066 31,947 30,734 27,794 37,302 29,535 34,919 32,531 33,735 18,912 33,715 32,648
	Goods . Passenger Goods .		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993	38 39 40 41 42 43 44 45 46 47 48 49 51	Goods	33,804 30,065 31,947 30,734 27,794 37,302 29,533 34,910 32,531 18,912 33,715 32,648 33,000
	October . Passenger Goods . """ """ """ """ """ """ "" ""		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698	38 39 40 41 42 43 44 45 47 48 49 50 51 221	Goods	33,804 30,065 31,947 30,734 27,794 37,302 29,533 34,910 32,531 18,912 33,715 32,648 33,000
	" " " Goods . Passenger Goods . " " " " " " " Passenger		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972	38 39 40 41 42 43 44 45 46 47 48 49 50 51 221 222	Goods	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,919 32,535 18,912 33,715 32,648 33,000 36,333 37,008
	" " Goods . Passenger Goods . " " " " " " Passenger Goods .		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559	38 39 40 41 42 43 44 45 46 47 48 49 50 51 221 222 223	Goods	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,919 32,531 33,715 32,648 33,000 36,333 37,008 31,768
	"" "Goods . "Passenger Goods . "" "" "" "" "" "Passenger Goods .		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559 27,259	38 39 40 41 42 43 44 45 46 47 48 49 50 51 222 222 223 224	Goods "" "" "" "" "" "" "" "" "" "" "" "" "	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,919 32,531 33,715 32,648 33,000 36,333 37,008 31,768
	"" Goods . Passenger Goods . "" "" "" "" Passenger Goods . "" "" "" "" "" "" "" "" "" "" "" "" "		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559 27,259 18,152	38 39 40 41 42 43 44 45 46 47 48 49 50 51 221 222 223 224 231	Goods " " " " " " " " " " " " " " " " " "	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,919 32,531 33,715 33,715 33,715 33,7008 31,768 35,507 7,593
	Passenger Goods . Passenger Goods . Passenger Goods . """ """ """ """ """ """ """		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,698 10,972 35,559 27,259 18,152 25,328	38 39 40 41 42 43 44 45 46 47 48 49 50 51 221 222 223 224 231 232	Goods Passenger Goods Goods Goods Goods Goods Goods	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,919 32,531 33,735 18,912 33,706 36,333 37,008 31,768 35,507
	"" Goods . Passenger Goods . "" "" "" "" Passenger Goods . "" "" "" "" "" "" "" "" "" "" "" "" "		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559 27,259 18,152 25,328 34,410	38 39 40 41 42 43 44 45 46 47 48 49 50 51 221 222 223 224 231 232 233	Goods	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,919 33,735 18,912 33,715 32,648 33,000 36,333 37,008 31,768 35,507 7,593 6,413
	Passenger Goods . Passenger Goods . Passenger Goods . """ """ """ """ """ """ """		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559 27,259 18,152 25,328 34,410 14,853	38 39 40 41 42 43 44 45 46 47 48 49 50 51 221 222 223 224 231 232	Goods	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,919 32,535 18,912 33,715 32,648 33,033 37,008 31,768 35,507 7,593 6,413 5,096
	"" Goods . Passenger Goods . "" "" "Passenger Goods . "" "" "" "" "" "" "" "" "" "" "" "" "		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559 27,259 18,152 25,328 34,410 14,853 23,052	38 39 40 41 42 43 44 45 46 47 48 49 50 51 221 222 223 224 231 232 233	Goods "" "" "" "" "" "" "" "" "" "" "" "" "	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,919 32,531 33,715 32,648 33,000 36,333 37,008 31,768 35,507 7,593 6,413 5,996
	Goods . Passenger Goods . "" "" "Passenger Goods . "" "" "" "" "" "" "" "" ""		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559 27,259 18,152 25,328 34,410 14,853	38 39 40 41 42 43 44 45 46 47 48 49 50 51 221 222 223 224 231 232 233 233	Goods "" "" "" "" "" "" "" "" "" "" "" "" "	33,804 30,065 31,947 30,734 27,794 37,302 29,533 34,910 32,531 33,735 32,64 33,900 36,333 37,008 31,768 35,507 7,593 6,413 5,096
	Goods . Passenger Goods . "" "" "" Passenger Goods . "" "" "" "" "" "" "" "" ""		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559 27,259 18,152 25,328 34,410 14,853 23,052	38 39 40 41 42 43 44 45 46 47 48 49 50 51 221 222 223 231 232 233 234 235	Goods	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,912 33,775 32,648 33,008 31,768 31,768 35,590 5,594 3,333 37,008 31,769 3,531 31,769 33,735
	Goods . Passenger Goods . "" "" "" Passenger Goods . "" "" "" "" "" "" "" "" ""		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559 27,259 18,152 25,328 34,410 14,853 23,052 26,025 21,195	38 39 40 41 42 43 44 45 46 47 48 49 50 51 222 223 224 231 232 233 234 235 236 237	Goods	33,804 30,066 31,947 30,734 27,794 37,302 29,533 34,912 33,715 32,604 33,000 36,333 37,006 31,768 35,507 7,593 6,413 5,096 5,594 3,300 5,594 3,300 5,594
	Goods . Passenger Goods . "" "" "" Passenger Goods . "" "" "" "" "" "" "" "" ""		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559 27,259 18,152 25,328 34,410 14,853 23,052 26,025 21,195 24,435	38 39 40 41 42 43 44 45 46 47 48 49 50 51 221 222 233 234 233 235 236	Goods "" Passenger "" Goods "" "" "" "" "" "" "" "" ""	33,802 30,066 31,944 30,733 27,794 37,302 29,533 32,531 33,715 32,648 33,000 36,333 37,008 31,768 35,507 7,593 6,411 5,006 3,008 31,768 35,507 7,593 6,413 5,594 6,413 5,594 6,413 5,594 6,413 5,594 6,413 5,594 6,413 5,794 6,413 5,794 6,413 5,794 6,413 5,794 6,413 5,794 6,413 5,794 6,413 5,794 6,413 5,794 6,413 5,794 6,413 5,794 6,413 5,794 6,413 5,794 6,413 5,794 6,413 5,794 6
	Goods . Passenger Goods . "" "" "" Passenger Goods . "" "" "" "" "" "" "" "" ""		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559 27,259 18,152 25,328 34,410 14,853 23,052 26,025 21,195 24,435 20,488	38 39 40 41 42 43 44 45 46 47 48 49 50 51 221 222 223 231 232 233 234 235 236 237 238 261	Goods "" "" "" "" "" "" "" "" "" "" "" "" "	33,802 30,066 31,947 30,734 27,794 37,302 29,533 33,735 18,912 33,745 33,645 35,596 5,596 5,596 5,596 5,596 5,596 5,596 5,596 1,906 1,247 3,643
	Goods . Passenger Goods . """ """ Passenger Goods . """ """ Passenger Goods . """ """ Passenger Goods . """ """ """ """ """ """ """		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559 27,259 18,152 25,328 34,410 14,853 23,052 26,025 21,195 24,435 20,488 33,791	38 39 40 41 42 43 44 45 46 47 48 49 50 51 221 222 233 234 235 236 237 238 261 262	Goods	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,912 33,725 33,708 33,608 31,768 35,507 7,593 6,413 5,596 5,594 3,303 3,303 3,507 7,593 6,413 5,596 5,594 3,303 3,303 3,509 6,413 3,643 3,643 3,643 3,643
	Goods . Passenger Goods . "" "" "" Passenger Goods . "" "" "" "" "" "" "" "" ""		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559 27,259 18,152 25,328 34,410 14,853 23,052 26,025 21,195 24,435 20,488 33,791 40,226	38 39 40 41 42 43 44 45 46 47 48 49 50 51 222 223 234 235 236 237 236 262 263	Goods	33,804 30,066 31,947 30,734 27,794 37,302 29,533 34,912 33,715 32,648 33,000 36,333 37,008 31,768 35,507 7,593 6,413 5,096 5,594 3,302 5,596 5,594 3,302 5,596 5,594 3,302 6,413 5,096 5,596 6,618
	Passenger Goods		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559 27,259 18,152 25,328 34,410 14,853 23,052 26,025 21,195 24,435 20,488 33,791 40,226 26,914	38 39 40 41 42 43 44 45 46 47 48 49 50 51 222 223 224 231 232 233 234 235 236 237 238 261 262 263 264	Goods "" Passenger "" Goods "" Passenger "" "" "" "" "" "" "" "" ""	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,912 33,715 32,648 33,7008 31,768 35,507 7,593 6,413 5,096 5,594 3,303 2,554 3,304 3,6165 6,1618 7,518
	Goods		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559 27,259 18,152 25,328 34,410 14,853 23,052 26,025 21,195 24,435 20,488 33,791 40,226 26,914 55,605	38 39 40 41 42 43 44 45 46 47 48 49 50 51 222 223 234 235 236 237 236 262 263	Goods "" Passenger "" Goods "" "" "" "" "" "" "" "" ""	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,919 32,531 33,715 32,64 35,507 7,593 6,413 5,094 3,303 2,555 1,904 1,247 3,643 6,165 6,618 25,500
	Goods . Passenger Goods . "" "" Passenger Goods . "" "" Passenger Goods . "" "" "" "" "" "" "" "" ""		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559 27,259 18,152 25,328 34,410 14,853 23,052 26,025 21,195 24,435 20,488 33,791 40,226 26,914 55,605 33,947	38 39 40 41 42 43 44 45 46 47 48 49 50 51 222 223 224 231 232 233 234 235 236 237 238 261 262 263 264	Goods "" Passenger "" Goods "" Passenger "" "" "" "" "" "" "" "" ""	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,919 32,531 33,715 32,64 35,507 7,593 6,413 5,094 3,303 2,555 1,904 1,247 3,643 6,165 6,618 25,500
	Goods		38,375 24,911 35,990 16,609 16,674 17,414 8,679 13,335 22,137 26,533 23,610 37,167 18,670 23,993 23,698 10,972 35,559 27,259 18,152 25,328 34,410 14,853 23,052 26,025 21,195 24,435 20,488 33,791 40,226 26,914 55,605	38 39 40 41 42 43 44 45 46 47 48 49 50 51 222 223 224 231 232 233 234 235 236 237 238 261 262 263 264	Goods "" Passenger "" Goods "" "" "" "" "" "" "" "" ""	33,804 30,065 31,947 30,734 27,794 37,302 29,535 34,919 33,735 18,912 33,715 32,648 33,000 36,333 37,008 31,768 35,507 7,593 6,413

^{*} The mileage entered against these engines in Commissioner's Return for 1882 should have been credited to Nos. 255, 256, and 257

No. 49.

Tabular Synorsis of the Total Earnings under the different Heads of Traffic, per Mile open and Train Mile for the Year 1883.

	Trạin l	Miles.	Total Miles r shunti	un, including ng, &c.
Mileage.	Passenger.	Goods.	Passenger.	Goods.
South and West	1,753,633 376,617	3,033,509 773,502	1,985,245 515,287	3,691,214 1,116,320
Àll Lines	2,130,250	3,807,011	2,500,532	4,807,534
Heads of Traffic.	Miles open for Traffic—average	Earnings.	Per Mile open.	Per Train mil
COACHING.				,
Passengers, 1st and 2nd Class— South and West	No. 940⅓	£ 440,792	£ 468.68	d. 60 [.] 33
North	3612	94,884	262.47	60.47
All Lines	1,302	535,676	411.43	60.35
Senson Ticket Holders— South and West	9401	28,933	30.76	3.96
North	361½	1,120	3,10	0.21
All Lines	1,302	30,053	23.08	3.38
Horses, Carriages, Dogs, Parcels, &c.— South and West	9401	42,674	, 45'37	5.84
North	361½	15,379	42'54	9.80
All Lines	1,302	58,053	44.59	6.24
Mails— South and West North	940½ 361½	20,061 7,728	21.38	2.75 4.92
All Lines	1,302	27,789	21,34	3.13
Miscellaneous—		· · ·		
South and West North	940½ 361½	7,04 3 3,137	7°49 8°68	0.00 5.00
All Lines	1,302	10,180	7.82	1.12
Total Coaching— South and West	940}	539,503	573.63	73.84
North	3612	122,248	338.14	77.90
All Lines	1,302	661,751	508.56	74.22
Goods. Live Stock—				
South and West	940½ 361½	127,344 27,583	76·30	10.07 8.26
All Lines	1,302	154,927	118.00	9.77
Minerals— South and West	9401	83,572	88.86	6.61
North All Lines	1,302	75,991	122,22	10.06
Wooi— South and West	9401	105,038	111.68	8.31
North	3611	51,719	143.07	16.02
All Lines	1,302	156,757	120'40	9.88
South and West North	940½ 361½	619,566 ·172,696	658·76 477·72	49°02 53°58
'All Lines	1,302	792,262	608.20	49'94
Miscellaneous— South and West North	940½ 361½	4,363 1,841	, 4·64 5·09	o:35 o:57
All Lines		6,204	4.76	0.39
Total Goods— South and West	940}	939,883 329,830	999.34	74°36
North All Lines	1,302	1,269,713	912.39	80.04
Gross Earnings — South and West	9401	1,479,386	1,572'97	74.16
North	361½	452,078	1,250.56	94.33
All Lines	1,302	1,931,464	1,483.46	78.07

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No. 50.

Tabular Analysis showing Working Expenses, Gross Earnings, and Net Earnings, per Mile open, and Train Mile, 1883.

Mileage.	Miles open— Average.	Train miles.	Miles run, including shunting.
South and West	940½ 361½	4,787,142 1,150,119	5,676,459 1,631,607
Total	1,302	5,937,261	7,308,066
Heads of Expenditure.	Amount.	Per mile open.	Per train mile.
Locomotive Power and Repairing Engines— South and West North	£ 311,456 70,607	£ 331'16 195'32	d. 15'61 14'73
Total	382,063	293.44	15'44
Carriage and Waggon Repairs— South and West North	43,102 13,009	45 ^{.8} 3 35 [.] 99	2.19
Total	56,111	43'10	2.54
Maintenance and Renewal of Way— South and West North	279,318 64,004	296·99 177·05	14 [.] 00 13 [.] 36
Total	343,322	263.69	13.88
Traffic Charges, Coaching, and Merchandise— South and West North	263,439 88,662	280'10 245'26	13.51
Total	352,101	270'43	14'23
Compensation, Personal Injury, &c.— South and West North	2,878 2	3.00	0.14 0.00
Total	2,880	2.51	0,15
Compensation, Damage to and Loss of Goods— South and West North	1,533 188	1'63	o·o8 o·o4
Total	1,721	1.35	0.04
Miscellaneous Working Expenses and General Establishment— South and West	30,483	32'41 25'19	1.23
Total	39,590	30.41	1.60
Gross Expenditure— South and West North	932,209 245,579	679°33	46·73 51·24
Total	1,177,788	904.60	47.61
Gross Earnings— South and West North	1,479,386 452,078	1,572 [.] 97 1,250 [.] 56	74·16 94·33
Total	1,931,464	1,483.46	78.07
Net Earnings— South and West	547, ¹ 77 206,499	581.79 571.23	27.43 43.09
Total	753,676	578.86	30.46

No. 51.

RETURN of the MILEAGE and WEIGHT of PASSENGERS and Tons of Goods carried during 1883, and the Average Receipts per mile.

Description.		Southern, Western, and Richmond.	Northern.	Total.
				~
COACHING TRAFFIC.				
Number of 1st and 2nd class passengers	No.	5,953,647	677,778	6,631,425
,, season ticket holders' journeys	"	2,441,096	109,124	2,550,220
" workmen's ticket "	"	1,090,392		1,090,392
Total passenger ,,	••••••	9,485,135	786,902	10,272,037
••				
Total number of miles travelled	Miles.	114,126,981	20,648,109	134,775,090
Average mileage per passenger	"	12.03	26.24	. 13.15
Gross amount received from passengers	£	469,725	96,004	565,729
Average receipts per mile per passenger	d.	0.99	1,15	1.01
				60.0
Tonnage of passengers carried	Tons.	632,342	52,460	684,802
,, horses, carriages, and dogs	- 33	4,396	1,602	5,998
,, mails and parcels)	5,522	2,645	8,167
·		642,260	56,707	698,967
		,		
Total mileage of tons	Miles.	8,860,551	1,744,680	10,605,231
Average mileage per ton	"	13.80	30'77	. 15'17
cellaneous receipts	£	539,503	122,248	661,751
Average receipts per ton per mile	d.	14.61	16.82	14.98
,			•	
Goods Traffic.		•		
Total tonnage of goods	Tons.	1,147,818	1,648,483	2,796,301
" live stock	,	52,318	15,737	68,055
		1,200,136	1,664,220	2,864,356
m., 1 11 11 11 11 11 11 11 11 11 11 11 11	3.51-			
Total mileage of tons of goods and live stock	Miles.	121,546,264	33,744,626	155,290,890
Average ,, ,,	"	101.58	20.58	54.51
Gross amount received for above traffic and mis-			^	
collaneous receipts	£	939,883	329,830	1,269,713
Average receipts per ton per mile	đ.	1.85	2.32	1,96

No. 51a.

CAMDEN TRAMWAY.

RETURN of the MILEAGE and WEIGHT of PASSENGERS and Tons of Goods carried during 1883, and the Average Receipts per mile.

Description.		Camden Tramway.
Coaching Traffic.		
Number of 1st and 2nd class passengers	No.	29,148
" season ticket holders' journeys	37	Nil.
Total passengers		29,148
Number of miles travelled	Miles.	185,484
Average mileage per passenger		6.36
Fross amount received from passengers	. " £	1,330
Average receipts per mile per ,	d.	1,330
	u.	
Connage of passengers carried	'Tons.	1,943
,, horses, carriages, and dogs	. ,,	44
" mails and parcels	,,	146
	,	<u> </u>
	-	2,133
Potal mileage of tons	Miles.	13,878
Average mileage per ton	>>	6.21
Fross amount received for above traffic and miscellaneous receipts	£	r,737
Average receipts per ton per mile	d.	30.04
	-	,
Goods Traffic.		
otal tonnage of goods	Tons.	11,315
,, live stock	,,	90
	,	
		11,405
otal mileage of tons of goods and live stock	Miles.	87,404
.verage ,, ,, ,,	, ,,	7.66
ross amount received for above traffic and miscellaneous receipts	. £	. 1,493
verage receipts per ton per mile	d.	4.10

No. 52.

Weight of Locomotive Engines and Tenders, empty and loaded, on 31st December, 1883.

					Eng	gines.		-,	, , , , , , , , , , , , , , , , , , , ,	,			Tene	ders.		•	
No. of Engine.	No. of Engines of same		Em	pty.			In S	team.			Em	pty.			Fu	ıll.	,
	weight.	Leading.	Driving.	Trailing.	Total.	Leading.	Driving.	Trailing.	Total.	Leading.	Middle.	Trailing.	Total.	Leading.	Middle.	Trailing.	Total.
SOUTHEEN AND WESTERN. I to 4 5 and 7 8 9 10 11 12 13 14 to 16 17 to 22 23 to 28 29 to 31 32 to 35 36 to 39 40 to 43 44 to 47 48 to 51 52 53 to 59 60 to 65 66 67 to 74 75 to 78 79 to 92 93 to 102 103 104 105 106 to 117 118 to 126 127 to 129 130 131 to 141 142 143 to 157 158 to 163 164 165 to 182 183 to 194 195 to 198	4 1 2 1 1 1 1 36 6 3 4 4 4 4 4 4 1 7 6 1 8 4 14 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	tons cwt. qrs. 9	tons cwt. qrs. 10 18 0 5 19 2 6 10 2 7 12 2 6 9 2 9 6 3 6 9 2 10 8 0 10 19 2 11 7 2 11 2 2 4 15 3 10 19 2 8 11 0 10 6 2 8 11 0 10 6 2 11 4 3 4 7 0 8 42 12 18 0 10 18 0	10 14 2 3 19 1 4 0 0 0 12 0 0 0 4 17 17 1 5 1 0 0 9 12 0 0 1 17 18 1 5 1 3 1 9 16 2 10 16 1 10 16 2 10 16 1 10 16 2 10 16 2 10 16 2 10 16 2 10 16 2 10 16 2 10 16 2 10 16 2 10 16 2 10 16 2 10 16 2 10 17 2 10 18 3 10 14 2 10 18 3	30 14 0 0 16 17 0 0 19 8 0 2 18 18 18 2 18 18 2 2 2 16 1 2 2 2 2 3 19 17 9 2 1 2 2 6 15 2 1 2 1 1 1 1 1 1 1 2 2 1 1 1 1 1 1	tons cwt. qrs. 9 19 2 7 13 0 9 0 0 8 14 0 7 19 0 8 14 0 7 19 0 8 14 0 10 12 0 8 8 2 6 1 0 9 10 0 12 5 0 12 5 0 12 5 0 12 5 0 12 7 3 9 19 2 13 7 3 9 19 2 14 0 Coupled 10 11 3	tons ewt. qrs. 12 0 0 6 0 0 9 4 0 9 14 0 9 14 0 7 17 0 12 0 0 11 4 1 6 6 0 12 12 0 10 17 0 11 11 3 10 17 0 11 11 3 10 17 0 11 11 3 12 5 1 5 19 2 9 6 0 13 15 0 13 0 0 13 15 0 13 0 0 12 0 0 13 12 0 0 13 12 0 0 13 12 0 0 14 10 0 15 1 2 17 0 0 18 10 0 19 10 0 10 12 0 11 10 0 12 0 0 13 0 0 14 10 0 15 1 2 17 0 0 18 0 0 19 0 0 10 10 0 11 1 1 0 12 0 0 13 0 0 14 0 0 15 1 2 17 0 0 18 0 0 19 0 0 10 10 0 11 1 1 2	4 0 0 3 6 1 1 11 11 3 4 6 3 14 17 0 4 4 4 0 11 11 3 7 17 2 6 6 6 0 0 9 10 2 11 0 0 6 14 0 10 2 0 10 6 3 12 12 18 10 16 18 10 16 3 11 16 2 12 4 0 14 19 1 11 16 2 12 4 0 14 19 1 11 16 2 12 4 0 14 19 1 11 16 2 12 12 12 11 16 2 11 16	tonsewt. qrs. 33 16 0 17 13 0 21 10 1 29 19 3 21 8 3 33 14 1 29 19 3 26 6 5 0 31 12 0 32 16 0 31 12 0 32 16 0 33 17 0 33 17 0 33 17 0 33 16 0 33 17 0 33 16 0 33 17 0 33 16 0 33 17 0 33 16 0 33 17 0 33 16 0 33 17 0 33 16 0 33 17 0 33 16 0 33 17 0 33 16 0 33 17 0 33 16 0 37 11 3 33 16 0 37 11 3 33 16 0 37 11 3 33 16 0 37 11 3 33 16 0 37 11 3 33 16 0 37 11 3 33 16 0	tons cwt. qrs. 4 7 0 3 15 2 4 2 0 4 9 3 4 4 1 0 4 5 0 4 5 0 4 5 0 4 5 0 3 16 3 4 4 0 3 16 3 4 4 7 0 4 7 0 4 7 0 4 7 0 4 7 0 4 7 0 4 7 0 4 7 0	tons ewt. qrs. 3 2 1 2 19 2 11 11 3 11 2 0 2 9 2 2 14 0 2 14 0 3 4 5 1 4 3 3 3 3 19 1 4 5 1 5 1 6 2 1 7 0 7 3 4 2 7 1 7 0 3 4 2 7 1 7 0 3 4 2 7 1 7 0 3 4 2 7 1 7 0 3 4 2 7 1 7 1 3 4 2 7 1 4 5 1 7 1 5 1 7	tons cwt. qrs. 4 2 3 3 9 0 3 5 0 3 12 2 6 3 2 3 14 3 4 8 3 4 13 3 4 6 0 4 12 0 3 10 2 4 3 1 4 13 2 4 2 3 4 0 2 6 16 0 0 6 14 0 4 2 3 4 0 2 4 2 3 4 0 2 4 2 3 4 0 2 4 2 3 4 2 3	tons cwt. qrs. 11 12 0 7 4 1 9 10 0 7 14 2 12 5 0 7 15 2 8 13 0 10 13 0 11 10 1 11 5 0 11 5 0 12 7 0 11 1 0 12 5 1 13 1 1 12 17 0 11 7 0 11 14 2 11 12 0 11 14 2 11 12 0 11 14 2 11 12 0 11 14 2 11 12 0 11 14 2 11 12 0 11 14 2 11 12 0 11 14 2 11 12 0 11 14 2 11 12 0 11 14 2 11 12 0 11 14 2 11 12 0 11 14 2 11 12 0 11 14 2 11 12 0 11 14 2 11 12 0 11 14 2 11 12 0 11 14 2 11 12 0 11 14 2	tons ewt. qrs. 7 16 0 6 15 0 5 7 2 6 9 3 7 18 0 6 10 3 6 18 0 7 9 0 7 19 0 8 1 2 7 8 0 8 12 2 9 0 2 8 6 0 7 14 0 7 16 0 7 16 0 7 14 0 7 16 0 7 14 0 7 16 0 7 14 0 7 16 0 7 16 0 7 14 0 7 16 0 7 16 0 7 16 0 7 16 0 7 16 0 7 16 0	tons cwt. qrs. 7 2 0 6 0 0	tons cwt. qrs. 7 13 0 6 3 2 6 5 0 6 5 0 7 12 3 7 6 0 7 12 2 7 4 0 8 1 0 8 1 0 7 12 2 8 5 0 8 9 2 7 12 0 7 13 0 7 13 0 7 13 0 7 13 0 7 13 0 7 13 0 7 13 0 7 13 0 7 13 0 7 13 0 7 13 0 7 13 0 7 13 0 7 13 0 7 13 0 7 13 0 7 13 0	tonsewt. qrs. 22 11 0 12 18 2 17 12 2

	. No of	ļ			Eng	rines.							Ten	ders. •			
No. of Engine.	No. of Engines of same weight.		Em	pty.			In S	team.			Em	pty.			F	ull.	
		Leading.	Driving.	Trailing.	Total.	Leading.	Driving.	Trailing.	Total.	Leading.	Middle.	Trailing.	Total.	Leading.	Middle.	Trailing.	Tota
SOUTHERN AND VESTERN—contd.	214	tons cwt. qrs. Bogie	tons cwt. qrs.	tons cwt. qrs.	tons cwt. qrs.	tons cwt. qrs.	tons cwt. qrs.	tons cwt. qrs.	tons ewt. qrs.	tons cwt. qrs.	tons cwt. qrs.	tons ewt. qrs.	tons cwt. qrs.	tons cwt. qrs.	tons cwt. qrs.	tons cwt. qrs.	tons ew
225 to 230	6	7 5 2 Coupled 9 15 2 Front Bogie)	11 17 0	39 7 0	7 14 0 Coupled 10 12 3	1)	13 1 0	42 8 1	4 7 I	4 5 1	4 1 1	12 13 3	8 5 0	8 2 2	7 18 3	24 (
255 to 257	3 }	5 17 2 Back Bogie 5 10 0	11 13 2	11 3 2	34 13 2	Front Bogie 6 0 0 Back Bogie 6 10 0	12 12 (12 0 0	37 11 0	490	470	462	13 2 2	8 13 6	.7 18 0	8 0 0	24 1
258 to 260	3 }	Front Bogie 5 17 2 Back Bogie 5 19 0	\{\ 11 13 2	11 3 2	(Front Bogie 6 9 0 Back Bogie 6 10 0	12 12 0	12 0 0	37 11 0	4 9 0	4 7 0	462	13 2 2	8 13 0	7 18 o	8 0 0	24 1
272 to 274	_)	Front Bogie 6 7 0 Back Bogie 6 15 0		11 4 2		Front Bogie 6 18 1 Back Bogie 6 15 3	17	11 12 ,0	38 19 o	4 12 2	4 4 0	4 9 I	13 5 3	8 15 0	7 6 3	8 16 0	24 1
Northern.	228					1										,	
1 to 3 4 5 and 17 6 and 7 8 9 10 12, 13, 18, 19, 21, and 22.	3 1 2 2 1 1 1	9 I 0 8 0 0 7 ¹ 2 I 9 4 0 6 8 2 4 5 3 8 0 I 6 ¹ 3 0	9 0 0 5 17 0 6 9 2 9 16 0 10 8 1 4 4 2 10 8 0	4 0 0 11 12 0 3 8 2 4 14 1 4 8 1	16 17 · 0 18 1 3 30 12 0 20 5 1 13 4 2 22 16 2	10 5 0 9 10 0 8 0 0 10 14 0 7 8 2 5 16 3 10 0 0 8 18 2	10 10 0 6 3 0 8 12 10 11 8 1 5 5 3 11 2 0	4 2 0 4 0 0 11 16 0 3 17 2 3 15 2 5 4 0	25 10 0 19 15 0 20 12 0 35 0 0 22 14 1 16 18 0 26 6 2 30 5 0	3 ¹⁴ 3 3 ¹⁵ 0 4 ² 0 4 ⁴ 0 4 9 0	4 3 2	2 18 3 3 9 0 3 12 2 3 14 2 4 8 3 4 11 3	10 17 0 7 .4 0 7 14 2 	7 7 2 6 15 0 6 9 3 	4 17 0 6 3 0	8 3 2 6 3 2 6 5 1 	12 15 12 15 12 15 14 6
14 to 16 20 23 to 26 27 to 30 31 to 36 37 to 39 40 to 46 47 to 51	3 . 4 4 6 3 7	8 7 0 10 0 0 9 14 0 11 9 3 9 1 2 11 9 3 9 1 2 11 9 3	10 6 0 10 0 0 9 1 0 12 0 0 10 18 0 10 18 0 10 10 0	10 0 0 9 13 0 11 8 3 10 14 2 11 8 3 10 14 2	27 13 0 30 0 0 28 8 0 34 18 2 30 14 0 34 18 2	9 0 0 10 10 0 10 5 0 12 7 3 9 19 2 12 7 3 9 19 2	•	12 4 0 10 8 2 12 4 0 11 16 2 12 4 0 11 16 2	29 15 0 35 0 0 31 1 0 37 11 3 33 16 0 37 11 3 33 16 0	4 12 0 	3 4 0	3 12 0 	11 8 0	7 3 0 7 3 0 7 14 0 7 16 0 7 14 0 7 16 0	5 14 0 	7 7 0 7 7 0 7 8 3 7 13 0 7 8 3 7 13 0	20 4 21 13 22 11 21 13 22 11
221 to 224	4			3	34 18 2 39 1 3	Bogie 6 8 2) _	12 4 0 11 11 $0\frac{1}{2}$	37 II 3 41 I5 3	4 9 2	3 4 ² 3 ² I	4 0 2 4 2 3	11 14 2	7 14 0 7 16 0	6 11 0	7 8 3	21 13
231 to 238	8			1	39 1 3	Bogie 6 8 2 11 11 2	} 12 4 2½	II II 0½	-	4 7 0	3 2 1	4 2 3	11 12 0	7 16 0	7 2 0	7 13 0	22 11
261 to 264 291		13 2 0 9 I 2	11 16 3	11 4 2 10 14 2	36 3 1 30 14 0	13 14 0 9 19 2	13 13 O 12 O O	II 12 O II 16 2	38 19 0 33 16 0	4 12 2 4 7 0	4 4 0 3 2 I	4 9 I 4 ² 3	13 5 3 11 12 0	8 15 0 7 16 0	7 6 3 7 2 0		24 17 22 11
		t		i		l	,			١	ľ	1		•	i	1	

No. 52 (continued)—Abstract of Total and Average Weights of Rolling Stock, empty.

		Southern and West	ærn.	Northern.			
• .	No. of each Class.	Total Weight, Empty.	Average Weight.	No. of each Class	Total Weight, empty.	Average Weight.	
Passenger Stock.		tons cwt. qrs.	tons cwt. qrs.		tons cwt. qrs.	tons cwt. qrs.	
Carriages, Dining		25 11 2	25 11 2		•••		
Do. Sleeping	7	126 10 2	18 1 2	ı	18 11 0	18 11 0	
Do. First Class		924 16 0	13 8 0	. 19	146 5 0	7 14 0	
Do. Composite	69	807 5 1	11 14 0	26	313 4 3	12 0 3 ⁴ / ₅	
Do. 2nd Class		1,355 1 O	8 13 3	. 71	472 4 0	6 13 0	
Brake Vans, Composite	. 46	536 13 2	11 13 14	9	115 16 0	12 17 1 1	
Mail ,	. 8	66 14 2	8 6 3 ¹ / ₄	4	23 0 0	5 15 0	
Prison "	3	19 4 2	6 8 r	3	20 18 2	6 19 2	
Workmen's Vans	_	118 8 о	5 7 2½				
Horse Boxes		370 13 0	5 15 3½	30	170 2 2	5 13 2	
Carriage Trucks		150 9 0	4 3 24	20	85 3 I	4.5 1	
Hearses		18 12 2	4 13 02	2	10 15 2	5 7 3	
Brake Vans	. 15	97 18 0	6 10 2	13	82 19 3	6 7 23	
			·				
Total	. 500	4,617 17 1	9 4 3	198	1,459 O I	7 7 13	
GOODS STOCK.			:				
Brake Vans	. 105	1,234 12 0	11 15 0 ³ 4	39	408 16 3	10 9 3	
A Waggons	. 132	557 6 0	4 4 1 3	70	292 8 0	4 3 2	
В. "	. 156	703 10 1	4 10 1	60	291 18 1	4 17 1	
C Vans	. 200	1,115 11 2	5 11 . 24	92	525 3 2	5 14 0	
D Waggons	3,262	14,918 6 1	4 11 2	838	3,791 14 1	4 10 2	
E "	. 192	797 1 0	4 3 0	84	340 I 3	4 1 0	
F ,,	. 3	22 I2 I	7 10 3		••••••		
G "	. 33	403 7 0	12 4 2				
Water Trucks	. 6	25 8 2	4 4 3	6	36 17 3	6 3 0	
Loco. Coal Trucks	. 140	665 o o	4 15 0				
Powder Vans	. 11	57 6 o	5 4 0	8	42 3 3	5 5 2	
Sheep "	250	1,682 12 3	6 14 2	139	938 15 3	6 15 0	
Cattle Waggons	271	1,706 10 3	6 5 3	112	714 6 1	6 7 2	
Meat Vans	10	66 0 0	6 12 0	7	42 18 2	6 2 2	
Composite Cattle and Goods Van	1	8 18 o	8 18 0				
Refrigerating Car	т	8 3 0	8 3 0				
Ballast Waggons	42	143 7 0	3 8 1	106	432 18 3	4 1 2	
Dump Car		9 16 2	9 16 2				
Accident Vans	6	52 10 0	8 15 0				
*Coal Waggons		1		2,273	10,762 15 2	4 14 3	
Total	4,822	24,177 18 3	5 0 1:	3,834	18,620 18 3	·4 17 1	
Total Vehicles, all Lines	5,322	28,795 16 0	14 5 0	4,032	20,079 19 .0	12 5 Q	

* Private

No. 52—continued.

Weight of Locomotive Engines and Tenders, and Tonnage carried, on the Great Southern, Western, and Richmond Lines during 1883.

· · ·	Weight of Engine	Mileage of each	Total ·	es during 1883	Weight of Engine	Mileage of each	m-1 1
o. of Engine.	and Tender for whole journey.	Engine and Tender.	Tons carried.	No. of Engine.	and Tender for whole journey.	Engine and Tender.	Total Tons carrie
	t. c. q.			_	t. c. q.		``
I	52 14 0	44,392	2,339,458	8 ₅ 86	55 18 3	32,934	1,842,24
2	52 14 0 52 14 0	30,754 32,026	1,620,735 1,687,770		55 18 3 55 18 3	32,743	1,831,55 1,116,65
.4	52 14 0	32,020	1,712,012	.87 88	55 18 3 55 18 3	19,963 29,695	1,110,07
5	28 13 2	7,408	212,423	89.	55 18 3	29,030	1,623,86
	36 8 2	1,953	71,036	9ó	55 18 3	26,802	1,499,23
7 8	36 8 2	***********	•••	9r	55 18 3	26,717	1,494,47
	28 1 1		*** * * * * * * * * * * * * * * * * * *	92	55 18 3	21,386	1,196,27
9 10	52 15 2	23,996	1,266,388	93 94	52 14 0 52 14 0	38,051 38,567	2,005,28 2,034,48
11	32 7 0	23,990		95	52 14 0	25,904	1,365,14
12	28 1 1			96 96	52 14 0	25,391	1,338,10
13 .	. 38 18 0	16,742	651,263	97	52 14 0	23,333	1,229,64
14	42 14 3	1,421	60,728	98	52 14 0	25,009	1,317,97
15 . 16	42 14. 3	16,805	718,203	. 99	52 14 0	19,279	1,016,00
17	42 14 3	15,315 25,458	654,523 1,213,708	101	52 14 0	39.406	2,076.6
18	47 13 2 47 13 2	² 5,450 ² 5,353	1,213,708	101	52 14 0 52 14 0	34,231 24,841	1,803,97 1,309,12
19	47 13 2	28,706	1,368,557	103	49 14 1	19,307	959,79
20	47 13 2	24,612	1,273,376	104	52 14 0	30,954	1,631,27
21	47 13 2			105	50 18 3	7,350	374,3
22	47 13 2	•••••	••••••	106	52 14 0	40,895	2,155,1
23	48 5 0	18,894	911,635	107	52 14 0	30,504	1,607.5
24	48 5 0	18,075	872,118	108	52 14 0	27,579	1,453.4
25 26	48 5 0 48 5 0	25,552 26,821	1,232,884	110	52 14 0 52 14 0	31,810 26,483	1,676,3
20 27	48 5 0	18,449	890,164	111	52 14 0	26,466	1,395,6 1,394,7
28	48 5 0	19,023	917,859	112	52 14 0	24,731	1,303,3
29	_ 18 о з	15,051	271,482	113	52 14 0	28,134	1,482,6
30	18 0 3	15,812	285,208	114	52 14 0	26,044	1,372,5
31	18 0 3 51 2 0	18,973	342,225 1,179,899	115 116	52 14 0	23,526	1,239,8
32 33	51 2 0 51 2 0	23,090 20,357	1,179,699	110	52 14 0 52 14 0	36,620 28,705	1,929,8
33 34	51 2 0	17,022	869,824	118	55 18 3	20,161	1,127,7
35	51 2 0	22,385	1,143,873	119	55 18 3	30,333	1,696,7
35 36	48 2 1	34,658	1,668,781	120	55 18 3	34,588	1,934,7
37 38	48 2 1	19,553	491,473	121	55 18 3	24,081	1,347,0
38	48 2 1	24,598	1,184,392	122	55 18 3	27,935	1,562,6
· 39 40 .	48 2 I 48 4 0	36,395 29,604	1,752,418 1,426,912	123 124	55 18 3 55 18 3	36,701 26,162	2,05 2, 9 1,463.4
41	48 4 0	14,815	714,083	125	55 18 3 55 18 3	28,779	1,609,8
42 ′	48 4 0	18,231	878,734	126	55 r8 3	30,596	1,711,40
43	48 4 0	21,079	1,016,008	127	21 5 0	22,711	482,6
44	49 14 1	23,221 22,883	1,154,373	128	21 5 0	21,964	466,7
45 46	49 14 1 49 14 1	31,090	1,137,571 1,545,561	129 130	21 5 0 55 10 1	17,749 25,504	377,19 1,415,7
47	49 14 1	26,553	1,320,016	131 ,	70 18 2	30,458	2,160,2
48	56 13 0	20,965	1,187,667	132	70 18 2	10,252	1,365,4
49	56 13 0	23,938	1,356,086	133	70 18 2	17,818	1,263,7
50	56 13 0	17,344	982,537	134	70 18 2	23,314	1,653,5
51 52	56 13 0 49 14 1	22,903 20,052	1,297,454 996,834	135 136	70 18 2	20,165	1,430,2 778,2
53	56 13 0	21,078	1,194,068	137	70 18 2	30,664	2,174,8
54	56 13 0	28,208	1,597,982	138	70 18 2	23,619	1,665,1
55 56	56 13 0	23,753	1,345,606	139	70 18 2	26,756	1,897,6
56	56 13 0	17,707	1,003,100	140	70 18 2	30,164	2,139,3
57 58	56 13 0 56 13 0	19,961	1,030,790 1,674,51 <u>5</u>	141	70 18 2	11,390	807,8 1,583,5
50 50	56 13 0	29,559 23,251	1,317,168	142 143	52 14 0 55 18 3	30,049 26,043	1,456,7
59 60	58 17 1	26,538	1,562,091	144	55 18 3	28,260	1,580,7
61	58 17 1	25,781	1,517,533	145	55 18 3	24,715	1,382,4
62	58 17 1	26,688	1,570,921	146	55 18 3	33,404	1,868,5
63	58 17 1	25,369	1,493,281	147	55 18 3	17,954	1,004,2
64 6-	58 17 1	30,200	1,777,647	. 148	55 18 3	27,358	1,530,3
65 66	58 17 1 17 16 3	14,910 15,697	877,639 279,993	149 150	55 18 3 55 18 3	35,711 36,711	1,997,5 2,053,5
67	25 18 3	22,200	575,812	151	55 18 3 55 18 3	31,366	1,754,5
68	25 18 3	10,931	283,520	152	55 18 3	20,959	1,172,3
69	25 18 3	10,854	281,523	153	55 18 3	19,120	1,069,5
70	25 18 3	13,059	338,714	154	55 18 3	34,277	1,917,3
71	25 18 3 25 18 3	14,622 17,849	379,256	155	55 18 3	32,043	1,792,4
72 73		8,764	462,956 227,315	156 157	55 18 3	20,934 25,710	1,170,9 1,438,1
73 74		16,077	416,99 3	157	55 18 3 37 16 1	25,710	832,5
	48 6 ŏ	34,613	1,671,807	159	37 16 I	32,217	1,218,2
75 76	48 6 o	17,252	833,271	160	37 16 I	24,339	920,3
77 78	48 6 o	15,784	762,367	161	37 16 г	26,234	991,9
78 70	48 6 0'	18,150	876,645	162	37 16 1	20,184	763,2
79 80	55 18 3 55 18 3	26,107	1,460,357	163	37 16 1	21,565	815,4
		33,723 30,675	1,886,378 1,715,879	164 165	52 14 0 55 18 3	35,354 22,243	1,863,1 , 1,244,2
	1 55 10 7				. 77 40 41	441443	
81 82	55 18 3 55 18 3			166			
81	55 18 3 55 18 3 55 18 3 55 18 3	30,198 30,198 28,999 26,243	1,689,197 1,622,127 1,467,966		55 18 3 55 18 3 55 18 3	24,417 24,109	1,365,8 1,348,5

No. 52—continued.
Weight of Locomotive Engines and Tenders, and Tonnage—continued.

No. of Engine.	Weight of Engine and Tender for whole journey.	Engine and	Total Tons carried.	No. of Engine.	Weight of Engine and Tender for whole journey.	Mileage of each Engine and Tender.	Total Tons carried.
	t. c. q.)		t. c. g.		
169	1 2	34,544	1,932,303	208	t. c. q. 62 17 0	30,524	1,918,433
170	55 18 3 55 18 3	26,395	1,476,466	200	62 17 0	39,268	2,467,993
171	55 18 3	36,292	2,030,082	210	62 17 0	37,365	2,348,389
172	55 18 3	27,289	1,526,476	211	62 17 0	39,799	2,501,265
173	55 18 3	33,539	1,876,084	212	62 17 0	35,445	2,227,717
174	55 18 3	36,727	2,054,414	213	62 17 0	39,810	2,501,058
175	55 18 3	30,244	1,691,773	214	62 17 0	35,425	2,226,460
176	55 18 3	29,944	1,674,991	215	62 17 0	39,577	2,487,413
177	55 18 3	24,735	1,383,611	216	62 17 0	34,239	2,151,919
178	55 18 3	29,636	1,657,761	217	62 17 0	38,295	2,406,839
179	55 18 3	29,570	1,654,070	218	62 17 0	34,299	2,155,690
180	55 18 3	31,069	1,737,919	219	62 17 0	37,587	2,362,341
181	55 18 3	31,677	1,771,928	220	62 17 0	38,093	2,394,144
182	55 18 3	30,190	1,688,751	225	63 17 0	11,720	748,908
183	52 14 0	32,142	1,693,883	226	63 17 0	12,283	784,322
184	52 14 0	23,627	1,245,142	227	. 63 17 0	9,027	576,372
·185	52 14 0	33,340	1,757,018	228	63 17 0	10,414	664,933
186	52 14 0	30,348	1,599,339	229	63 17 0	11,700	747,045
187	52 14 0	31,188	1,643,607	230	63 17 0	. 10,961	699,859
188 188	52 14 0	27,432	1,445,666	255	55 11 0	39,005	2,166,727
189	52 14 0	32,321	1,703,316	256	58 5 3	29,952	1,745,820
190	52 14 0	30,717	1,618,785	257	58 5 3	46,255	2,696,087
191	52 14 0	40,872	2,153,954	258	58 5 3	18,111	1,055,643
192	52 14 0	32,099	1,691,616	259	58 5 3	28,507	1,661,600
193	52 14 0	34,031	1,793.433	260	58 5 3	34,418	2,006,138
194	52 14 0	23,157	1,220,373	272	59 19 2	236	14,153
195	52 14 0	28,727	1,513,912	273	Ordered, not ye	t delivered.	
196	52 14 0	32,870	1,732,249	274	59 19 2	600	35,985
197	52 14 0	24,915	1,313,020				
198	52 14 0	28,532	1,503,636	Total	11,717 17 0	5,675,004	305,888,081
205	62 17 0	33,131	2,082,282		 -		
206	62 17 0	37,120	2,332,992	Averages	51, 3 0	24,782	1,335,756
207	62 17 0	37,698	2,369,318			l	

GREAT NORTHERN LINE.

No. of Engine.	Weight of Engine and Tender for whole journey.	Mileage of each Engine and Tender.	Total Tons carried.	No. of Engine.	Weight of Engine and Tender for whole journey.	Mileage of each Engine and Tender.	Total Tons carried
	t. c. q.				t. c. q.	.	
I	42 14 1	22,767	972,435	27	55 19 O	33,247	1,860,170
2	42 14 1	38,375	1,639,805	37 38	55 19 0	33,804	1,891,33
3	42 14 1	24,911	1,064,011	39	55 19 0	30,065	1,682,13
4	30 15 1	35,990	1,107,142	40	52 14 0	31,947	1,683,60
Ė	31 13 2	16,000	507,085	. 41	52 14 0	30,734	1,619,68
5 6	33 10 2	16,674	558,996	42	52 14 0	27,794	1,464.74
	33 10 2	17,414	583,864	43	52 14 0	37,302	1,965,81
7 8	33 19 2	8,679	294,869	44	52 14 0	29,535	1,556,49
. 9	15 13 2	13,335	200,026	45	52 14 0	34,919	1,840,23
10	38 18 0	22,137	861,129	46	52 14 0	32,531	1,714,38
11	47 13 1	26,533	1,264,629	47	55 19 0	33.735	1,887,47
12	47 13 1	23,610	1,125,312	4 8	55 19 0	18,912	1,058,12
13	47 13 1	37,167	1,771,472	49	55 19 0	33,715	1,886,35
14	47 0 I	18,670	877,723	50	55 19 0	32,648	1,826,65
15	47 0 1	23,993	1,127,971	51	55 19 0	33,000	1,846,35
16	47 O I	23,698	1,114,102	221	60 13 3	36,333	2,204,95
17	31 13 2	10,972	347,538	222	60 13 3	37,008	2,245,92
18	47 13 1	35,559	1,694,831	223	60 13 3	31,768	1,927,92
19	47 13 1	27,259	1,299,232	- 224	60 13 3	35,507	2,154,83
20	33 6 2	18,152	604,915	231	60 13 3	7,593	460,80
21	47 13 1	25,328	1,207,196	232	60 13 3	6,413	389,18
22	47 13 1	34,410	1,640,067	233	60 13 3	5,096	309,26
23 .	48 6 I	14,853	717,586	234	60 13 3	5,594	339,48
24	48 6 1	23,052	1,113,700	235	60 13 3	3,303	200,45
	48 6 I	26,025	1,257,333	236	60 13 3	2,555	155,05
25 26	48 6 I	21,195	1,023,983	237	60 13 3	1,904	115,54
27	55 7 I	24.435	1,352,783	238	60 13 3	1,247	77,67
28	55 7 I	20,488	1,134,267	261	59 19 2	3,643	218,48
29 -	55 7 1	33.791	1,870,754	262	59 19 2	6,165	369,74
30	55 7 1	40,226	2,227,012	263	59 19 2	6,618	396,91
31	52 14 0	26,914	1,418,368	264	59 19 2	7,518	450,80
32	52 14 0	55,605	2,930,383	291	52 14 0	25,500	1,343,8
33	52 14 0	33,947	1,789,007	į '	<u>-</u>		
34	52 14 0	30,823	1,624.372	Total	3,454 2 0	1,629,509	82,579,3
35 36	52 14 0	32,657	1,721,024		3,101		,0,9,0
36	52 14 0	26,203	1,380,898	Averages	50 16 0	23,963	1,214,40

Contractor's Engines are not included.
Mileage, South-west

No. 52—continued.

From the figures in the foregoing tables the following results are derived:—

		1 - 1		
		South and West.	North.	Totals.
LOCOMOTIVES.				• .
Number of engines and tenders— Passenger (running Goods do.	No.	118	23 45	. 141 148
Total		221	68	289
Gross weight of engines and tenders—				60
Passenger (Average Goods do.	tons ,,	5,773 5,648	1,005 1,890	6,778 7,538
Total	,,	11,421	2,895	14,316
• .				
Mileage of engines and tenders— Passenger	miles	1,985,245	515,287	2,500,532
Goods	۰,	3,689,759	1,114,222	4,803,981
Total	,,	5,675,004	1,629,509	7,304 513
			-	
Gross tonnage—	ŀ	• .	•	
Passenger Goods		107,006,581 198,881,500	26,113,300 56,466,014	133,119,881 255,347,514
Total	. ,,	305,888,081	82,579,314	388,467,395
Passenger and Goods Stock.				
Number of vehicles running during the year-	3.7			
Number of vehicles running during the year— Passenger * Goods	No. ,,	427 4,472	173 3,645	600 8,117
Passenger	.,,		173 3,645 3,818	
Passenger * Goods	,,	4,472	3,645	8,117
Passenger * Goods Total Weight of Do.—	,,	4,472	3,645	8,117
Passenger * Goods Total Weight of Do.— Passenger * Goods	tons	4,899 4,899 4,022 22,184	3,645 3,818 1,262 17,724	8,117 8,718 5,284 39,908
Passenger * Goods Total Weight of Do.— Passenger	tons	4,472 4,899	3,645 3,818	8,117 8,718 5,284 39,908
Passenger * Goods Total Weight of Do.— Passenger * Goods Total	tons	4,899 4,899 4,022 22,184	3,645 3,818 1,262 17,724	8,117 8,718 5,284 39,908
Passenger * Goods Total Weight of Do.— Passenger * Goods Total	tons	4,899 4,899 4,022 22,184	3,645 3,818 1,262 17,724	8,117 8,718 5,284 39,908 45,192
Passenger * Goods Total Weight of Do.— Passenger * Goods Total * Total mileage of vehicles— Passenger	tons " miles	4,472 4,899 4,022 22,184 26,206	3,645 3,818 1,262 17,724 18,986	5,284 39,908 45,192 14,425,268 63,052,268
Passenger * Goods Total Weight of Do.— Passenger * Goods Total * Total mileage of vehicles— Passenger Goods	tons	4,472 4,899 4,022 22,184 26,206	3,645 3,818 1,262 17,724 18,986	8,117 8,718 5,284 39,908 45,192 14,425,268 63,052,268
Passenger * Goods Total Weight of Do.— Passenger * Goods * Total mileage of vehicles— Passenger Goods Total Gross dead weight of vehicles—	tons	4,472 4,899 4,022 22,184 26,206 11,140,716 50,509,424 61,650,140	3,645 3,818 1,262 17,724 18,986 3,284,552 12,542,844 15,827,396	8,117 8,718 5,284 39,908 45,192 14,425,268 63,052,268 77,477,536
Passenger * Goods Total Weight of Do.— Passenger * Goods * Total mileage of vehicles— Passenger Goods Total	tons miles tons	4,472 4,899 4,022 22,184 26,206	3,645 3,818 1,262 17,724 18,986	8,117

^{*} The mileage does not include ballast waggons, but merely vehicles used for traffic purposes; and as many of them were in use for only a part of the year their average number and weight are taken as the factors in the above calculations

No. 52—continued.

•		South and West.	North.	Totals.
· Passenger and Goods Stock—continued.			•	
Tonnage of load carried in vehicles— Passenger Goods	No.	642,260 1,200,136	56,707 . 1,664,220	698,967 2,864,356
Total		1,842,396	1,720,927	3,563,323
Total ton mileage of load— Passenger	33 33	8,860,551 121,546,264	1,744,680 33,744,626	10,605,231 155,290,890
Total		130,406,815	35,489,306	165,896,121
Total tonnage of vehicles empty and loaded— Passenger	tons	119,988,973 396,592,101 516,581,074	26,855,451 99,469,766 126,325,217	146,844,424 496,061,867 642,906,291
Total tonnage of engines and vehicles loaded— Passenger Goods))))	226,995,554 595,473,601 822,469,155	52,968,751 155,935,780 208,904,531	279,964,305 751,409,381 1,031,373,686
	,,			7 3 737 37
		-		
Gross earnings— Passenger and Coaching Goods	£	539,503 939,883	122,248 329,830	661,751 1,269,713
Total	,,	1,479,386	452,078	1,931,464
Total working expenses		932,209	245,579	1,177,788
Net earnings		547,177	206,499	753,676
· ·			-	-
Results :	:			
AVERAGE EARNINGS PER TON PER MILE— PASSENGER GOODS	d. "	·57° ·379		·567 ·405
ALL TRAFFIC.		.431	. 519	'449
WORKING EXPENSES PER TON PER MILE	2,2	272	.585	·274
NET EARNINGS PER TON PER MILE	,,	*159	*237	175

No. 53.

Merchandise Traffic Rates, 1881 and 1883, showing rates per ton.

. Autiolog of Mus 00 -		Fe		881. JARY 3.				_	*1882. TOBER 4.			*1883. UNE 25.
Articles of Traffic.	Class.	15 miles.		Exceedir	ng 15 miles.	Class.	nile	s.	Exceeding 15 miles.	Class.	miles.	Exceeding 15 miles.
Acids—in cases and carboys		s. d.	8	er mile. d. 9			s. (1.	per mile. s. d.		s. d.	per mile. s. d.
Aerated Waters		7 0 9 0 2 0	0	5 7 11		A	2	0	o 1½ to 75 miles	3		· -
Ale and Porter—in bulk Ammunition		9 0	0	7 9			•••			2	9 0	0 7
Bark	A	2 0	,	114		A	2	0	o 1½ to 75 ,, o 1 over 75 ,,	-		
Battens	В • А	3 0 2 0		ı⅓ o n	or distances ver 40 miles, ninimum 28. od.	} **	2 †2		0 18 to 75 ,,			
Beet-root	Į.	2 0		14	••••••	A	2	0	o 18 to 75 ,,			
Bicycles	\int_{0}^{4}	5 0		9 2½		A	2 × 50					
Boats—80 cubic feet per ton Boilers	2	7 O	0	5 5					,	-		
Do. Plates		7 0 2 0		5 14		A	2	0	o 1½ to 75 ,, o 1 over 75 ,,			
Bottles—empty, in cases or crates.		4 0	1	$2\frac{1}{4}$		В	3	0	0 2			
Bran	l	2 0		_		A	2 I		o 18 to 75 ,,			
Bricks —4 ton lots	A	2 0	(14		MIS.	1	U	0 1½ 15 to 35 ,, 0 1 35 to 150 ,, 0 0½ 150 to 250 ,, 0 0½ over 250 ,,			- vs
Cabbages	A	2 0		. 1 1		A	2	٥	o 11 to 75 ,, o 1 over 75 ,,			
Candied FruittoSydney Carpentry Carrots	3	5 0 9 0 2 0		7			3		0 2			
Casks—new, empty	C	4 0	,	2]		В	3	0	0 1 over 75 ,,			
Cases do	I	4 0 6 0	(4		B B B		0	0 2 0 2	,		
Charcoal and coke—in bags Chicory Root		3 0	1,0			Ā	3 2	0	0 2 0 1½ to 75 ,, 0 1 over 75 ,,			
Clay—4 ton lots	Mis.	1 6		0	o 35 miles; ver 35 miles, d. per ton per mile.		I.	6	0 1 1 15 to 35 ,, 0 1 35 to 150 ,, 0 0 1 150 to 250 ,, 0 0 1 2 over 250 ,,		:	
Coal. (See page 161.) Do. Waggons — new on wheels to collieries.					r mile each; ninimum,5s.				,			
Coke		4 0 5 0		2½ 01 2½ 01 2 d	ver 300 miles to per cent. liscount, ninimum £2		3	0	0 2 0 2			,
Copper Ingots Do. Ore—4 ton lots		4 0 2 0		2 1 2 4	ıs. ıd.	B Mis.	3	o 6	o 1 35 to 150 ,, o 0\frac{3}{4} 150 to 250 ,,	`		
Dairy Produce Drain Pipes		7 0		٠.	••••••	 A	·		o o½ over 250 ,, o 1½ to 75 ,,	ī	6 0	0 4
Dynamite—owners' risk, in casks or cases.		-		o•pe	er ton per aile.				o i over 75 "			
FeathersFelloes	3 B A	9 0 3 0 2 0	c	14 0	or distances ver 40 miles, ninimum 6s. d.	} A	2	0	o 18 to 75 ,,			

Marked thus * subject to the following allowances:—10 per cent on the rate per mile for every mile beyond 100; 20 per cent on the rate per mile for every mile beyond 150; 40 per cent on the rate per mile for every mile beyond 200.

† Distances not exceeding 340 miles.

No. 53—continued. Merchandise Traffic Rates—continued.

			*1881 BRUAR			0	*1882. CTOBER 4.			*1883. UNE 25.
Articles of Traffic.	Class.	15 miles.	Exce	eeding 15 miles.	Class.	15 miles.	Exceeding 15 miles.	Class.	15 miles.	Exceeding 15 miles.
Fireclay Blocks	A Mis.	8. d. 2 o	per n s. d. o 1	_	Mis.	8. d. 2 o 1 6	The second secon			
Fireworks Fish		12 0	0 9	27 / 2 / 2	Ì					· .
Flour	A	2 0	0 1		A	2 0	o. 1\frac{1}{8} to 75 ,, o i over 75 ,,			,
Flower-pots Fruit—Orchard	C A	4 0 2 0		<u> </u>		3 0 2 0	0 2		-	
Furniture—in cases	3 4	9 0	0 7 0 9				· · · · · · · · · · · · · · · · · · ·			
Garden Produce—not otherwise specified.	· A	2 0	0 1	<u>1</u>		2 0	o 1½ to 75 ,, o 1 over 75 ,,			
Glue Pieces	B	4 0 3 0		1 1		3 0	0 2			
Grain—all kinds	A	2 0	0 .1	ł	A	2 0	o I over 75 ,, o I to 75 ,, o I over 75 ,,			
Green Fodder	A	2 0	ОІ	1 4	1	2 0		·	ľ	•
Guano and Artificial Manures		3 0		½ . ••••••••••	A	2 0	o 1½ to 75 ,, o 1 over 75 ,,		i	
Gunpowder (owner's risk)—in caêks.			ı o	per ton per mile.						
Hats—in cases Hardware Hay. (See page 162.)	Ů	12 0 9 0	7		ļ					
Hides (wet)		3 0		1	1		0 1 to 75 ,,			
,, (dry) Hoofs	A A	5 0 2 0	0 2	1 1	A A	3 0	o 18 to 75 miles			,
Horns	A	2 0	0 1	1	A	2 0				
Iron—Bar, Rod, Angle, and T Boiler Plate Corrugated—in cases Girders Pig and Scrap—to smelting works.	2 2 2 2 Mis.	7 0 7 0 7 0 7 0 1 6	,	to 35 miles; over 35 miles,		6 o	o 4			
Pig and Scrap Do:—Tanks, 160 c. ft. per ton —Galvanized iron.	D 2	5 0 7 0	0 2	······································	Mis.	16	0 1½ to 35 ,, 0 1 to 150 ,, 0 0½ to 250 ,, 0 0½ over 250 ,,			
Do.—Wire in bundles Do.—Wheels and Axles— Railway.	2 2	7 0	0 5	***************************************	r	6 0				
Do.—Rails and Chairs Do.—Castings Do.—Pig, Pipes, and rough Castings, from the manufactory.		6 o 7 o 1 6	0 4 0 5 0 1			ı 6	o 1\frac{1}{4} to 35 miles o 1 to 150 ,, o 0\frac{3}{4} to 250 ,, o 0\frac{3}{2} over 250 ,,			
Do.—Screws and Washers— Galvanized.	2	7 0	0 5				, , , ,			
Iron Nails Ironmongery Ironstone	2 3 Mis.	7 ° 9 ° 1 6	0 5 0 7 0 1	to 35 miles; over35 miles, id. per ton		ı 6	0 1 to 150 ,, 0 0\frac{3}{4} to 250 ,,			
Jamsto Sydney Joinery	D 3	5 0 9 0	0 2	per mile.	_	3 0	o o½ over 250 "			
Kerosene Oilto Sydney Lead—Pig or Sheet Leatherto Sydney	2	5 ° 7 ° 6 ° 0	0 2 0 5	-	1	6 0	0.4			

Marked thus", subject to the following allowances:—10 per cent. on the rate per mile for every mile beyond 100; 20 per cent. on the rate per mile for every mile beyond 150; 40 per cent. on the rate per mile for every mile beyond 200.

No. 53—continued.

MERCHANDISE Traffic Rates—continued.

Articles of Traffic.		FE		881. UARY				. 0		882. BER 4.			#1883. UNE 25.	
	Class.	15 miles.		Excee	eding 15 miles.	Class.	m	15 iles.	E	exceeding 15 miles.	Class.	niles.	Exceed	ling 15 miles.
Lamps—Street, Door, or Hall	3 B	s. d. 9 o 3 o	ŝ	er m . d. . 7	ile.	. A		d.	8.	or mile. d. 1 $\frac{1}{8}$ to 75 miles 1 over 75 ,,				
Lick Blocks	С	4 0	0	$2\frac{1}{4}$	max. £2 10s.	В	3	0	0					
Lime-4-ton lots	В	3 0	0	I ½	5d. per ton.	A	2	0	0	1% to 75 miles				
Limestone	Mis.	r 6	0	14	to 35 miles; over 35 miles, rd.	Mis.	I	6	0 0	I over 75 ,, 1\frac{1}{4} \to 35 ,, I to 150 ,, 0\frac{3}{4} \to 250 ,,		-		
Lithofracteur or other explo- sives—owner's risk—in casks or cases.		•••	I	0	per ton per mile.				0	0½ over 250 "			-	
Lucerne—Seed		6 0	0	4										
Machinery of all kinds Malt Do. in tanks	, I	9 0 6 0	0	7 4	***********	2	9	0	0	7	I	6 o	. 0 4	
Malt Tanks—Square & empty Mangold Wurzel	3 A	9 0		7 1社	************	A	2	0	٥	1½ to 75 miles			•	
Manurė, loose (4-ton lots)		1 6	٥	14	to 35 miles; over 35 miles,	•	ı	6	0	1 over 75 ,, 11 to 35 ,, 1 to 150 ,,			٠	,
Manure—Artificial	В	3 0	0	. I ¹ / ₂	id. per ton per mile.		2	0	0	o\frac{3}{4} \to 250 , o\frac{1}{2} \text{ over 250 }, I\frac{1}{8} \to 75 \text{ miles} I \text{ over 75 },				
Marble—Undressed (4-ton lots.)	. B	3 0,	0	1 ½	•••••••••••••••••••••••••••••••••••••••	Mis.	ı	6	0	1½ to 35 miles 1 to 150 ,,				
Meal	A	2 0	0	0.1 4	************	A	2	o	0	or to 250 ,, or over 250 ,, or to 75 ,, over 75 ,,				•
Measurement Goods, 80 cubic feet to ton. Melons		6 0		4 114	••••••	A	2	0	0	1½ to 75				
Millinery—in cases Mirrors Muriate of Lime Musical Instruments.	4	12 0 12 0 6 0 12 0	.0	9 9 4 9	•				0	over 75 "				
Naphtha	4	12 0	0	.9			ļ							
Offal	В	3 0	0	11/2		Mis.	I	6	0	1½ to 35 ,, 1 to 150 ,, 0½ to 250 ,, 0½ over 250 ,,			,	
Oil Cake	D	5 0	0	21/2	************	В	3	o	0	2				
Opium Ores—Crude (4-ton lots)	4 A	12 O 2 O		9 14		Mis.	ı	6	0	1\frac{1}{4} to 35 ,, 1 to 150 ,, 0\frac{3}{4} to 250 ,, 0\frac{1}{2} over 250 ,,				
Oysters	Mis.		0	3	per ton per mile.					<u> </u>				
	В	3 0	0	1 ½					0	11 to 75 miles				
Palings	· A	2 0	0	1 18	For distances over 40 miles min. 6s. 2d.		2	0	0	i over 75 "				
Paper	C under 2	4 o 7 o	0	21/2 5	•••••	В	3	0	0	2				
Papier-maché Goods Perambulators	3 4	9 0 12 0	0	7 9								•		
Perfumery		9 0 12 0	0	,										
Pier Glasses Pitch		12 O 6 O	0	9										
Plants (in pots and cases)	3	90	0	ż						i		i		•
Plated Goods Plate Glass Pollard	3 4 A	9 0 12 0 2 0	0	9.		A	2	0	0	1 to 75 ,,				
Portable Engines	3	9 0	0	7					Ò	over 75 "				

Marked thus * subject to the following allowances:—10 per cent. on the rate per mile for every mile beyond 100; 20 per cent. on the rate per mile for every mile beyond 150; 40 per cent. on the rate per mile for every mile beyond 200.

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No. 53—continued. MERCHANDISE Traffic Rates—continued.

			*1881. BRUARY 3.		0	*1882. CTOBER 4.			*1883. JNE 25.
Articles of Traffic.	Class.	niles.	Exceeding 15 miles.	Class.	15 miles.	Exceeding 15 miles.	Class.	15 miles.	Exceeding 15 miles.
	Ŗ	s. d. 3 o	per mile. s. d. o 1½ For distances over 40miles,		s. d. 2 0.				
Posts and Rails	A A	2 0	min. 6s. 2d. 0 1½ 0 1½	A	2 0	, altopia			,
Potatoes	л. 2	7 0	o 5 In flocks, 6d.			o i over 75 ,,			
, ,			per truck per mile to 100 miles; over 100, 4d.					-	
Preserved MeatTo Sydney	Ŗ	3.0	O I½	Ą		o 18 to 75 ,, o 1 over 75 ,,			
Pumpkins	Ą	2 0	о г¼	A	2 0	o 18 to 75 ,, o 1 over 75 ,,		;	
Quicksilver	í	6 o	o 4			. , , , ,			
Railway Materials	A.	6 0 2 0	0 4 0 1½		2 0	o 1½ to 75 ,, o 1 over 75 ,,			
Figure	A	2 0	o 1½ less than 50 per cent. copper.		1 б	of copper. o 1½ to 35 miles o 1 to 150 ,		•	
Regulus (4-ton lots)	В	3 0	o 1½ containing over 50 per cent.	A	2 0	o o\frac{3}{4} to 250 ,, o o\frac{1}{2} over 250 ,, Containing over 33 per cent. of copper. o I\frac{1}{8} to 75 miles o I over 75 ,,			
Resin		6 o 1 6	o 4 o 1½ To 35 miles; over 35miles, 1d.	Mis.	ı 6				
Salt—Rock and Calcutta	С	4 0	0 2½ Max. £2/10/5	В	3 0				-
Salt-Dairy and Meat-curing	D	5 0	per ton.	В	3 0	0 2			
Sand	· Mis.	т 6	o 1½ to 35 miles; over 35 miles, id.	Mis.	1 б	0 1 to 150 ,, 0 0\frac{3}{4} to 250 ,,			
Sawdust	A	2 0	0 I¼	A	2 0	o o½ over 250 ,, o 1½ to 75 ,, o 1 over 75 ,,			
Scientific Instruments Sewing-Machines (packed) Do. (unpacked)	4	12 0 12 0	0 9	3 4	12 0	0 9 .			
Seed Grass		5 0	0 4	3 A	9 0	1 ' 1 .	-		
Do. Millet Shale—Kerosene			From Hartley Siding and Mittagong to	Mis.	ı 6	o 1. over 75 "			•
Sheepskins	+C	4 0	Sydney, £2 per truck.		3 0	o o½ to 250 ,, o o½ over250 ,,			
Shingles	В	3 0	O I½		2 0				
Silk Goods	4	9 0 12 0 4 0	0 7 0 9 0 2½		2 0	o 1½ to 75 ,, o 1 over 75 ,,			
Sleepers—Railway Soap(except scented and fancy)		4 0 7 0		. 1	3 C	0 2			
Soda—Crystals and Caustic		5 0	0 2½	. В	3 0	0 0 2 0 0 1½ to 75 ,,			
Spokes and Shafts—Undressed	В	3 0	over 40 miles min. 6s. 2d.	,		o 1 over 75 "			
Stocks	۱ .	2 0	I 777 79 4	,	2 0	o 1½ to 75 ,, o 1 over 75 ,,			
Stone undressed	Mis.	1 б		; Mis.	1 6	0 1 to 150 ,, 0 0 to 250 ,,			
Do. carved and Gravestone	8 2	7 0	0 5	ŀ		o 0½ over 250 "			

Marked thus * subject to the following allowances:—10 per cent. on the rate per mile for every mile-beyond 100; 20 per cent. on the rate per mile for every mile beyond 150; 30 per cent. on the rate per mile for every mile beyond 200.

† If loose or insecure, D rates.

No. 53—continued. Merchandise Traffic Rates—continued.

Articles of Traffic.		FE	81* .uaa	81. ARY 3.		Oc		382. BER 4.			J	*1883. UNE 25.
- 1	Class.	niles.	E	exceeding 15 miles.	Class.	niles.	F	Exceeding 15 m	iles.	Class.	15 miles.	Exceeding 15 miles.
Stone cut for Building or Grindstones.	D	s. d.	s.	mile. d. 2½	Mis:	s. d.	s. 0 0	mile. d. 1½ to 35 1 to 150 0½ to 250 0½ over 250	1			:
Straw (See page 162.) Sugar	2 ′.	7 0	0	5 Intruck loads (6 tons), 2s. per truck per mile.					/^			
Sulphuric Acid	I	6 0	0	4								
Tallow	I .	6 o	0	4		3 0	0	2 .		-		-
Threshing Machines	А В	2 0	0	7	A	2 0		18 to 75 1 over 75	"	,	: i	
Tiles—Tesselated and Ornamental. Tiles, Earthenware	В	5 °	0	$2\frac{1}{2}$	В А	3 0	0	2 11 to 75				
Timber—Undressed	В	3 0	Ha Ot Ot Fo:	1½ irdwood, 30 ft. to ion. her than hard- wood, 40 ft. to ton. r distances over io miles, min. is. 2d.	A	2 0	0	over 75		,		er e se se se e e e e e e e e e e e e e e
Do. Sawn	D C	2 0 5 0 4 0	0	$1\frac{1}{4}$ $2\frac{1}{2}$	A B	2 × 25 % 3 °	0 0	I over 75	"			
Tin-plates Tin Smelted Tobacco—Colonial Leaf	C B	7 0 4 0 3 0	0	5 2 ¹ / ₄ 1 ¹ / ₂	B A	3 0 2 0	0	2 1 to 75	,,		,	
Toys in cases Tricycles Turnips	3 4 A	9 0 12 0 2 0		7 9 11	A	2 0		r over 75	1			
Velocipedes	4	12 0	0	9			0	1 0/61 75	"	ŀ	1	
Whiting	D 3 1	5 0 9 0 6 0	0	2½	ВВ	3 0	0	2				
Zinc	2	7 0	o	5				•				•
Note—All articles not enumerated above are carried as follows.	3.	9 0	0	7	,	,			ŀ			

Marked thus * subject to the following allowances:—10 per cent. on the rate per mile for every mile beyond 100; 20 per cent. on the rate per mile for every mile beyond 200.

No. 53-continued.

3 October, 1881-Live Stock Rates and Conditions.

SMALL CONSIGNMENTS.

I Truck, i.e., 4 Cows or Oxen, or 10 Calves, or 40 Sheep, or 30 Pigs.	1 Truck, i.e.; 2 Cows or Oxen, or 5 Calves, or 20 Sheep, or 15 pigs.	Single Cow or Ox.	Sheep or Pigs, when less than ½ Truck.	Calves, when less than ‡ Truck.
6 d. per mile	4d. per mile	3d. p e mile	½d. each per mile	1d. each per mile.
Minimum, 10s	Minimum, 7s. 6d	Min., 7s. 6d. each	Min., 1s. 6d. each	Minimum, 2s. each.

When the number of animals or the space occupied exceeds the limit for \(\frac{1}{4} \) or \(\frac{1}{2} \) truck, each one in excess will be charged at the mileage rates enumerated above for single animals until the \(\frac{1}{2} \) or full truck rate, as the case may be, is reached.

In ascertaining what portion of a truck is to be charged for, i.e., \frac{1}{4}, \frac{1}{2}, or full truck, regard will be had to the space actually occupied more than to the number of animals; but in no case must the number of animals stated above be exceeded.

Mixed stock will be carried together in the same truck, provided the whole consignment belongs to one person, and the Commissioner is relieved of all responsibility. When mixed stock cannot be loaded together, each kind will be charged for separately.

When the charge per head for Live Stock exceeds that for \(\frac{1}{4}\) truck, or when the charge for a part truck exceeds that for a full one, only the lesser amount will be collected.

Bulls.

The charge for Bulls is 7d. each per mile; if more than one in a truck, $4\frac{1}{2}$ d. each per mile for $\frac{1}{2}$ truck and upwards, Cattle rates. Minimum, 12s. 6d.

VALUABLE RAMS AND EWES.

If less than \(\frac{1}{2} \) a truck load, will be charged 2d. each per mile; for \(\frac{1}{2} \) a truck and upwards, Sheep rates. Minimum, 5s.

Horses.

See full truck rates. No less charge than for a full truck load will be made for any number.

When Live Stock is returned from Sydney or Homebush to Country Stations, in those neighbourhoods to which Cattle Trucks and Sheep Vans are being sent empty, half the above rates will be charged, provided the owners wait the requirements of the Department, but not otherwise.

Herds, Flocks, &c., when in consignments of not less than one full Truck load.

GREAT SOUTHERN, WESTERN, AND RICHMOND LINES.

CATTLE

Will be conveyed from the undermentioned Stations to Homebush, at the following rates per Truck:—

Stations.	Rate.	Stations.	Rate.
Darlington Hulong Narrandera Coolaman Albury Ettamogah Bowna Gerogery Hanging Rock Wagga Wagga Junee Cootamundra Harden Binalong Bowning Yass		Gunning Breadalbane Goulburn Marulan Moss Vale Bowral Mittagong Picton Dubbo Wellington Orange Blayney Bathurst Wallerawang Mount Victoria	£ s. d. 5 1 10 4 13 10 4 13 16 4 18 8 2 14 8 2 12 8 1 16 8 6 16 8 5 15 4 4 11 10 3 11 4 2 12 8

Other distances to be charged—For the first 40 miles, 10d. per truck per mile; for every mile exceeding 40 and not exceeding 100, 8d. per truck per mile; for every mile exceeding 100 and not exceeding 200, 6d. per truck per mile; for every mile over 200, 4d. per truck per mile. Minimum charge, 15s. per truck.

No. 53-continued.

Live Stock Rates and Conditions-continued.

SHEEP

Will be conveyed from the undermentioned Stations to Homebush, at the following rates per Truck :-

Stations.	Rate.	Stations.	Rate.
Darlington Hulong. Narrandera Coolaman. Albury Ettamogah Bowna Gerogery Hanging Rock Wagga Wagga Junee Cootamundra Harden Binalong Bowning Yass	7 7 6 6 19 4 6 8 6 7 10 8 7 9 3 7 8 4 7 5 5 6 13 6 6 6 9 6 1 10 5 11 11 5 4 7 4 18 9	Gunning Breadalbane Goulburn Marulan Moss Vale Bowral Mittagong Picton Dubbo Wellington Orange Blayney Bathurst Wallerawang Mount Victoria	3 18 9 3 13 1 3 5 7 2 12 4 2 9 4 2 7 10 1 15 10 5 19 2 5 10 5 4 13 5 4 6 9 3 17 3

Other distances to be charged—For the first 40 miles, 10d. per truck per mile; for every mile exceeding 40 and not exceeding 100, 6d. per truck per mile; for every mile exceeding 100 and not exceeding 150, 4½d. per truck per mile; for every mile exceeding 150 and not exceeding 200, 4d. per truck per mile; for every mile cver 200, 3½d. per truck per mile. For single-decked truck, only two-thirds of these rates will be charged. Minimum charge, 15s. per truck.

GREAT NORTHERN LINE.

CATTLE

Will be conveyed between the undermentioned Stations, at the following rates per Truck:-

From	Newcastle.	East Maitland.	West Maitland.	Wollombi Road.	Lochinvar.
Gunnedah Breeza Tamworth Werris Creek Quirindi. Willow-tree Scone Musclebrook	£ s. d. 6 1 4 5 8 4 5 14 4 5 0 10 4 15 4 4 10 4 3 10 8 3 0 0	£ s. d. 5 12 4 4 19 4 5 5 4 4 11 10 4 6 4 4 1 4 2 18 8 2 8 0	£ s. d. 5 11 4 4 18 4 5 4 4 4 10 10 4 5 4 4 0 4 2 17 4 2 6 8	£ s. d. 5 10 4 4 17 4 5 3 4 4 9 10 4 4 4 3 19 4 2 16 0 2 5 4	£ s. d. 5 8 4 4 15 4 5 1 4 4 7 10 4 2 4 3 17 4 2 13 4 2 2 8

Other distances to be charged—For the first 40 miles, 10d. per truck per mile; for every mile exceeding 40 and not exceeding 100, 8d. per truck per mile; for every mile exceeding 100 and not exceeding 200, 6d. per truck per mile; for every mile over 200, 4d. per truck per mile. Minimum charge, 15s. per truck.

SHEEP

Will be conveyed between the undermentioned Stations at the following rates per Truck :-

Stations from	Newcastle.	East Maitland.	West Maitland.	Wollombi Road,	Lochinvar.
Gunnedah Breeza Tamworth Werris Creek Quirindi Willow-tree Scone Musclebrook	£ s. d. 4 17 5 4 8 9 4 12 9 4 3 9 3 19 10 3 16 1 3 1 4 2 13 4	£ s. d. 4 11 5 4 2 9 4 6 9 3 17 3 3 13 1 3 9 4 2 12 4 2 4 4	£ s. d. 4 10 9 4 2 1 4 6 1 3 16 6 3 12 4 3 8 7 2 11 4 2 3 4	£ s. d. 4 10 1 4 1 5 4 5 5 3 15 9 3 11 7 3 7 10 2 10 4 2 2 4	£ s. d. 4 8 9 3 19 5 4 4 1 3 14 3 3 10 1 3 6 4 2 8 4 2 0 4

Other distances to be charged—For the first 40 miles, 10d. per truck per mile; for every mile exceeding 40 and not exceeding 100, 6d. per truck per mile; for every mile exceeding 100 and not exceeding 150, 4½d. per truck per mile; for every mile exceeding 150 and not exceeding 200, 4d. per truck per mile; for every mile over 200, 3½d. per truck per mile. For single-decked truck only two-thirds of these rates will be charged. Minimum charge, 15s. per truck.

GREAT SOUTHERN, WESTERN, AND RICHMOND, AND NORTHERN LINES.

Horses.

The Commissioner will carry Horses in Cattle Trucks if requested to do so, but only under special contract, relieving him of all responsibility. The charge for horses so carried will be the same as for cattle in full truck loads.

Pigs-Same as Cattle. Minimum, 15s.

Under the foregoing Herd and Flock Rates for Cattle, Sheep, Horses, and Pigs, no less charge than for one full truck will be made for each and every truck used.

No. 53--co'ntinued.

4th October, 1882.

Mixed stock will be carried together in the same truck, provided the whole consignment belongs to one person, and the issioner is relieved of all responsibility. When mixed stock cannot be loaded together each kind will be charged for

Mixed stock will be carried together in the same truck, provided the whole consignment belongs to one person, and the Commissioner is relieved of all responsibility. When mixed stock cannot be loaded together each kind will be charged for separately with the following exception:

On Thursdays single animals conveyed to Sydney in the same trucks, although belonging to different owners, will be charged at a proportion of \$\frac{4}{2}\$, \$\frac{1}{2}\$, or full truck rate, plus 25 per cent.; for example, should there be two cows, each owner will be charged half of the \$\frac{1}{4}\$ truck rate, plus 25 per cent., and should there be three animals, the owners will be charged the \$\frac{1}{2}\$ truck rate equally between them, plus 25 per cent. It is absolutely necessary that each animal be legibly addressed.

When the charge per head for live stock exceeds that for a quarter truck, or when the charge for a part truck on market days exceeds that for a full one, only the lesser amount will be collected.

Herds, Flocks, &c., when in consignments of not less than one full truck load.

GREAT SOUTHERN, WESTERN, AND RICHMOND LINES.

CATTLE

Will be conveyed from the undermentioned Stations to Homebush, at the following rates per Truck:-

Stations.	Rate.	Stations.	Rate.
Hay Carrathool Darlington Hulong Narrandera Coolaman Albury Ettàmogah Bowna Gerogery Hanging Rock Bomen Jun e Junction Cootamundra Harden Binalong Bowning	£ s. d. 10 5 0 9 14 0 9 2 4 8 19 0 8 9 8 7 17 4 9 2 8 9 1 0 9 0 0 8 16 8 8 3 0 7 15 4 7 9 8 6 18 4 6 10 0 6 3 4 5 16 4	Yass Gunning Breadalbane Goulburn Marulan Mo's Vale Bowral Mittagong Picton Dubbo Wellington Orange Blayney Bathurt Capertee Wallerawang Mount Victoria	£ s. d. 5 12 10 5 1 10 4 13 10 4 4 0 3 10 8 2 12 0 2 8 0 2 6 0 1 10 0 7 6 8 6 16 8 5 15 4 5 5 4 4 11 4 3 19 4 3 4 8 2 6 0

Other distances to be charged—For the first 140 miles, 8d. per truck per mile; from 140 to 200 miles, 6d. per truck per mile; every additional mile, 4d.

SHEEP

Will be conveyed from the undermentioned Stations to Homebush, at the following rates per truck:-

Stations.	Rate.	Stations.	Rate.
Hay Carrathool Darlington Hulong Narrandera Coolaman Albury Ettamogan Bowna Gerogery Hanging Rock Bomen Junee Junction Cootamundra Harden Binalong Bowning	# s. d. 8 10 3 8 0 7 7 10 5 7 7 6 6 19 4 6 8 6 7 10 8 7 9 3 7 8 4 7 5 6 6 13 6 6 6 9 6 1 10 5 11 11 5 4 7 4 18 9 4 14 1	Yass Gunning Breadalbane. Goulburn Marulan Moss Vale Bowral Mittagong Picton Dubbo Wellington Orange Blayney Bathurst Capertee Wallerawang Mount Victoria	2 8 0 2 6 0 1 10 0 5 19 2 5 10 5 4 13 5 4 6 9 3 17 3 3 10 6

Other distances to be charged—For the first 80 miles, 8d. per truck per mile; from 80 to 100, 6d.; from 100 to 50, 42d.; and from 150 to 200, 4d. per mile. Every additional mile, 32d.

GREAT NORTHERN LINE.

CATTLE

Will be conveyed between the undermentioned Stations, at the following rates per truck :-

From	Newcastle.	East Maitland.	West Maitland.	Wollombi Road.	Lochinvar.	
Gunnedah Breeza Tamworth Werris Creek Quirindi Willow-tree Scone Muswellbrook	£ s. d. 6 1 4 5 8 4 5 14 4 5 0 10 4 15 4 4 9 4 3 4 0 2 13 4	£ s. d. 5 12 4 4 19 4 5 5 4 4 11 4 4 4 0 3 17 4 2 12 0 2 1 4	£ s. d. 5 11 4 4 18 4 5 4 4 4 10 0 4 2 8 3 16 0 2 10 8 2 0 0	£ s. d. 5 10 4 4 17 4 5 3 4 4 8 8 4 1 4 3 14 8 2 9 4 1 18 8	£ s. d. 5 8 4 4 15 4 5 1 4 4 6 0 3 18 8 3 12 0 2 6 8 1 16 0	

Other distances to be charged—For the first 140 miles, 8d. per truck per mile; from 140 to 200 miles, 6d. per truck per mile; every additional mile, 4d. Minimum charge, 15s. per truck.

No. 53-continued.

SHEEP

Will be conveyed between the undermentioned Stations, at the following rates per Truck:—

Stations from	Newcastle.	East Maitland.	West Maitland.	Wollombi Road.	Lochinvar.	
Gunnedah. Breeza Tamworth Werris Creek Quirindi Willow-tree Scone Musclebrook	£ s. d. 4 17 5 4 8 9 4 12 9 4 3 9 3 19 10 3 16 1 3 1 4 2 13 4	£ s. d. 4 11 5 4 2 9 4 6 9 3 17 3 3 12 10 3 9 4 2 12 0 2 1 4	£ s. d. 4 10 9 4 2 1 4 6 1 3 16 6 3 12 4 3 8 7 2 10 8 2 0 0	£ s. d. 4 10 1 4 1 4 5 5 3 15 9 3 11 7 3 7 10 2 9 0 1 18 8	£ s. d. 4 8 9 3 19 10 4 7 5 3 15 3 3 10 1 3 6 4 2 6 4 1 16 0	

Other distances to be charged—For the first 80 miles, 8d. per truck per mile; from 80 to 100 miles, 6d. per truck per mile; from 100 to 150 miles, 4½d. per truck per mile; from 150 to 200 miles 4d. per truck per mile; every additional mile, 3½.

Minimum charge, 15s. per truck.

25th June, 1883.

No alteration save the following:-

Bulls: 7d. each per mile up to 100 miles, and 4d. each additional mile. If more than one in a truck, 4d. each per mile; half truck and upwards, cattle rates.

The following added to list of Stations and Charges to Homebush.

WESTERN LINE.

	Sheep per truck.	Cattle per truck.		
Nyngan	£ s. d. 7 8 8	£ s. d. 9 2 0		
Nevertire	6 17 7	8 7 8		

NORTHERN LINE.

SHEEP.

	Newcastle.	East Maitland.	West Maitland.	Farley.	Lochinvar.	
Armidale	£ s. d. 5 16 3	£ s. d. 5 11 0	£ s. d. 5 10 5	£ s. d. 5 9 10	£ s. d. 5 8 8	
Narrabri	5 13 11	5 8 8	5 8 1	576	5 6 4	
Boggabri	5 4 7	4 19 4	4 18 9	4 18 2	4 17 0	

CATTLE.

	Newcastle.	East Maitland.	East Maitland. West Maitland.		Lochinvar.	
Armidale	£ s. d. 7 3 4	£ s. d. 6 17 4	£ s. d. 6 16 8	£ s. d. 6 16 0	£ s. d. 6 14 8	
Narrabri	7 0 8	6 14 8	6 14 0	6 13 4	6 12 0	
Boggabri	6 10 0	6 4 0	6 3 4	6 2 8	6 1 4	

Rates for Carriage of Wool. 3rd February, 1881. GREAT SOUTHERN RAILWAY.

	· To Sy			To S	ydney.
From Darlington Albury Hulong Ettamogah Bowna Narrandera Gerogery Culcairn Coolaman Yerong Creek Sandy Creek and Hanging Rock	s: 10 10 10 10 10 10 9 9	6 3 3 3	From Cootamundra Harden (Murrumburrah) Binalong Bowning Yass Gunning Goulburn Marulan Moss Vale Mittagong Picton	Per bale 4 c s: 8 8 8 7 7 7 7 6 5 4	
Wagga Wagga Junee Bethungra	, 9 9 8	9	Menangle Campbelltown	. 3 2	0 6

No. 53-continued.

Rates for Carriage of Wool-continued.

GREAT WESTERN RAILWAY.

	To Sydney.	-	To Sydney.
From Dubbo	10 6 9 0 8 6 7 6	From Brewongle Tarana Wallerawang Bowenfels Penrith Richmond	7 0

GREAT NORTHERN RAILWAY.

	To Newcastle.	To Morpeth.		To Newcastle.	To Morpeth.
From Gunnedah Breeza Tamworth Werris Creek Quirindi Murrurundi Blandford	8 6 8 6 8 0 7 6 7 0	Per bale not over 4 cwt. s. d. 8 6 8 0 7 6 7 0 6 6 6 3	From Scone Aberdeen Musclebrook Ravensworth Singleton Branxton Maitland	5 0 4 6 4 0 3 6	Per bale not over 4 cwt. s. d. 5 9 5 6 4 6 4 0 3 6 2 6 1 6

Bales over 4 cwt. to be charged 15 per cent. on above charges for every cwt. or portion of cwt. in excess of 4 cwt. Wool in bags and pockets charged actual weight at first class rates.

DUMPED WOOL.

An allowance of 15 per cent. will be made on above rates for all wool properly dumped and hooped with iron, and for all bales not exceeding 250 lbs. in weight.

The rates to washing establishments will be, for distances not exceeding 15 miles, 10d. per bale; exceeding 15 but not exceeding 22 miles, 1s. 1d. per bale. From washing establishments the rates for similar distances will be 1s. and 1s. 3d. per bale respectively.

4th October, 1882.

No alteration except the following:-

GREAT SOUTHERN RAILWAY.

	To Sydney.		To Sydney.
From Hay		From Hulong	10 6

GREAT WESTERN LINE.

	To Sydney.		To Sydney.
From Nyngan Nevertire Dubbo	11 0	From Wellington	

No. 53-continued.

Rates for Carriage of Wool-continued.

GREAT NORTHERN RAILWAY.

	To Newcastle.	To Morpeth.		To Newcastle.	To Morpeth.
From Narrabri Boggabri	9 3	Per bale not over 4 cwt. s. d. 9 6 8 9 9 6	From Walcha Road	Per bale not over 4 cwt. s. d. 9 3 9 0	Per bale not over 4 cwt. s. d. 8 9 8 6

Armidale added, 25th June, 1883. Rate to Newcastle, 10/6. Morpeth, 10/-

Rates for Carriage of Coal.

	rriage of Coal.
SOUTH AND WEST LINES.	NORTHERN LINE.
3 February, 1881. Owners' Trucks. Under 50 miles, 1d. per ton per mile. Minimum charge, 2/- Over 50 ,, \$\frac{3}{4}d. ,, with a terminal charge of 3d. per ton. Minimum charge, 4/3. Lots under 5 tons to be charged as 5 tons, or First-class	3 February, 1881. Owner's Trucks. Under 7 miles
rates. Commissioner's Trucks.	25 ,, 35 ,,
First 50 miles, $1\frac{1}{2}$ d. per ton per mile. 50 to 150 ,, 1d. ,, ,, 150 ,, 250 ,, $\frac{4}{3}$ d. ,, ,, Over 250 ,, $\frac{1}{2}$ d. ,, ,,	For distances of 50 miles, \(\frac{3}{4}\)d. per ton per mile, with a terminal charge of 3d. a ton. Minimum charge, 4/3. After the first three days a charge of 3d. per waggon per day will be made for standing accommodation on the Coal Sidings at Newcastle.
4 October, 1882. No alteration except the following:—	The above rates include the use of cranes and staiths for shipment at Newcastle.
Commissioner's Trucks.	Commissioner's Trucks.
First 15 miles, 1s. 6d. per ton. 15 to 35 ,, $1\frac{1}{4}$ d. ,, per mile. 35 ,, 150 ,, 1d. ,, ,, 150 ,, 250 ,, $\frac{3}{4}$ d. ,, ,, Over 250 ,, $\frac{1}{2}$ d. ,, ,,	Same as South and West. 4 October, 1882. No alteration except in Commissioner's Trucks, as on South and West.
	. ,

25th June, 1883. No alteration.

Hay, Straw, and Chaff per Truck.

3 February, 1881.

														•													
			Hay	γ.			Stra nd Cl						Hay	7,	`		Stra d Cl		1				Hay			Str and C	
		eding—	£s.	d.		æ		d.	Note	axce	eding	£	s.	d.		£	s.	d.	Not	exceed	ling	æ	8.	đ.		£s	d.
	mile	8	0 10	0		0	10	0	180	mil	es	2	17	5		2	10	9		miles		4	2	1		3 12	2 - 7
26	"	·	0 14	0		0	14	0	185	,,		2	19	0		2	12	0	300	22.		4	3	2		3 18	3 7
35	,,		0 18	0		0	18	0	190	,,		3	0	2		2	13	2	305	"		4	4	3	•••	3 14	•
41	,,	•••••	1 0	0		1	0	0	195	"		3	· 1	6		2	14	4	310	"		4	5	1		3 18	
46	,,		1 2	0		1	2	0	200	"		3	2	10		2	15	7	315	"		4	6	2		3 16	
54	"		1 5	0		1	5	0	205	"	••••	3	3	11		2	16	6	320	"		4	7	3		3 17	
60	"	•••••	16	6		1	6	0	210	"		3	4	9	•••	2	17	3	325	"		4	8	4		3 18	
70	,,,		1 7	6		1	6	6	215	"		3	5	10	-	2	18	3	330			4	9	2	•••	3 18	_
80	11	·	1 8	9		1	7	6	220	"		3	6	11		2	19	2	335	19		4	10	2	•••	3 19	
90	"		1 12	Ó		1	8	3.	225	"	******	3	8	õ		3	0	ī.	340	"	•;••••		11	3		4 (
100	,,	******	1 15	6		ī	11	5	230	"		3	8	10		3		10	345	,,	*****	4	12	4	•••	4. 3	9
110	,,		1 17	1		1	12	10	235			3	10	2		3	2	ō	350	"	******	4	13	2	•••	4 2	-
120	1)		2 0	1		1	15	6	240	"		3	ĩĩ	ō	•••	3	$\bar{2}$	ğ.	355	"	•••••		14	3	•••	4 3	
130	"		2 3	1		ī	18	ĭ	245	"		3	$\overline{12}$	1	•••	3	3	9	360	**		4	15	4	•••	4 4	
135	"		2 4	9		ī	19	6	250	"		3		1Î ·	•••	3	4	5	365	"			16	5	, ••••	4 5	
140	"		2 6	5		$\bar{2}$	Ť.	ŏ	255	••		3	14	0	•••	3	5	5	370	"	·····	4	17	3	•••	4 6	
145	"		2 7	8		$\bar{2}$	$\tilde{2}$	$\tilde{2}$	260	"	•••••	3	15	ő	•••	3	.6	5	375	"	•••••		18	4	•••	4 7	ő
150	;,		$\tilde{2}$ $\dot{9}$	3		$\bar{2}$	3	6	265	"		3	16	ĭ	•••	3	7	4	380	"		4	19	5	•••	4 7	11
155	"	*****	2 10	8		$\bar{2}$	4	9	270	"		3		ıî	•••	3	, 8	اة	385	"		5	70	6	•••	4 8	
160	"	******	2 12	ŏ	•••	2	6	ŏ	275	"	******	3	18	0	•••	3	9	ŏ	390	"	• *** ***	5	1	4	•••	4 9	7
165		******	2 13	4		2	7	3	280	"	•••••	3	19	1	•••		10	ŏ	395	"	•••••	5	2	5	•••		6
170	"		2 14	9	•••	2	8	3	285	"			0	2	•••			11	400	"		_	3	6	•••		6
175	"	••••	2 16	ĭ	•••	2	9	7	290	"	á	4	1	0	• • •			8	400	" וננ	*****	5	ð	О	• • •	4 11	O
1.0	"	••••	2 10		•••	4	J		200	"	*****	4	т	U	• • •	0	11	0 [-					

Smaller quantities charged actual weight at First-class rates.

No. 53—continued.

Hay, Straw, and Chaff per Truck.

	-		4 O	CTOBER, 1882.				
,	Hay.	Straw and Chaff.		Hay.	Straw and Chaff.	•	Нау.	Straw and Chaff.
Not exceeding-	£s. d.	£ s. d.	Not exceeding-	£ s. d.	£ s. d.	Not exceeding—	£ s. d.	£ s. d.
16 miles	0 10 0	0 10 0	215 miles	2 17 2	2 10 7	365 miles		3 12 1
96	0 14 0	0 14 0	220 ,,	2 18 0	2 11 4	370 ,,		3 12 10
95 ′′	0 17 0	0 17 0	995	2 18 10	2 12 .0	375 ,,	432.	3 13 7
41 7	0.10 6	0 19 6	990 ″	2 19 7	2 12 9	380 ,,	440.	3 14 4
40 "	1 1 0	1 1 6	1 nog "	3 0 5	2 13 6	385 ,,		3 15 0
		1 4 0	940 "	3 1 3	2 14 2	390 "	457.	3 15 9
54 ,,	· · ·	1 4 6	945	3 2 1	2 14 11	395 ,,	465.	3 16 6
60 ,	1 m 0	1 5 6	פבת "	3 2 10	2 15 7	400 ,,	4 7 3	3 17 2
70 ,,	1 7 0	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	955	3 3 8	2 16 4	405 ,,	481	3 17 11
80 ,,	1 8 6	1 7 6	920 "	0 4 6	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	410 ,,	4 8 10	3 18 7
90 "	1 10 0		265 ,,	3 5 4	2 17 10	415	4 9 8.	3 19 4
100 ,,	1 11 9			3 6 1	2 18 7	490 "	4 10 6	4 0 1
110 "	1 14 2	1 9 0	270 ,,	3 6 11	2 19 3	40" "	4 11 4	4 0 9
120 ,,	1 16 7	1 12 5	275 ,,	2 7 0	2 19 11	490 "	$\vec{4} \ \vec{12} \ \vec{1}$	4 1 6
130 "	1 19 0	1 14 6	280 ,,		3 0 7	19g "	4 12 11	4 2 2
135 ,,	$2 \ 0 \ 1 \$	1 15 7	285 ,,:	3 8 7	3 1 4	440 "	4 13 9	4 2 11
140 ,,	$2\ 1\ 6\$	1 16 8	290 ,,	3 9 4	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	445 ,	4 14 7	4 3 8
145 ,,	$2 \ 2 \ 7 \ \dots$		295 ,,	3 10 2	3 2 11	450 "	4 15 4	1. 1. 1.
150 ,,	2 3 11		300 "	3 11 0	3 3 8	455	4 16 2	4 5 1
155 ,,	250		305 ,,	3 11 10		100 "	4 17 0	4 5 10
160 "	$2 \ 6 \ 1 \$	209	310 "	3 12 7	3 4 4 3 5 0		4 17 10	A C 7
165 ,,	272		315 ,,	3 13 5		465 ,,	4 18 7	4 7 3
170 "	283	. 2 2 8	320 ,,	3 14 3	3 5 9	470 ,,	4 19 5	4 9 0
175 "	. 294	. 2 3 8	325 ,,	3 15 1	3 6 6	475 ,,	5 0 3	4 8 8,
180 ,,	2105	247	330 "	3 15 10	3 7 3	480 ,,	9 U S.	4 9 4
. 185 ,,	2116		335 "	3 16 8	3 7 11	485 ,,	5 1 10	4 10 1
, 19 0 ,,	2 12 7		340 ,,	3 17 6	3 8 7	490 ,,		4 10 10
195 "	2 13 8		345 ,,	3 18 4	3 9 4	495 ,,	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
200 ,,	. 2149	. 285	350 ,,	3 19 1	3 10 0	500 ,,	5 3 6	4 11 7
205 ,	9 15 7	. 2 9 2	355 ,,	3 19 11	3 10 9			
210	2 16 4	. 2 9 10	360 ,,	409	3 11 5	1	•	•

Smaller quantities charged actual weight at First-class rates.

The charge per truck for distances not shown in this table will be one-fifth of the difference in rate between every 5 miles.

25 June, 1883—No alteration.

Special Class A Traffic.

In Truck Loads (not exceeding 6 Tons).

3 FEBRUARY, 1881.

100 miles 3 5 6 180 miles 4 12 8 260 miles 6 0 6 340 miles 7 105 ,, 3 6 0 185 ,, 4 14 6 265 ,, 6 1 11 345 ,, 7 110 ,, 3 7 9 190 ,, 4 16 3 270 ,, 6 3 4 350 ,, 7	ruck. d. d. 3 2
# 8. d. # 8. d. # 8. d. # 8. d. # 8. d. # 100 miles	_
100 miles 3 5 6 180 miles 4 12 8 260 miles 6 0 6 340 miles 7 105 ,, 3 6 0 185 ,, 4 14 6 265 ,, 6 1 11 345 ,, 7 110 ,, 3 7 9 190 ,, 4 16 3 270 ,, 6 3 4 350 ,, 7	3 2
105 miles 3 3 6 0 185 , 4 14 6 265 , 6 1 11 345 , 7 105 , 3 7 9 190 , 4 16 3 270 , 6 3 4 350 , 7 110 , 3 7 9 190 , 4 18 1 275	
105 " 3 6 0 105 " 4 16 3 270 " 6 3 4 350 " 7 110 " 3 7 9 190 " 4 18 3 270 " 6 4 9 355 " 7	47
110 , 3 7 9 190 , 4 10 1 275 , 6 4 9 355 , 7	6 0
	7 3
110 9	86
120 "	99
125 " " " " " " " " " " " " " " " " " " "	
130 3 14 9 210 , 5 3 5 290 , 6 5 6 70 ,	
195 " 9 16 7 915 5 5 3 295 ,, 0 10 5 5/5 ,, / 1	
" " " " 000 "	36
140 ,, 5 16 4 220 ,, 7 0 10 207 7 6 19 2 285 7 7	49
145 4 0 2 225 ,, 9 8 10 500 ,, 9 11 9 12 1	
150 4 1 11 230 5 10 7 310 , 0 14 0 590 , 1	
100 % 5 6 16 1 1 395 7	7 3
155 , 2 6 2 6 7 6 400 7 1	8 4
160 4 5 6 240 , 5 17 2 600 , 6 10 11	• -
165 4 7 4 245 ,, 5 15 11 325 ,, 6 16 11	
# 100 m 1 0ro # 1 0ro # 1 0ro # 10 0 1 990 7 () 4 1	
7 1 9	
175 , 4 10 11 255 , 5 19 1 335 , 7 1 9	

Trucks marked to carry more than 6 tons will be charged pro rata.

Special Class A Traffic.

In Truck Loads (not exceeding 6 Tons).

•	4 OCTOBER, 1882.	•	
Rate per Truck. £ s. d. 100 miles 2 18 6		Rate per Truck. £ s. d. 5 15 0 415 miles	Rate per Truck & s. d 6 17 0
105 " 3 0 0 110 " 3 1 5 115 " 3 2 10 120 " 3 4 3 125 " 3 5 8 130 " 3 7 2 135 " 3 8 7 140 " 3 10 0	210 , 4 10 3 315 , 215 , 4 11 8 320 , 220 , 4 13 1 325 , 225 , 4 14 5 330 , 230 , 4 15 11 335 , 235 , 4 17 4 340 , 240 , 4 18 9 345 , 245 , 5 0 2 350 , 250 , 5 1 6 355 ,	5 16 2 420 ,, 5 17 3 425 ,, 5 18 5 430 ,, 5 19 6 435 ,, 6 0 8 440 ,, 6 1 9 445 ,, 6 2 11 450 ,, 6 4 0 455 ,, 6 5 0 460 ,,	6 18 0 6 19 0 7 0 0 7 1 0 7 2 0 7 3 0 7 4 0 7 5 0 7 6 0
145 3 11 5 150 3 13 0 155 3 14 6 160 3 15 11 165 3 17 4 170 3 18 9 175 4 0 2 180 4 1 8 185 4 3 1 190 4 4 6 195 4 7 4	250	6 6 0 465 ;; 6 7 0 470 ;; 6 8 0 485 ;; 6 9 0 488 ;; 6 11 0 490 ;; 6 12 0 495 ;; 6 13 0 500 ;; 6 15 0 6 16 0	7 7 0 7 8 0 7 9 0 7 10 0 7 11 0 7 12 0 7 13 0 7 14 0
		on charged providents between	awawa E milas

The charge per truck for distances not shown in this table will be one-fifth of the distance in rate between every 5 miles.

No. 53—continued.

Parcels Rates-continued.

Perambulators (children's) and velocipedes will be conveyed in Guard's Vans, at the following rutes:—
When conveyed as passengers' luggage—

	s.	d.		, s	3.	d.
Not exceeding 15 miles	0	9		Not exceeding 125 miles	3	0
30 "	· 1	0 -		150 " 8	3	6
, 50 ,,	1	6		200 ,,	4	0
75 ,,	2	0		250 ,,	4	6
.100 ",	2	6		300 ,,	5	0
When conveyed as parcels 50 per cent. add	itio	nal ·	will b	e charged.		

Rates for conveyance of Library Exchanges.

Books forwarded for exchange to and from subscribers to recognized Circulating Libraries only will be carried at one fourth parcels rates, under the following conditions, viz.:—

1. The sender's name must be legibly inscribed on each parcel.

Each parcel must be open at both ends.
 Each parcel must be declared on the consignment-note to contain books only.

Gold Dust and Bullion, and Gold and Silver Coin.

'The Commissioner for Railways will not be responsible for the safe conveyance of Gold Dust and Bullion, Bank-notes and Bills, Orders, Notes, and Securities for the payment of Money, and Gold and Silver Coin, or any of the other articles mentioned above, as the following charges are made, and the Gold Dust and Bullion and Coin carried, on condition of its being in charge of owners and at their risk.

	Distance	Distance	Distance	Distance	Distance	Distance	Distance
	not over	not over	not over	not over	not over	not over	over
	55 miles.	100 miles.	150 miles.	200 miles.	250 miles.	350 miles.	350 miles.
Gold Dust and Bullion, per 100 ozs Gold Coin, per £100 Silver Coin, per £100	0 6	s. d. 3 6 0 10 1 9	s. d. 4 3 1 3 2 6	s. d. 5 0 1 8 3 3	s. d. 6 5 6 2 0 3 6	s. d. 6 0 2 3 3 9	s. d. 6 6 2 6 4 0

Fractions over 100 and under 50 will not be charged, but fractions of 50 and over will be charged as 100.

If conveyed at Commissioner's risk the following Insurance Rates will be charged in addition:

1 to 100 r	nilès	1s. 6d. per cer	nt. on declared value.
101 to 200	do	1s: 9d.	do.
201 to 300	do	2s. 0d.	do.
301 to 400	do	2s. 3d.	do.
401 to 500	do	2s. 6d.	do.

No alterations in 1883 except the addition of the following:

Exchange of Parcels, &c., Traffic between New South Wales and Victorian Lines.

Parcels, excess luggage, and commercial travellers' samples are booked through between New South Wales and Victorian Stations at the undermentioned rates:

For those parcels booked through between Sydney and Melbourne the rates are-

						13+	u.	
			Not	exceeding	3 lbs	2	0	
Over	3	but	٠,	,,	7 .,	3	0	
••	7	,,	"	,,	14 ,,	4	6	
**	14			"	28 ,,			
"	28	"	,,	"	56 ,,			
		"		,,	84 ,,			
"	84	•	,,	"	112 ,,			
, ,,		"	"	".	±±= ,,		•	

and 2s. 6d. for every additional 28 lbs. or part thereof.

All other parcels, &c., from New South Wales Stations to Victorian Stations are booked to Wodonga, and those from Victorian to New South Wales Stations are booked to Albury at the rates named below.

Between Albury and Victorian Stations the ordinary Victorian rates are charged (189 miles from Melbourne), and, in addition, the following charges for the New South Wales Department are added:—

						в.	u.
			Not	exceeding	3 lbs	0	3
Over	3	,,	,,	,,	7 ,,	0	4
,,	7	1)	11	"	14 ,,	0	6
"	14	,,	,,	**	28 ,,	0	8
11	28	,,,	11	"	56 ,,	0	10
٠,,	56	"	"	"	84 ,,	1	0
	84				112	1	2

and 3d. for every additional 28lbs. or part thereof, and for the purposes of charging parcels, &c., from New South Wales Stations to Wodonga, the latter station is regarded as 388 miles from Sydney, and the charges calculated accordingly, plus the

Parcels between Albury and Wodonga are charged double the above rates.

Press parcels are charged one-fourth the above rates—minimum, New South Wales Line, 3d.

Packed parcels in hampers, crates, bags, cases, or other packages are charged quadruple the above rates, and the onus of proving that parcels are not packed rests with the consignors or consignees.

When two or more parcels are consigned to one person the above rates are charged on each parcel separately.

Bicycles, feathers, furniture, glass, hats, bonnet or hat boxes, cases of millinery, straw bonnets, mirrors (loose), musical instruments, perambulators, sulkies in pieces, pictures, sewing-machines, wicker-work, wire cages (loose), or other articles light or fragile, are considered admeasurement goods, and are charged 50 per cent. additional on the above rates. Parcels containing articles and property of a description not mentioned or specified in the following clause, such articles and property being over £10 in value, are, in addition to the amount chargeable by the foregoing scale of rates, charged a further sum equal to 1 per centum upon the declared value thereof.

Parcels containing any of the following articles are charged the following increased rates, viz.:—Over £10 and under

Parcels containing any of the following articles are charged the following increased rates, viz.:—Over £10 and under £50 in value, double, and over £50 in value, quadruple, parcel rates, viz.:—Gold or silver coin of this realm, or of any part of Her Majesty's dominions, or of any foreign state, or any gold or silver in a manufactured or unmanufactured state, or any precious stones, jewellery, watches, clocks, or time-pieces of any description, trinkets, bills, notes of any banks in Her Majesty's

dominions, or of any foreign bank, order, notes, or securities for payment of money, whether foreign or otherwise, stamps, maps, writings, title-deeds, paintings, engravings, pictures, gold or silver plate, or plated articles, glass, China, silk in a manufactured or unmanufactured state, and whether wrought up or not wrought up with other materials, furs or lace or any of them contained in any parel or peakers.

them contained in any parcel or package.

The trainage on all parcels conveyed under bond must be prepaid.

Horses, carriages, and dogs from New South Wales to Victorian stations are booked to Wodonga at Albury rates, and from Victorian Stations to Albury at Wodonga rates, plus the following charges:—

One horse	2	0
Two horses	3	0
Three horses belonging to same owner	4	0
Carriages, gigs, dog-carts, and vehicles of a similar description	4	0
Dogs	ñ	6

Corpses are booked in a similar manner, with 4s. added for conveyance between Albury and Wodonga.

Ice will be conveyed by Passenger Trains as under.

Miles.	10 lbs. and under.	For each additional 101bs.	Milės.	10 lbs. and under.	For each additional 101bs.
Distance not over— 100	$\begin{array}{ccc} 0 & 3 \\ 0 & 4 \end{array}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Distance not over— 300	· 0 7	s. d. 0 3 0 3½ 0 4

Miscellaneous in Truck Loads.

(Not exceeding 6 Tons.)

4 OCTOBER, 1882.

•	Data man Manada	7.4 m			n.	
٠,	Rate per Truck.	Rate per T		Rate per Truck.	.Ra	te per Truck.
	£ s. d. ∣		d.	£ s. d.		£ s. d.
$120 \mathrm{\ miles}$	2 17 10	220 miles 4 3	10 320 miles	5 5 7	420 miles	6 4 3
125 "	2 19 2	225 ,, 4 5	0 325 ,,	5 6 7	425 ,	6 5 2
130 ,,	3 0 6	230 ,, 4 6	4 330 ,,	5 7 7	430 ,,	6 6 0
135 ,	3 1 9	235 ,, 4 7	8 335 ",	5 8 7	435 ,,	C C 11
140 ,,	3 3 0		11 340 ,,	5 9 7	440 ,,	C 7 10
145 ,,	3 4 4	245 ,, 4 10	2 345 ,,	5 10 8	445 ,,	6 0 0
150 "	3 5 9	250 ,, 4 11	5 350 ,,	5 11 8	450 ,,	. 6 9 8
155 ,,	3 7 1	255 , 4 12	5 355 ,,	5 12 7	455 ,,	6 10 7
16 0 ,,	3 8 4	260 , 4 13	5 360 ,,	5 13 5	460 ,,	6 11 5
165 ,,	3 9 8	265 ,, 4 14	5 365 ,,	5 14 4	465 ,,	. 6 12 4
170 "	3 10 11	270 ,, 4 15	5 370 ,,	5 15 3	470 ,,	6 13 3
175 ,,	3 12 2	275 ,, 4 16	6 375 ",	5 16 2	475 ,,	6 14 2
180 ,,	3 13 6	280 ,, 4 17	6 380 ,,	5 17 0	480 ,,	6 15 0
185 .,,	3 14 10	285 , 4 18	6 385 ",	5 17 11	485 ,,	6 15 11
190 "	3 16 1	290 , 4 19	6 390 ,	5 18 10	490 ,,	6 16 10
195 "	3 17 4	295 ,, 5 0	6 395 ,,	5 19 9	495 ,,	6 17 9
200 ,,	3 18 8	300 ,, 5 1	6 400 ",	6 0 8	500 ,,	., 6188
205 "	4 0 0	305 ,, 5 2	6 405 ,,	6 1 7	, ••	
210 ,,	4 1 3	310 ,, 5 3	6 410 ,,	6 2 5		
215 "	4 2 6	315 ,, 5 4	6 415 ",	6 3 4	•	

The charge per truck for distances not shown in this table will be one-fifth of the difference in rate between every 5 miles.

25 June, 1883-No alteration.

No. 53—continued.

4 October, 1882-Parcel Rates.

Miles.	3 lbs. and under.	Over 3 lbs. to 7 lbs.	Over 7 lbs. to 14 lbs.	Over 14 lbs. to 28 lbs.	Over 28 lbs. to 56 lbs.	Over 56 lbs. to 84 lbs.	Over 84 lbs. to 112 lbs.	Every 28 lbs. or part thereof.
Distances not over— 15 30 45 60 75 90 105 120 135 150 165 180 195 210 225 240 255 270 285 300 315 And respectively for every addi-	1 6	s. d. 0 4 0 5 0 6 0 8 0 9 0 11 1 0 1 2 1 3 1 5 1 6 1 8 1 79 1 11 2 0 2 .2 2 4 2 6 2 8 2 10 3 0	s. d. 0 6 0 7 0 9 0 11 1 2 1 4 1 6 1 8 1 11 2 3 2 5 2 8 2 10 3 0 3 2 3 4 3 6 3 8 3 10	s. d. 0 8 0 9 1 0 1 3 1 6 1 9 2 0 2 3 2 6 2 9 3 0 3 3 6 3 9 4 4 0 4 5 5 6	s. d. 0 10 0 11 1 3 1 7 1 11 2 2 2 6 2 10 3 2 3 5 3 9 4 1 4 8 5 0 5 4 5 8 6 4 6 8 7 0	s. d. 1 0 1 2 1 6 1 11 2 3 2 8 3 0 3 5 3 9 4 2 4 6 4 11 5 8 6 0 6 5 6 10 7 8 8 1 8 6	8. d. 1 2 1 4 1 9 2 2 2 8 3 5 4 0 5 6 6 0 6 5 6 10 7 6 8 0 8 5 8 10 9 8 10 1	s. d. 0 3 0 3 0 4 0 6 0 7 0 8 0 10 1 0 1 5 1 6 1 7 1 8 1 10 2 0 2 1 2 2 3 2 4 2 5
tional, or part of additional, 15 miles		0 2	,0 2	0 3	0 4	0 5	. 0 5	0 1

Fresh meat, fish, poultry (dead), dairy produce, eggs, fruit, vegetables, ice, and game, under 1 cwt., 25 per cent. reduction on parcel rates; minimum charge, 3d.

Musical instruments, packed in cases, 25 per cent. added to above rates.

Pictures in frames, packed or unpacked, double rates. Mirrors, double rates.

Furniture and sewing-machines, packed in cases, ordinary rates, but when unpacked double rates will be charged.

Bath chairs, perambulators, velocipedes, and bicyles, requiring a carriage truck for their conveyance, will be charged as for a two-wheeled carriage. Bath chairs and perambulators (adults) carried in Break Vans will be chargeddouble the rate for children's perambulators.

Corpses, 1s. per mile; minimum charge, 5s.

Newspaper parcels, one-quarter parcels rates; minimum charge, 3d.

Passengera' excess luggage, parcel rates.

Commercial travellers' excess luggage, parcels rates on down journey and free on up journey, on production of Railway receipts certifying that full trainage has been paid on down journey.

The maximum rates for the conveyance of parcels between Sydney and any Station on the South and South-western Lines

The maximum rates for the conveyance of parcels between Sydney and any Station on the South and South-western Lines are as follows :-

3 lbs. and under.	Over 3 lbs. to 7lbs.	Over 71bs. to '14 lbs.	Over 14 lbs. to 28 lbs.	Over 28 lbs. to 56 lbs.	Over 56 lbs. to. 84 lbs.	Over 84 lbs. to 112 lbs.	Every additional 28 lbs. or part thereof.
s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1 6	3 0	4 0	5 6	7 0	8 6	10 1	2 5

No. 54.

Comparative Statement of the Rates charged for Goods in New South Wales, Victoria, Queensland, and South Australia, 31st December, 1883.

	New Sou	ıth Wal	es.		Victoria			Q	ueenslan	d.	South A	ustralia.	
Articles of Traffic.	Class.	50 miles.	150 miles.	Class.	50 miles.		150 miles.	Class.	50 miles.	- 150 miles.	Class.	50 miles.	150 miles.
Acids (in cases and carboys)	4	s. d. 38 3	s. d. 109 6	4.	s. d. 58 0	s. 175	d. 0	Gunpow- der Rate Carboys	s. d.	s. d. 120 0 240 0	4	s. d. 39 6	s. d. 112 8
Acrated Waters	2	21 7	61 2	Miscellaneous	13 6	38	6	1 Carboys	20 6	69 0	1	14. Ĝ	38 11
Agricultural Machines	3	29 5	84 10	4,	29 0	87	6	1	20 6	69 0	$\begin{cases} 1\frac{1}{2}d. \text{ to 1s. 4d. p} \\ \text{to kind c} \end{cases}$	er mile a of machin	ccording
Ale and Porter (in bulk)	. 2	21 7	61 2	∫ Miscellaneous	13 6	38	6} .	1	20 6	69 0	1	14 6	38 11
Ammunition	4.	38 3	109 6	In cases 3	25 0 29 0	75 87	0 } 6	Gunpowder Rate		120 0	Gunpowder Rate	50 0	150 0
Bags	В	8 10	24 8	1	16 6	50	0	1	20 6	69 0	1	14 6	38 11
Bark (in sheets, bundles, or bags)	A	5 4	13 6	in truck loads, Special in less than truckloads,	7 6 13 6	20 38	0 6}	Agricultural 1	12 3	39 6	$\left\{\begin{array}{c} 1 \\ \text{Loose 2} \end{array}\right.$	14 6 20 9	38 11 57 4
Battens	A plus 25 %	6 8	16 11	Miscellaneous. Soft wood 1	16 6	1	.060 c. ft. to ton	Timber Rates	12 6	37 6	1	14 6	38 11
Beet-root	A A	5 4	13 6	Agricultural	5 6	15	0	Agricultural 2	9 0	24 8	A	8 4	17 9
Bicycles	4	38 3	109 6	4	58 0	175	0	2	30 3	104 0	4	39 6	112 8
	A plus 50 %	8 0	20 3	1	16 6	50	0 30 do. do.	Timber rates	12 6	37 6	1 .	14 6	38 11
Boards	A. plus 50 %	21 7	61 2	6d. per truck	l		-	2	30 3	104 0	1 60 cub. ft.	14 6	38 11
Boats	_ ,			du. per truck	29 0	87		2	30 3	104 0	(not ex. 2 tons 1	14 6	38 11
Boilers	2	21 7	61 2			20		Excep.	7 6	22 6	ex. 2 tons 2 In bags A	20 9 8 4	57 4 17 9
Bones	A	5 4	13 6	Special	7 6			Excep.	20 6	69 0	Loose 1 Special	14 6 10 5	38 11 31 3
Bottles (empty, in cases and crates)	B	8 10	24 8	Miscellaneous	13 6	38		_			A	8 4	17 9
Bran:	A .	5 4	13 6	Agricultural	5 6	15		Agricultural 2	9 0	24 8			
Bricks	M	4 10	12 6	Special	·· 7 6	١.		Excep.	7 6	22 6	Special	10 5	31 3
Cabbag as	A	54	13 6	Miscellaneous	13 6	38	6	Agricultural 2	9 0	24 8	A .	8 4	17 9
Candied Fruits	To Sydney B	8 10	24 8	3	25 0	75	0 .	2	30. 3	104 0	2	20 9	57 4
Carpentry	3	29 5	84 10	4. `	29. 0°	87	6	2	30 3	104 0	2	20 9	57 4
Carrots	A	5 4	13 6	Agricultural	5 6	15		Agricultural 2	9: 0	24 8	A :	8 4	17 9
Cases (new, empty)	В	8 10	24 8	2	21 0	62		2	30 3	104 0	3.	27 0	75 9
Casks do	В	8 10	24 8	2	21 0	62		2.	30 3	104 0	3	27 0	75 9
Cement	В .	8 10	24 8	1	16 6	50		Special	15 0	46- 8-	Gmarial (4 ton late)	14 6	38 11 31 3
Chaff (pressed)	See page			Special	7 6	20	0	Agricultural 2	9 0	24 8	Special (4-ton lots)	10 5	31 3

Charcoal (in bags)	B .	8 10	24 8	Special	7 6	3 2	20 0		1	20	6	69	0	2	:	2 0	9	57	4
Chicory Root	, A	5 4	13 6	Agric.	5 6	;:	15 0		Agricultural 2	9	0	24	8	N.	ot na	med			1
(Clay	Miscellaneous	4 10	. 12 6	Special	7 6	3 .	20 0	`	Excep.	7	6	22	6 .	Excep. (5 ton lot	ts)	6	3	18	9
(Coal	Commisnr's Trucks Owner's Trucks	4.10 4 2	$\begin{array}{cc} 12 & 6 \\ 9 & 8 \end{array}$	Special	7 6	3 :	20 0		Government Trucks Owner's Trucks	4 3	2 2	10 7		} Special	1	10	5	31	3
Coke (in bags)	В	8 10	24 8	, Miscellaneous	13 6	; ;	38 6				.	••••	••	2	!	20	9	57	4
Do. (in owners trucks)	A	5 4	13 6		No	t n	amed		Excep.	7	6	22	6	N	ot me	entic	ne d		
Colonial Wine	В	8 10	24 8	Bulk misc. Cases 2 up	13 6 21 0		38 6 62 6		2	30	3	104	0	$\left\{\begin{array}{ll} \text{In bottles 3} \\ \text{In bulk} & 2 \end{array}\right.$			9	75 57	9 4
Copper ore	Miscellaneous	4 10	12 6	Special	7 6	3 :	20 0		Not	menti	one	d		Special (5 ton lot	ts)	9	0	18.	4
Do (Smelted)	В	8 10	24 8	Up journey misc.	13 6 25 0		38 6 75 0		***		.	••••		1	:	14	6	38 1	1
Drain Pipes	A .	5 4	13 6	Special	7 6	3 .	20 0	, .	Excep.	7	6	22	6	Special		10	5	31	3
Dairy produce	1 .	17 8	49 4	Cheese in cases 1 Butter, &c. 2	16 6 21 0		50 0 62 6		Agricultural 1	12	3	39	6	2		20	9	57	4
Dynamite	Excep.	5 0 0	150 0	4	29 ()	87 6		Gunpowder rate	·	.	120	0	Gunpowder rat	е	50	0	150	0
Feathers	3	29 5	84 10	4	29 () .	87 6		2	30	3	104	0	4	1	79	0	225	4
Felloes—undressed	A	5 4	13 6	Firewood	4, 2	≥ :	11 3		Timber rates	12	6	37	6	1		14	6	38 1	.1
Fireclay Blocks	A	5 4	13 6	, 1	16 6	3	50 0	İ	Excep.	8	4	25	0	Special	1	10		31	1
Firewood	Miscellaneous	4 10	12 6	Firewood	4. 2	3 .:	11 3	1	Timber rates	4	2	12	6	Special (Between 1 April and 31 Oct., per truck)			8	31 88	0
Fireworks	4 '	38 3	109 6	4	29 ()	87 6	;	Gunpowder rate		.	240	0						
Fish—fresh or shell	Miscellaneous	12 6	37 6	$\left\{\begin{array}{cc} 2\\ 3\\ 2\end{array}\right.$	21 0 25 0 21 0	j · ·	75 0	Fresh Dried In brine	Excep. 1 1	12 20 20	6 6	37 69 69	6 0 0 .	$rac{2}{ ext{Preserved 1}}$			9	57 38 1	
Flour	A	5 4	13 6	Agricultural	5 6	1	15 0	(From Colonial wheat. Excep.	8	4	25	0	A		8	4	17	9 .
Flower-pots	В	8 10	24 8	3	25 (0	75 0)	2	30	3	104	0	3		27	0	75	9
Fruit	A	5 4	13 6	Miscellaneous	13 6	6	38 6	; .	Agricultural 1	12	3	39	6	A		8	4	17	9
Furniture	4	38 3	109 6	4	29, (0	87 6	;	2	30	3	104	0	4	İ	39	6	112	8
Do. (in cases)	3	29 5	84 10	3	25 (o	75 0	•	2	30	3	104	0	3		27	0	75	9
Garden Produce	A	5 4	1,3 6	Agricultural	5 6	6	15 0	•	Agricultural 2	9	0	24	8	A.		8	4	17	9
Glue pieces	В,	8 10	24 8	2	21 (0	62 6	;	2	30	3	104	.0	2 .		20	9	57	4
Do. (wet)	A	5 4	·13. 6	2	-21 (- 1	62 6					,				_		7 27	
Grain	A .	5 4	13 6	Agricultural	5 (6	15 0		Agricultural 2	9	0	24	8	· A		•	4 l	17	9
Green Fodder	. A .	,5 ,4	13 :6	Not mentioned			•••••		Agricultural 2	9	0.	24	8	N	ot m	enti	one	d	
Guano and Artificial Manures	A	5 4	13 6	· Artificial Manures (Col.) Agricultural.	5 (6	15 0		Excep.	7	6	22	6	Special		10	5	. 31	3
Gunpowder (in casks)	Excep.	50 0	150 0	4	29 (0	87 6	; .	Gunpowder rate			120		Gunpowder rat			īl	150	
Hardware	3	29 5	84 10	3	1	- 1	75 0		2	30	3	1.04		3	.		0	• -	9
Hats	4	38 · 3	109 6	In cases 4	58 (0 1	175 0	· ·	2 ·	. 30	3	104		- 4		79	0	22 5	4.

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Articles of Traffic.	New So	uth Wal	les.		Victoria	ı.		Queenslar	ıd.	South A	Australia	υ .
	Class.	50 miles.	150 miles.	Class.	50 miles.	150 mile	s. Class.	50 miles.	150 miles.	Class.	50 miles.	150 miles.
Нау	Į.	s. d.	s. d.		s. d. See page	s. d.	Agricultural	s. d. 2 9 0	s. d. 24 8	Special	s. d: 10 5	s. d.
Hides—(Green and Wet Salted)	A B	5 4 8 10	13 6 24 8	Miscellaneous	13 6	38 6.	Tied Specia	15 0	46 8	$\left\{egin{array}{l} ext{Bales Special} \ ext{Loose 1} \end{array} ight.$	10 5 14 6	31 3 38 11
Hoofs	A,	5 4	13 6	Miscellaneous	13 6	38 6	Excep.	7 6	22 6	in bags A Loose 1	8 4 14 6	17 9 38 11
Horns	A	5 4	_13 6	Miscellaneous	13 6	38 6	Excep.	7 6	22 6	in bags A Loose 1	8 4 14 6	17 9 38 11
Iron—Bar, Rod, Angle, and T Do. Boiler-plate or Sheet	2 2	21 7	61 2	Miscellaneous Sheet 2 Plate Miscell.	13 6 21 0 13 6	38 6 62 6 38 6	1	20 6 20 6	69 O	1	14 6 14 6	38 11 38 11
Do. Castings (if over 3 tons, owner's risk only). Do. Corrugated (in cases)	2)	17 8	49 4	2	16 6 21 0	50 0 62 6	1	20 6	69 0 69 0	in cases 1 Loose 2 Loose 3 in cases 1	14 6 20 9 27 0 14 6	38 11 57 4 75 9 38 11
Do. Girders	} 2	21 7	61 2	$\left\{egin{array}{c} oldsymbol{3} \ oldsymbol{4} \end{array} ight.$	25 0 29 0	75 0 87 6	-1 2	20 6 30 3	69 0 104 0	1 { 1 80 c. ft. to tn.}	14 6 14 6	38 11 38 11
Do. Tanks (Malt, Square, and Empty) Do. Wire (in bundles)	3 1	29 ` 5 17 8	84 10 49 4	4 1 (Wheels 1	29 0 16 6 16 6	87 6 50 0 50 0	2 Special	30 3 15 0	104 0 46 8	1 120 c. ft. to tn. Fencing Special Wheels 2	14 6 10 5 20 9	38 11 31 3 57 4
Do. Wheels and Axles (Railway) Do. Nails Do. Pig, Pipes, and Rough Castings (from	} 2	21 7	61 2	Axles 2	21 0 21 0	62 6 62 6	2 2		104 0 104 0	Axles 1	14 6 14 6	38 11 38 11
Manufactory)	Miscellaneous	4 10	12 6	No				Tot mention	1	Not	mention	ed. 38 11
Do. Pig and Scrap	M 3	4 10 29 5	12 6 84 10	Special .	7 6 25 0	20 0 75 0	Excep.	7 6 30 3	22 6 104 0	Scrap Excep. Cases 1 Loose 3	6 3 14 6 27 0	18 9 38 11 75 9
Ironstone	Miscellaneous	4 10	12 6	Special	7 6	20 O						
Jams	(to Sydney) B	8 10	24 8	3	25 0	75 0	2	30 3	104 0	Special	10 5	31 3
Joinery	3	29 5	84 10	4	29 0	87 6	2	30 3	104 0	2	20 9	57 4
Kerosene Oil	(to Sydney) 1	17 8	49 4	3	25 0	75 0	2	30 3	104 0	2	20 9	57 4
Lamps—(Street, Door, or Hall)	3	29 5	84 10	Loose dble. rate in cases 4	58 0 29 0	175 0 } 87 6 }	2	30 3	104 0	4	39 6	112 8
Laths	A	5 4	13 6	2	21 0	62 6	Timber	12 6	37 6	1 .	14 6	38 11
Lead (Pig)	} 2	21 7	61 2	$\left\{\begin{array}{cc} 2\\ 3\\ \end{array}\right.$	21 0 25 0	62 6 75 0	Special 1	15 0 20 6	46 8 69 0	1 2	14 6 20 9	38 11 57 4
Leather (in bales or secured bundles)		17 8 21 7	49 4 61 2	Fancy 4 Miscellaneous	29 0 13 6	87 6 38 6}	, 2 , 2	30 3	104 0 104 0	In bales 1.	14 6 entionéd.	38 11

No. 54—continued.

Lime	À	5 4	13 6	Special For manure, ag	7 6 5 6	20 15	0 }	Excep.	7 6	L	6		A .	8	4	17 9
Limestone	Mis.	4 10	12 6	Not	named.	a ==		Excep.	17 €				Special	10	5	31 3
Lithofracteur	Except	50 0	150 0	4	29 0	87	6	Gunpowder		120	Ο.		Gunpowder rate	50	O	150 0
Lucerne Seeds	1 .	17 8	49 4	-2	21 0	62	6	Agric. 1	12 8	39	6					İ
Machinery (of all kinds)	3 -	29 5	84 10	heavy 2	21 0	62	6	. 1	20 6	69	0		Unspecified	27	0	75 9
Malt	1	17 8	49 4	Special	9 6	26	0	1	20 6	69	.0	•	1	14	6	38 11
Mangold Wurzel	$oldsymbol{A}$	5 4	13 6	Agric.	5 6	15	0	Agric. 2	9 0	24	8		A	8	4	17 9
Manure (loose)	Mis.	4 10	12 6	Agric.	5 6	15	0	Excep.	7 6	22	6		Special	6	3	18 9
Do. (artificial)	A	5 4	13 6	Agric.	5 6	15	0	Excep.	7 €	22	6		Special	6	3	18 9
Marble (undressed)	Mis.	4 10	12 6	Special	7 6	20	0	Special	15 0	46	8		2	20	9	57 11
Meal	A	5 4	13 6	{ Oat, 2	21 0	62		Agric. 2	9 0	24	8		A	8	4	31 3
Measurement Goods, 80 cub. feet to ton	. 1	17 8	49 4	Pease & Maize, Sp. Not	7 6 named.	20	0	Not	named	.	-		Not	name	ed.	1.2
Millinery	4	38 3	109 6	4	58 0	175	0	2	30 3	104	0		4	39	6	112 8
Muriate of Lime	1	17 8	49 4	Not	named.			2	30 3	104	0		1	14	6	38 11
Musical Instruments	4.	38 3	109 6	4	29 0	87	6	2	30 3	104	0		· 4.	39	6	112 8
Naphtha	4	38 3	109 6	4.	29 0	87	6	Gunpowder		240	0		Not	name	h.	ı
Offal	Mis.	4 10	12 6	Not	named.	0,	O .	Excep.	7 6	j			Special	6	3	18 9
Oil-cake	В	8 10	24 8	1	16 6	50	0	2	30 3	4.		1	1	14	6	38 11
Opium	. 4	38 3	109 6	4	58 0	175		2	30 3	ļ	-		4		6	112 8
Ores (crude)	Mis.	4 10	12 6	Special	7 6	20	0	- Not	named.				Special (5-ton lots)	9	0	18 4
Paintings and Engravings	4	38 3	109 6	∫ loose Double rate	58 0	175	0	} 2	30 3	104	0		4	39	6	112 8
Palings (undressed)	A	5 4	13 6	in cases 4 Firewood	29 0 4 2	87 11.	6 3	Timber	8.4	25	0		1	14	6	38 11
Panas	В	8 10	24 8		21 0	62	c	2	30 3	104	Λ		2	20	ا م	57, 4
Paper	_		24 0	2	21,0	1							4		-	
Papier Mâché Goods	3	29 5	84 10	4	29 0 29 0	87	6 6 bundles	2	30 3		_		4.	39	6	112 8
Perambulators	4	38 3	109 6	double rate	58 0	175	0 loose) 2	30 3				4	39	6	112 8
Perfumery	3	29 5	84 10	4	, 29 0	87	6	2	30 3				4	39	6	112 8
Picture-frames	4 `	38 3	109 6	4	58 0	175		2	30 3	1			4	79	0	225 4
Pier Glasses and Mirrors	4	38 3	109 6	4.	29 0	87	6	2	30 3	104	0		4	39	6	112 8
Pipes (Iron)	From the Manufactory.—Mis.	4 10	12 6	1	16 6	50	0	1	20 6	69	0		1	14	6	38 11
Pitch '	i	17 8	49 4	1	16 6	50	0	1	20 6	69	0		. 1	14	6	38 11
Plants (in pots and cases)	3	29 5	84 10	3	25 0	75	0	Agric. 1	12 3	39	6		4		6	112 8
Plate-glass	4	38 3	109 6	4	29 0	87	6	2	30 3	104	0		Window 3 Plate 4	27 39	0 6	75 .9 112 8
Plated Goods	3	29 5	84 10	4	29 0	87	6	2	30 3	104	0		4		6	112 8
Pollard	A	5.4	. 13 6	· Agric.	5 6	15	0	Agric. 2	9 0	24	8		A .	. 8	4	17 9
Portable Engines	3	29 5	84 10	Mis.	13 6	38	6	,	25 0	75	0		2	20	9	57 4
Posts and Rails (undressed)	.	5 4	13 6	Firewood	4 2	11	3	Timber	8 4	25	0		Special	10	5	31 3
Potatoes	A	5 4	13 6	Agric.	5 6	15	0	Agric. 2	9 0	24	8	,	A. ´	8	4	17 9
L.,		<u> </u>	1	<u> </u>		<u> </u>		1	L	1			<u> </u>			

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No. 54—continued.

Charles Street for michage and	New So	outh Wa	les.		Victoria	.		Q	ueenslan	ıd.	South A	Lustralia	a.
'Articles of 'Traffic.'	Class.	50 miles.	150 miles.	Class.	50 miles.		150 miles.	Class.	50 miles.	150 miles.	Člass	50 miles.	150 miles
Poultry (living) in crates	2	s. d. 21 7	s. d. 61 2	4	s. d., 29 0	s. 87	d. 6	Agric. 1	s. d. 12 3	s. d. 39 6	4	s. d.	
Do (in flocks) per truck	Excep. (To Sydney) A	25 0 5 4	66 8 13 6	Miscellaneous	13 6	38	c		i .	named. 119 miles.	1	14 6	38 13
Preserved Meat									ļ		•		
Quicksilver	1	17 8	49 4	3	25 0	75	Ó		30 3	104 0	3	27 0	75
Rags and Materials for making Paper (not chemical)		54	13 6	$\left\{ egin{aligned} ext{Rags-Miscel.} \ ext{Rope-Special} \end{aligned} ight.$	13 6 7 6	38 20	$\left. \begin{smallmatrix} 6 \\ 0 \end{smallmatrix} \right. $	Excep.	7 6	22 6	1	14 6	38 1
Railway Materials	. 1	17 8	49 4	Miscellaneous	13 6	38	6	Excep.	7 6	22 6	1	14 6	38
Regulus (with more than 33 per cent. of copper) Do. (with less than 33 per cent. of copper)	A Miscellaneous	5 4 4 10	13 6 12 6	}	Not	name	d.		Not.	named.	Special (5 ton lots)	9 0	18
Resin	1	17 8	49 4.	1	16 6	50	0	2	30 3	104 0	1	14 6	38
Róad Metal	Miscellaneous	4 10	12 6	In trucks	4. 2	11	3	Excep.	7 6	22 6	Excep.	6 3	18
Salt—Rock and Calcutta—Lick Blocks	В	8 10	24 8	Miscellaneous	13 6	38	6	Special	15 0	46 8	A	8 4	17
Do. Dairy and Meat-curing		8 10	24 8	Miscellaneous	13 6	38	6	Special	15 0	46 8	A	8 4	17
•	Miscellaneous	4 10	12 6	In trucks	4 2	11		Excep.	7 6	22 6	Excep.	6 3	18
Sand		5 4	13 6	(Miscellaneous	13 6	38	•	. HACCP.		mentioned.	захор.		ot mentio
Sawdust				{ In trucks	4. 2		3 }		1				
Scientific Instruments	4	38 3	109 6	4	29 0	87	6	2	30 3	104 0	4	39 6	
Seed—Grass	. 1	17 8	49 4	Miscellaneous	13 6	38	6	Agric. 1	12 3	39 6	Flower 4	20 9 39 6	
Sewing-machines (unpacked)		38 3 29 5	109 6 ·84 10	4.	29 0 25 0	87 75	6 loose }	. '2	30 3	104 0	Packed 4	39 6	112
Shale—Kerosene	Miscellaneous	4 10	12 6	Miscellaneous	13 6	1	6	Excep.	7 6	22 6		No	t name
	В	8 10	24 8	Miscellaneous	13 6	38	6	(Tied) Special	15 0	46 8	A	8 4	
Sheepskins Shingles		5 4	13 6	Firewood	4 2	11	-	((Loose) 1 Timber	20 6 12 6	69 0 37 6	1	14 6 14 6	
Silk Goods		29 5	84 10	2	21 0	62		2	30 3	104 0	4	39 6	1
Slate Slabs	1	38 3	109 6	2 '	21 0	62	-	2	30 0	104 0	3	27 0	
Slates	I .	5 4	13 6	1	16 6	50	,	Excep.	7 6	22 6	Special	10 5	
Sleepers (Railway)	1.	8 10	24 8	Firewood	4 2	1	3	Timber	8 4	25 0	2	20 9	
Soap (except scented and fancy)		17 8	49 4	1	16 6		0	1	20 6	69 0	$\begin{cases} & 1 \\ \text{Fancy} & 4 \end{cases}$	14 6 39 6	
Soda (Crystals)		8 10	24 8	ī	16 6	50		1	20 6	69 0	1	14 6	
Do. (Caustic)		8 10	24 8	1.	16 6	50		. 2	30 3	104 0	2	20 9	57

Spokes and	d Shafts (undressed)	A	5 4	13 6	Firewood	4 2	11 3	" Timber	12 6	37 6	1 .	14 6	38 11
Stone (cut	for building or grindstones)	Mis.	4 10	12 6	Building 2 Grindstones 1	21 0 16 6	62 6 50 0	2	30 3	104 0	Special 1	10 5 14 6	31 3 38 11
Do. (car	ved, and gravestones)	2	21 7	61 2	2	21 .0	62 6	2	30 3	104 0	3	27 0	75 9
Do. (un	dressed)	Mis.	4 10	12 6	Special	7 6	20 0	Excep.	7 6	22 6	Excep.	6 3	18 9
Stocks (ur	idressed)	. A	5 4	13 6	Firewood	4 2	11 3	Timber	12 6	37 6	. 1	14 6	38 11
] Straw		See	page 161.		See page 174.			Agricultural 2	9 0	24 8	Special	10 5 14 6	31 3 38 11
Sugar		2	21 7	61 2	$\left\{\begin{array}{cc} 2\\ 3 \end{array}\right.$	$\begin{array}{ccc} 21 & 0 \\ 25 & 0 \end{array}$	62 6 In mats & bags 75 0 In cases, &c.		20 6	69 0 .	Loaf, loose 4	39 6	112 8
	truck loads)	Excep.	16 8	48 4	()	20 0	75 0 111 00000, 000)					
Sulphuric	Acid	1	17 8	49 4	· 4s	29 0	87 6	2	30 3	104 0	4	39 6	112 8
Tallow		В	8 10	24 8	Miscellaneous	13 6	38 6	Special	15 0	46 8	1	14 6	38 11
Tar		1	17 8	49 4	1	16 6	50 0	1	20 6	69 0	1.	14 6	38 11
Terra-cott	58	\mathbf{A} .	5 4	13 6	÷	Not	named	Not	named		. Not	mention	
Threshing	Machines	3	· 29 5	84 10	3	25 0	75 0	1	20 6	69 0	2	20 9	57 4
Tiles—Ea	rthenware	A	5 4	13 6	Mis.	13 6	38 6	Excep.	76	22 6	Special -	10 5	31 3
Do. Tes	sselated and Ornamental	В	8 10	24 8				Excep.	76	22 6	2	20 9	57 11
	Board, not exceeding 2 inches	A x 50 %	8 0	20 3	1	16 6	50. 0				1	14 6	38 11
	Hardwood in logs, 30 c. ft. to ton)		·						1			
Timber	Other than Hardwood, 40 do	} A	5 4	. 13 6	Timber (sawn)	6d. per	truck per mile.	Timber	12 6	37 6	1	14 6	38 11
	Undressed	}				·		Timber .	12 6	37 6	1	14 6	. 38.11
	Sawn	À x 25 %	6 8	16 11	***************************************								
Tin (smel	ted)	В	8 10	24 8	2	21 0	62 6	,		37 6 206 miles	. 1	14 6	38 11
Tin Plate	S	2	21 7	61 2	2	21 0	62 6	Special	15 0	46 8	. 1	14 6	38 11
i		В	8 10	24 8		Not	named			37 6 206 miles	Excep.	9 0	18 4
Tobacco-	-Colonial leaf	A	5 4	13 6	Special	7 6	20 0	Agricultural 1	12 3	39 6	1	14 6	38 11
· 1:	ases	3	29 5	`84 10	4	29 0	87 6	` 2	30 3	104 0 、	3	27 0	75 9
Tricycles		4	38 3	109 6	4	58 0	175 0	2	30 3	104 0	4	39 6	112 8
Turnips		A.	5 4	13 6	Agr.	5 6	15 0	Agricultural 2	9 0	24 8	: A .	8 4	17 9
Velociped	les	4.	. 38 3	109 6	4	58 0	175 0	2-	30 3	104 0	4	39 6	112 8
Whiting.	· · · · · · · · · · · · · · · · · · ·	. в.	· · · /8 1:0	24 8	1	1 6 6	50 0	Special	15 0	46 8	1	14 6	38, 11
1: -	ting	3 .	.295	84 10	, 4 .	29 0	_c 87 6	Special	15 0	46 8	4.	39 6	112 8
Woolpack	ts	. B .	8.10	24 8	1	16 6	50 0	1	20 6	69. 0	1	14 6	38 11
		See	page 160.		See page 172.			See page 172.	•	-	See	page 172.	
Zinc		2	21 7	61 2	(in cases 2	$\begin{array}{ccc} 21 & 0 \\ 29 & 0 \end{array}$		2 .	30 3	104 0	2	20 9	57 4°
1		*3	29 5	84 10	perforated 4	23 U] 01 0				4 .		1
. 1	. 2											Į., ,	. .

^{*} For all articles not enumerated above.

-NEW SOUTH WALES.	VICTORIA.	QUEENSLAND.	SOUTH AUSTRALIA.
Wool. Per Bale not over 4 cwt.	Wool.	Wool.	Wool.
Southern Line:	50 miles. 150 miles. Per bale, not over 4 cwt. Per bale, not over 4 cwt. 2/4 6/8 Per bale. Portland to Melbourne, 272 miles, 8/11 ,, to Williamstown, 279, ,, 9/5 Bales of wool over 4 cwt. each will be charged 25% additional upon the rate for 4 cwt. for every cwt. or part of a	From Roma to Brisbane, 317 miles	From 35 miles
Northern Line:— From Maitland to Newcastle, 20 miles	cwt. in excess. Dumped wool carried by railway over 50 miles will be allowed -/5, over 90 miles -/9, and over 150 miles 1/2 per bale.		300 fbs., and on dumped wool or otherwise reduced to 18 cubic feet to the bale, carried more than 50 miles by railway, and -/9 per bale if carried over 100 miles.
To washing establishments—15 miles, 10d; over 15 miles to 22 miles, 1/1 per bale. From ,, 15 ,, 1/; ,, 15 ,, 22 ,, 1/3 ,,			Morgan to Adelaide, 105 miles, 4/6 per bale, and drawback of -/6 per bale allowed to consignor of 2,000 bales in one season. Special rate.
· Rates for Live Stock.	Live Stock.	Live Stock.	Live Stock.
Herds, Flocks, &c., when in consignments of not less than one full Truck load.	CATTLE.	CATTLE.	For a single Horse/6 6/-
CATTLE. Per Truck. 100 miles	Pigs or Cattle (in Goods Truck):— Per Truck. 100 miles £3 17 0 150 4 9 6 200 5 18 8 300 8 17 0 Single cattle the same rate as horses.	Roma, 317 miles	For two Horses
Horses. The Commissioner will carry Horses in Cattle Trucks if requested to do so, but only under special contract, relieving him of all responsibility. The charge for Horses so carried will be the same as for cattle in full Truck loads.	The Minimum charge for a Cattle Truck is 20/-, exclusive of a Terminal charge of 2/- per Truck. For each Goat, Pig, or Yearling Calf, up to three, any distance not exceeding 24 miles, by Goods Trains only 2/ And for each mile beyond that distance, to 100 miles	Horses. In Trucks:— Roma, 317 miles	SHEEF. Per large van. s. d. 100 miles
	truck rate. Over three Goats or Pigs and up to ten, half Truck; over ten, full Truck rate.	Sheep.	Company
SHEEP. Per Truck. 7 Other distances. 100 miles £3 3 4 1 to 80 miles, -/8 per truck per mile. 200 ,,	SHEEP. Per Truck 100 miles £3 17 0 150 ,		CATTLE. 100 miles

Per mile.

Pigs.

Same rates per Truck as cattle. Minimum, 15s. Under the foregoing rates for Cattle, Sheep, Horses, and Pigs, no less charge than for one full Truck will be made for each and every Truck uesd.

SMALL CONSIGNMENTS.

i.e., 4 Cows or Oxen, or 10 Calves, or 40 Sheep, or 30 Pigs.	1 Truck, i.e., 2 Cows or Oxen, or 5 Calves, or 20 Sheep, or 15 Pigs	Single Cow or Ox.	Sheep or Pigs, when less than ½ Truck.	Calves when less than ½ Truck.
6d. per mile	4d. per mile	3d. per mile.	½d. each per mile.	ld. each per mile.
Minimum, 10s	Minimum, 7s. 6d.	Min., 7s. 6d. each.	Min., Is. 6d. each.	Min., 2s. each.

Bulls.

The charge for Bulls is 7d. each per mile up to 100 miles, over 100 miles 4d. per mile; if more than one in a Truck, 4d. each per mile; for half a Truck and upwards cattle rates. Minimum, 12s. 6d.

Valuable Rams and Ewes.

If less than half a Truck load, will be charged 2d. each per mile; for half a Truck and upwards, Sheep rates. Minimum, 5s.

When Live Stock is returned from Sydney or Homebush to Country Stations half the foregoing rates will be charged, provided the owners wait the requirements of the Department.

Rates for Fresh Meat in van loads.

To be loaded and unloaded by Owners.

In the case of Beef, the van-load will be limited to 12 Carcases, but this number may be increased provided that a van-load shall not be held to consist of a greater total weight than 4 tons. Where a consignment of beef does not amount to 4 tons, senders will be allowed to make up the van-load with carcases of mutton, pork, or veal. Any weight above 4 tons, whether the number of carcases be more or less than 12, will be charged for at the rate of ad. per cwt. rer mile.

Distance.	Beef, Pork, or Veal. Mutton.	Distance.	Beef, Pork, or Veal.	Mutton.
15 miles and under 25 , , , 30 , , , 35 , , , 45 , , , , 55 , , , 75 , ,	30 0 22 6 36 8 27 6	85 miles and under 95 " " 105 " " 115 " " 135 " " 150 " " Every mile over 150	63 4 66 2 69 0 75 0 81 0 90 0	s. d. 42 6 47 6 49 7 51 9 56 3 60 9 67 6 0 5

Smaller quantities charged actual weight at 3rd class rates. Minimum charge for use of van, 10s.

In the event of the Department not being able to supply Sheep Trucks it does not undertake to provide Goods
Trucks. Every Sheep or Lamb, up to 3, carried any distance not exceeding 24 miles, by Goods Trains only
And for each mile beyond that distance/1
Over 3 and up to 10 animals, half Truck rate; over 10 animals, full Truck

Minimum Charge :-Sheep T 40/-; Goods Truck, 20/-; exclusiv a Terminal charge of 2/- per Truck Sheep Trucks, and 1/- per Truck Goods Trucks.

Store sheep in lots of not less than to be carried from Newmarket to cou stations at 3 published rates, and cattle at 1 published rates, provided trucks are required to load on the journey, again from the Line to w such store cattle and sheep are consis

Fresh Meat.

50 miles, 15 Ciass 2 per ton ...21/-Large quantities per truck...39/6

		_
at not eks it Goods	Quantities not requiring a Sheep Waggon will be charged as under, viz.:— 50 miles and under 1/- per head. 51 ,, to 100 1/9 ,,	
miles, 2/- .t dis- /1 , half	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
Truck Truck, sive of ck for	,	Calves per head Goats ,, Pigs ,,
k for	Pigs in Trucks.	
ın 500	-/6 per waggon per mile.	
untry store	Pigs or Single Calves carried in Guard's Van.	
ed the ne up- which igned.	50 miles and under	,
50 miles 62/6.	Fresh Meat. 50 miles. 150 miles. Class 1	Fresh I
89/6.		Class 2

•••		rresn	meat.	
	miles. 9/		50 miles per ton.	15 P

l50 miles per ton.

•	MTP.M.	POOLU	AA TATTAO.

Live Stock for Agricultural Shows.

To the Show, ordinary rates; and the same from the Show, if sold. Unsold exhibits will be returned to the Stations whence they came, free of charge, and the freight paid for conveyance of same to the Show refunded on production of a certificate from the Secretary of the Agricultural Society to the effect that they are unsold.

Live Stock conveyed to and from Agricultural Shows will be subject in all respects to the General Conditions and Regulations of the Department, except that, when carried free,

it will be entirely at the owner's risk.

Contractor's Plant.

Waggons on wheels, 4d. per mile each; minimum charge, 5s. Locomotive Engines in Steam, Owner's risk only, 2s. 6d. per mile each, in addition to wages of Driver, Fireman, and Guard, and cost of Fuel.

Locomotive Engines on Wheels, but not in Steam, First-class Rates, at Owner's risk only.

How Straw and Chaff-ner Truck.

	nay, or	uaw, anu on	an por rrace.		
	Hay.	Straw & Chaff.		Hay.	Straw & Chaff.
,	£ s. d.	£ s. d.	No. 1 Add and BOO moiles	£ s. d. 2 14 9	£ s. d. 2 8 5
Not exceeding 16 miles	0 10 0	0 10 0	Not exceeding 200 miles	3 2 10	2 15 7
,, ,, 35 ,,	0 17 0	0 17 0	,, ,, 250 ,,	9 11 0	3 2 11
,, ,, 54 ,,	1 4 0	1 4 0	,, ,, 300 ,,	4 7 3	3 17 2
,, ,, 100 ,,	1 11 9	1 8 1	,, ,, 400 ,,	4 12 4	4 4 4
150	2 3 11	1 18 10	,, 450 ,,		2 7 X
Smaller qu	iantities c	charged actual	weight at First Class	rates.	•

Returned Empties.

FREIGHT MUST BE PREPAID.

	Not exceeding—											
,	50 M	iles.	100 1	Miles.	200	Miles.	300 1	Miles.	400	Miles.	500 M	iles
Bags in bundles, bales, or bags (minimum charge 1 cwt. per package) per cwt.	s. 0	d. 3	s. 0	d. 6	s. 0	_	s. 0		s.	d. 0	s. 1	d. 2
Coops and Cases (except fruit cases) measuring under 6 cubic feeteach Do. do. over 6 and under 15 cubic feet each	0	2	0	3	0	4 9	0	.5 11	0	6	0	7 2
Do. do. over 15 and under 25 cubic feet each Do. do. over 25 cubic feet	0	6	1	0 6	1 2	6	1 2	10	3		2 3.	4 6
Hogsheads	0 1	6	1 2	0	1 3		2 3	3 6	3	_	3 4	0
Quarter-casks,	0 1	3 0.	0 2	6 0	0 3	•	0 3	11 6	1 3	9	1 4	2 0

All other returned empties as may be agreed upon. Empty cases, measuring not more than 8 cubic feet will be carried free.

Live Stock, &c. for Agricultural Shows.

VICTORIA.

Implements to the Show, ordinary rates; and the same from the Show, if sold. Unsold exhibits will be returned free, and amount of the freight paid for conveyance of same to the Show refunded on production of certificate from the Secretary of the Society to the effect that they are unsold.

Live Stock and produce will be returned free and a refund made of one-half the freight paid

to the Show if exhibits are not sold.

The above regulations are only to apply if the exhibits are conveyed in cattle waggons and by goods trains, and no reduction in the ordinary rates will be made if conveyed in horse-boxes or by passenger trains.

or by passenger trains.

Poultry and Dogs will be charged full rates
both ways. Buggies, Drays, and Waggons are
not classed as Agricultural Implements, and arc charged full rates both ways.

Contractor's Plant.

Waggons -/3 per Truck per mile; minimum charge, 15/-.

Chinge, the Light engines in steam, 1/6 per mile. Train of 10 waggons, contractor's engines and men, or haulage of engine of wheels, but not in steam, 2/6 per mile; minimum, 50/-. When Department finds engine and men, for empty trucks 5/- per mile; minimum, 50/-; for full trucks, 7/6 per mile.

Hay and Straw—Loose—per Truck.

			Hay	r	Str	w.
		miles	£ s.	đ.	£s.	d.
Not e	exceeding	20	0 17	6	0 15	0
	-	30	1 2	6	1 0	0
"	,,	50	1 12	6	1 10	0
,,	**			-		
,,	,,	100	2 13	4	2 10	10
,,	,, .	150	3 14	2	3 11	8
		200	4 15	0	4 12	6
"	,,	250	5 15	٦Ň	5 13	4
,,	,,	200	5 15	10	9 13	-
Dont	of a Truck t	to he cha	roed as:	a ful	l truck	

Returned Empties.

Į	50 miles. 150 miles.
	Pipes, each
ļ	Tallow puncheons $1/ 2/-$ Hogsheads $-/9$ $1/6$
	Hogsheads/9 1/6
	Quarter-casks & barrels/6 1/-
١	Kegs/6 -/9
	Cases, drums, cans, carboys, crates, butter
	boxes, and fowl coops, miscell. rate,
	50 miles, 13/6 per ton; 150 miles,
	38/6 per ton: min/6.
	Fruit cases, special, 50 miles, 7/6 per
	ton; 150 miles, 20/- per ton; min.,
	-/6.
	1

Live Stock, &c., for Agricultural Shows.

QUEENSLAND

Not named.

Contractor's Plant.

Not named.

Hav and Straw-Loose.

To Brisbane and Ipswich only-Warwick-166 miles, 17/6 per ton. Toowoomba 100 ,, 12/6 ,, Hay, straw and chaff, pressed (generally.) Agriculture 2-50 miles 9/2 per ton. 150 ,, 25/-

Returned Empties.

		niles.	175 miles.
	Pipes and tierces	1/-	2/.
	Hogsheads and quarter-		
	casks	-/6	1/-
	Kegs, boxes, and small	•	•
	fruit cases	-/3	-/6
	Grain bags, bundles of,	,	,
	not more than 2 cwt.	1/-	2/-
•	G		1
,	Carriage to be pr	epaia	•

Live Stock, &c., for Agricultural Shows.

SOUTH AUSTRALIA.

Exhibits sent by rail to any Show will be returned free on production of certificate from the Secretary that they are unsold.

Contractor's Plant.

Materials used by Contractors in construction of new Railway lines, or of new buildings, will be conveyed at owner's risk at 13d. per ton per mile; minimum, 3 tons to each truck.

Hav and Straw.

Special class-50 miles, 10/5 per ton. 150 ,, 31/3 ,,

Returned Empties.

i	· · · · · · · · · · · · · · · · · · ·	50 miles.	150 miles.
	Hogsheads	1/-	1/10
١	Quarter-casks	/8	1/1
	Bags, per bale of 25		1/1
ł	Fruit cases not exceed		·
	2 cub. ft. measureme	nt 50:	miles, -/3
		150	,, -/6
	Bottle-cases, casks, a		" .
ł			
1	10-gall. kegs, not		
	ceeding 5 cub.	it.	
	measurement		miles, -/6
ı		150	,, -/11
	Empties, not being		double
	Empties, not being	recurns	, acabie

the above rates.

Horses. IN BOXES:—Full horse-box (3 horses, one owner), 1s. per mile; minimus charge, 15s.; one horse, 5d. per mile; two horses, 9d. per mile; minimum charge 7s. 6d. each; stud horses, 1s. per mile each, minimum charge, 15s. Mares, with foal at foot, rate and a half. A reduction of 25 per cent. on the above charges will be made on every mi beyond 150 and up to 200, and over 200 miles, 50 per cent, per mile will be allowed FOR AGRICULTURAL SHOWS. To the Show, ordinary rates, and the same from the Show if sold. Unsel Exhibits returned free and freight paid for conveyance to the Show refunded. FOR RACE MEETINGS. To the Races, ordinary rates, and the same from the Races if sold. If unsol they will be returned free of charge.

HUNTING HORSES AND DOGS.

Horses going to the Chase, single fare for the double journey. Dogs, ad. p mile each to 50 miles, and 4d. additional for every 30 miles or part of 30 miles thereafter; minimum charge, 6d.

Carriages.

. Carriages, gigs, and dog-carts, 4d. per mile, each; two vehicles, one owner, if of one Truck, 6d. per mile; 4-wheeled waggons and bullock drays (empty), 6d. pe mile; minimum charge, 7s. 6d.

A reduction of 25 per cent. on the above charges will be made for every mil beyond 150 and up to 200; and over 200 miles, 50 per cent. per mile will be allowed

Dogs

50 miles, 2/1; 150 miles, 3/5.

Gold Dust and Bullion, and Gold and Silver Coin.

The Commissioner for Railways will not be responsible for the safe conveyance of gold dust and bullion, or gold and silver coin, &c., as the following charge are made, and the gold dust and bullion and coin carried, on condition of its bein in charge of owners and at their risk.

Gold dustand bullion 報 100 ozs.	, 2/	not over 100 miles. . 3/6 .	. 4/3 .	. 5/	. 5/6 .	. 6/	6/6
Gold coin, \$\pi\$£100 .	/6	/10 .	. 1/3 .	1/8	2/-	2/3	2/6
Silver coin, \$\pi\$£100 .	1/-	. 1/9 .	. 2/6 .	3/3	3/6	3/9	4/–
Fractions over 100 an	d under 50	will not be o	charged, but	fractions of	f 50 and ove	r will be cha	arged as 100.

	Rates for Milk.	
In quantities of not le	ss than 300 gallons, less than 300 gall	ons double rates.
15 miles and und	er	4d. per gallon.
40 ,, ,,		½d. "
90 ,,		3 d. ,,
Empty cases retu	imad frae	1d. "

	,
um ge, ith ille ed.	Horses. Each mare, gelding, or filly, not exceeding 40 miles 20/- Each mile beyond 40 miles/6 Each stud horse not exceeding 20 miles 20/- Each mile beyond 20 miles
old	,
per les	•
	Carriages.
on per ile ed.	Carriages, gigs, dog-carts, and vehicles, of a similar description will be charged for at the rate of -/6 per mile, subject however that the sum of 20/- shall be the minimum charge in any case. Two vehicles, one owner on same truck, if owner accepts all risks, -/9; three vehicles, 1/- per truck per mile, minimum 20/-; vehicles for repair, return tickets will be issued at 50 per cent. addition on above rates.
	Dogs.
,	50 miles, 2/1; 150 miles, 6/3; minimum charge, -/6.
ice ges ng	
ice	,
es.	
	• •

WIIK.		
	50 miles.	150 miles
	19/6	2010

Horses-	in Boxes.	_
100 miles and under -, 100 to 200 miles, 200 to 300 miles, Over 300 miles, Minimum charges, 5s	/3/2/1/1/1/1/1/1/	
Entire 100 miles and under 100 to 200 miles 200 to 300 miles Over 300 miles	One horse Toper mile. /6/5/4	-/4 ,, -/3 ,,

Carriages. 100 miles and under-/4 per mile each. 100 to 200 miles/3 , 200 to 300 miles-/2 Over 300 miles....../1 ,, Minimum charge, 5s. each.

Dogs.

Dogs, 50 miles, 2/6; 150 miles, 5/-.

Gold and Gold Dust, and Gold and Silver Cóin.

			150	
Gold & gold dust, \$\psi\$ 100 c	ozs.	8/-		11/-
Gold coin, \$\psi \pm 100\cdot\tau		2/6		5/6
Silver coin, \$\P\$ £100		4/6	•••••	8/-
, -				

Milk.

In Cans of not less than 6 gallons. 25 miles and under -/1 per gallon. Over 25 miles -/1½ Cans returned free.

Horses. Horse Box 1/- per mile, minimum, 8/-

Carriages.

Gigs, dog-carts, and light drays (empty) weighing not more than 10 cwt., -/3, per mile; minimum charge, 3/-. Carriages, and waggons, and drays

weighing not more than 25 cwt. (empty), -/4 per mile; minimum charge, 4/-.

Ditto, ditto, over 25 cwt. (empty), -/6 per mile; m nimum charge, 6/-

Milk.

Not mentioned.

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SOUTH AUSTRALIA.		Parcels under £10 value.	Any Weight For every distance not exceeding 501bs., ceeding 251bs, 501bs, 1001bs, to 3001bs.		S. d. s. d. s. d. s. d. s. d. S. d.	6 6 8 9 6 9 6 9 6 9 6 9 6 9 9 6 9 9 9 9	2 2 3 4 6 1 2 2 3 3 3 3 5 6 4 6 1 2 2 3 5 6 7 5 6 7 5 7 6 7 6 7 7 7 7 7 7 7 7 7	250 2 6 3 3 5 0	Double rates charged on furniture musical instruments, and other light			-			-			
	-	,	•			·				Parcel	1	-		roll-	Joint	s of Meat	Bag	s or
			Miles.			a	lbs. nd der.	7 lbs and Unde	l	14 lb: and Unde	.	28 lbs. and Under		56 lbs. and Under.	28 lbs.	cceeding (Owners' isk.)	Baske Bread ceeding	not ex-
QUEENSLAND.			5			. 1	6 0 6 0 6 9	0 6 0 8 1 8 2 6 2 6	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	s. 0 6 1 1 6 2 6 2 3 6 3 6 3 8	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	s. d. 0 9 1 3 1 6 2 3 2 6 2 9 3 0 3 6 3 9		s. d. 1 3 1 6 2 0 2 9 3 6 4 3 4 6 5 3 6 0	S. 0 1 1 1 2 2 2 3 3	6 6 6 6 9 3 3	s. 0 1 1 1 2 2 2 2 2	d. 6 0 0 6 0 6 6 6 6
10		charge	All Packag Opium, dou Parcels ove d, and the Newspaper Hats and n Packed par	ıble ı r £10 valu parc nillin	rates. O value a e of pare eels and erv cha	ind und cels dec despato reed do	der £5 dared, ches, he	0, double the Consider rates ate.	le rate imissio ; min	e, and oner wi imum mile;	II not charge minin	noid nii e, 6d.	mseli re	rate. sponsihl	Althou e for c	gh thes	se rate	s are
		***	· .		· .			0rdi	inary	Parc	els R		the viole	of the Clar	nior no	t Stumpe	d and v	ndar
							At the risk of the Owner, Stamped.				At the risk of the Carrier, not £10 in valu						· · ·	
		Miles.				Not over.			For every 28 lbs. or portion 14 lbs: 28 lbs.			1,,,,,	Not over.			- 28 1	every bs. or tion	
A					28 lbs.	56 lbs.	84 lbs.	112 lb	there	of, add	l. 14 lbs:	28 lbs.	56 lbs.	84 lbs. s. d.	112 lbs		f, addl.	
ICTORI		S. d. O. 3				s. d. 0 6 0 9 1 0 1 3 0 3	s. d. 1 0 1 6 2 0 2 6 0 6	s. d. 1 6 2 3 3 0 3 9 0 9	s. d 2 0 3 0 4 0 5 0 1 0	() 6) 9	0 4 0 6 0 8 0 10 0 2	0 8 1 0 1 4 1 8 0 4	1 4 2 0 2 8 3 4 0 8	2 0 3 0 4 0 5 0 1 0	2 8 4 0 5 4 6 8 1 4	0 1 1 1 0	8 0 4 8
Δ	o v	Packed Parcels in hampers, cases, &c., to be charged quadruple the above rates. Perishables, including Fish, Fruit, Butter, Eggs, Poultry, &c., to be charged the above rates or 4th Class Goods Rates (except Fish, carried 100 miles, 4d. per ton per mile; 100 to 200, 3d.; over 200 miles, 2d. per ton per mile, and 1d. per ton termi nal added). Bicycles, Feathers, Furniture, Glass, Hat Boxes, Millinery, Mirrors (loose), Musical Instruments, or other articles light and fragile, will be charged 50 per cent. additional on the above rates. Corpses, under 40 miles, 20s. each; above 40 miles, 6d. per mile. Books (Library) returned free. Commercial travellers samples over 1½ cwt. carried at 50 per cent. reduction on rates.																
NEW SOUTH WALES.		Parcels Rates.	3 lbs. Over	d. s. d. s. d. s. d. s. d. s. d. s. d.	0 3 0 4 0 6 0 8 0 10 1 0 1 2 0 3 0 9 0 10 0 1 2 0 0 3 0 9 0 10 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0	respectively for every additional or \(\) \(\) \(\) \(\) \(\) \(\) \(\) \(\		1 cwt., 25 per cent. reduction on parcel rates; minimum rates, 3d. Musical Instruments, packed in cases, 25 per cent. added to above rates. Sawing Machines, packed in cases, ordinary rates, but when unpacked double rates will be charged. Sawing Machines, packed in cases, ordinary rates, but when unpacked double rates will be charged. Bath Chairs, Perambulators, Velocipetes, and Bicycles, requiring a carriage truck for the con-				Not exceeding 15miles	cels 50 per cent. additional will be charged.	and under. additional. 100 miles 2 100 miles 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	ulating Libraries, one-fourth parcel			

No. 55.

RETURN of the number and nature of the Accidents, and the Injuries to Life and Limb, which have occurred on the Great Southern, Western, and Northern Railways, from 1st January to 31st December, 1883.

	•				Passeng or in	ers kil		Serv	or of the	Contra	partmen		espassers	
	ate of cident.	Line of Railway.		be	n causes eyond eir own	the miss	From eir own conduct	b	m causes eyond eir own	th mis	From eir own sconduct	ow	om their	
					ntrol. Injured.	Ca. Killed	want of ution. Injured.		ntrol. Injured	_ <u>ca</u>	want of ution.	-	aution.	
	883.	İ								<u> </u>		1	1	
1	Jan	1			•••	ï		:::	2					Scalded by passing engine at Darling Harbour. Stepping between carriage and platform at
2	,,	,,		•••	•…	1								Newtown. Knocked off platform at Newtown by passing engine.
9	,, ··	Southern Suburban					•••			1				Run over by goods train near Liverpool. Run over while crossing line at Granville.
16	"	1		•••		•••	1							Falling from brake-van between Penrith and Nepean Bridge.
21 28	"	1 .		•••			•••					1 1		Run over by train at Rookwood. Killed at Darling Harbour.
29 11]	" Feb				•••						··· ₁	1		Killed at Burwood by passing train. Gatekeeper at West Maitland knocked down
12	,,	. Western									1			by mail train. Shunter run over by truck while shunting at
13	,,									1				Bathurst. Killed at Bathurst while shunting.
23 24	,,	,,	$\ \ $	 			1		•••		··· ₁		.,	Leaving train while in motion at Ashfield. Foot crushed while shunting in Sydney Yard.
26	,,	Northern	•••		•••	1			•••					Jumping out of carriage window whilst train was in motion.
	Иаг	,,		***		•••		•••	•••	1				Ganger killed at Turrawan through train colliding with trolly.
3 7	,,		::				•••	·	•••	1				Run over by engine in Sydney Yard. Foot crushed while shunting at Nevertire
"	,,	Northern	"			•••			•••	***	1			Contractor's horse-driver at Bullock Island slipped while shunting coal trucks, and run
10	" …	,, .							•••		,	1		over by train. Killed whilst trying to rescue her child which trespassed on Newcastle Coal Company's
19	,,	Western . Southern .									1			Knocked down by engine at Bathurst.
1 7 =	" …										ï			Injured by Camden tram. Servant of Contractor. Crushed between trucks
1 90	,,	Northern .	* 1							1 	"i			at Wingello. Run over near Boggabri. Traffic Inspector fell through open bridge at
2 A	pril	Western .	.								1			Legs cut off. Jumping from train while in
0.4	,, ,,	Suburban . Northern .									1 1			motion at Blacktown. Arm crushed while shunting at Darling Harbour. Shunter. Leg broken and foot crushed when
29 4 M	,, Íay	Suburban . Western .	- 11								1	 1		shunting at Newcastle. Leaving train while in motion at Sydney.
11 ,	"	Southern											1	Contractor's servant. Run over by ballast-train at Nevertire. Falling over Guildford Bridge.
16 ,	,, ···	Western	- !!		4	:::		1	2					Injured in collision at Parramatta. Killed in accident at Zig-Zag.
29 , 13 Jı	" une	Southern Suburban	11		•••		1		٠		î			Arm crushed while shunting at Junee Junction.
22 ,	,,	Western			;						1			Leg broken. Jumping from train at Newtown. Leaving train while in motion at Sydney. Lawn felling between belief siding and Dally.
	aly	Suburban	1			• • [1	Lamp falling between ballast siding and Dubbo. Crossing line at Homebush; knocked down by passing train.
7 , 11 ,	-	South-Western Suburban	- 11		l l						ï	1		Run over by train at Narrandera. Guard fell from truck at Eveleigh.
23 ,	i	. ,,	1					•••	1					Leg broken by "chairs" falling upon it at Eveleigh.
17,	ug	" "	Ш		- 1						1		··;	Falling from train near Homebush. Injured while loading timber at Darling Harbour.
25 ,, 30 ,,	,	" ··	Ш				ï				1			Labourer run over by waggon at Eveleigh. Falling from brake-van at Petersham.
3 Se	,)) · · ·	11		1		1					•••		Falling from train at Petersham. Leaving train in motion at Granville
22 ,, 4 Oc		"	И		:					:	1			Labourer injured by fall of earth at Eveleigh. Knocked down by train at Newtown
6 ,, 13 ,,		,,	∦:	::							1		1	Leaving train while in motion at Ashfield. Knocked down by goods train at Macdonald
16 "	,	Western	╢.									1		Knocked down by goods train near Gosling
19 "	,	Northern		:					1					Injured while unloading material at Kelly's
			<u>ľ.</u>	_2 6				- [Plains.

No. 55—continued.

Date of Accident.	Line of Railway.	From be	Passenge or inj n causes yond ir own ntrol.	ured. Fi	rom ir own onduct vant of ution.	From be their	nts of the C killed or causes yond ir own atrol.	ontrac injure F the miso	tors,	From own cas	n their want of	Nature and Cause of Accidents.
1883. 24 Oct 25 , 27 , 30 ,, 5 Nov 13 , 27 , 28 , 30 , 12 Dec 24 ,	Northern ,, Southern Western					1 2		Killed.	1 1	1 1 1 1 1 11		Shunting at Dubbo. Crushed between trucks at Granville. Run over by train at Parramatta. Plumber fell from roof of house at Penrith. Labourer injured by fall of earth at Eveleigh. Porter crushed between buffers at Quirindi. Man threw himself in front of passenger train. Collision between two engines at Murrurundi. Fettler struck on the head by piece of coal which fell from passing engine. Run over at Dubbo. Bun over by train at Orange.

No. 56.

RETURN of the number and nature of Accidents, and the Injuries to Life and Limb, which have occurred on the Tramways, from 1st January to 31st December, 1883.

75.4	Servants of th	e Department.	Passer	igers.	Other than and Ser		Nature and cause of Accidents.
Date.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	
1883.					1		Woman attempting to enter car whil
5 January			,		1		in motion at Paddington.
6 ,,				••• •	1		Man threw himself in front of tram i motion in Elizabeth-street.
4 ,,				••••••••	••••	1	Woman threw herself on rails in from
0 "		1		•••••	<i>′</i>		Run over by motor when shunting a Bridge-street terminus.
0 ,,			••••••	 	••••••	1	Woman struck by motor, attempting cross line in front of tram in motion George-street West.
5 February			•••••	1			Fell out of tram while in motion Botany.
0 "			***************************************	4	*******		Tram-car overturned at Elizabeth-stre junction; four passengers slight injured.
7 ,,				1			Woman leaving car while in motion Liverpool-street.
3 ,,			,			- 1	Cart collided with motor at Gle Point; driver of cart injured.
26 ,,		1					Injured while shunting at Bridg street terminus.
6 March .						1	Girl struck by motor while crossi line in front of moving tram.
17 ,, .				1			Leaving car while in motion. Man attempting to enter car while
.9 ,, .						1	motion: slightly injured.
.7 ,, .		1				,	Conductor knocked off foot-board piece of timber projecting fr passing dray at Ross-street.
.5 April						.1	Collision between horse and motor Glebe Road; rider of horse injur
16 ,, .						1	Cab collided with tram at Newtov driver of cab injured.
21 ,, .						1	Collision between cab and motor Enmore; driver of cab injured.
22 ,, .				1			Fell from tram in motion in Oxfo
26 ,,				1			Struck by motor, which had been a dentally started at sheds, Belm
1 June						1	Park. Motor collided with cart in Pitt-stre
0				1			driver of cart slightly injured. Injured by tram backing forcibly again buffer-stops.

No. 56-Tramway Accidents-continued.

Date.	Servants of th	e Department.	Passer	ngers.	Other than and Se	Passengers rvants.	Nature and cause of Accidents.
Date.	Killed.	Injured.	Killed.	Injured.	Killed.	Injured.	Nature and cause of Accidents.
23 June			•••••			1.	Collision between motor and buggy in Oxford-street.
23 ,, 28 ,,		••••••	1			1	Alighting from car while in motion. Collision between tram and 'bus in
17 July 18 ,,	3		********			1 2	Regent street. Boy struck by motor, Parramatta Road. Collision between motor and cart, Newtown Road; two persons slightly
19 ,,			••••	1			injured. Woman falling out of car on Waterloo line.
Ž4 ,,		1	••••••				Van collided with tram-car in Liverpool- street; conductor knocked off foot- board.
27 ,,						1	Collision between motor and cart on Botany line; driver of cart injured.
9 August			······ <u>;</u> ·		•••••	1	Collision between tram and cart near Belmore Park; driver of cart slightly injured.
19 ,,		1			******		Fettler injured while lifting rails near Bridge-street.
20 ,, 11 September		1	············		1		Fireman struck post, Newtown Road. Run over by tram, while attempting to cross line in front of same, in
16 ,,				1	*******		Liverpool-street. Boy leaving car while in motion on Glebe Road.
21 ,,				1	•••••		Attempting to get on car while in motion.
22 ,,		·		1			Man leaving car while in motion in George-street.
28 ,,				•••••	1		Man run over by tram at Gardener's Lane loop, Botany line.
28 ,, 18 October				1	1		Man run over by tram on Botany Road. Falling from car while in motion at Newtown.
,,	. 1						Conductor fell off car while in motion at Waverley.
20 ,, 30 ,,	1		· · · · · · · · · · · · · · · · · · ·	······	1	1	Run over by tram on Parramatta Road. Child run over by tram between Goulburn and Campbell Streets.
31 ,,			1				Leaving car while in motion in Oxford- street.
19. November 28 ,,	1	-				1 1	Run over by motor in Elizabeth-street. Collision between van and motor in Bent-street; driver of van slightly injured.
16 December 22 ,,			,1				Girl leaving car while in motion. Falling from car while in motion on Botany line.
Total	. 1	6	4	15	6	19	•

No. 57.

Return of the Number of Passengers, Tonnage of Goods, Earnings and Working Expenses, Total and per Train Mile, percentage of Working Expenses to Gross Earnings, net Earnings, Capital Invested on Lines Open, and Interest on Capital each Year, from 1855 to 1883, inclusive.

Year.	Length of Line. 31 December.	Number of Passengers.	Tonnage of Goods.	Earnings from Coaching Traffic.	Earnings from Goods Traffic.	Total Earnings.	Working Expenses.	Earnings per Train Mile.	Working Expenses per Train Mile.	Percentage of Working Expenses to Gross Earnings.	Net Earnings.	Capital expended on Lines open.	Interest or Capital.
1855	Miles.	No. 98,846	Tons.	£ 9,093	£ 156	£	£	d.	đ.	₩ cent.	£	, £	P cent.
1856	23	350,724	2,469	29,526	_	9,249	5,959	157.34	101.32	64.43	3,290	515,347	•638
1857	40	329,019	20,847	í l	2,757 8 42 m	32,283	21,788	113.32	76.48	67.49	10,495	683,217	1.236
1858	55	376,492	33,3 ⁸ 5	34:970	8,417.	43,387	31,338	96.28	69.75	72.53	12,050	1,023,838	1.149
1859	55	425,877	43,020	45,858	16,451	62,309	43,928	102.69	74.21	70.50	18,381	1,231,867	1.492
, 186o	70	i		46,502	15,258	61,760	47,598	100.41	77*38	77.07	14,162	1,278,416	1.102
1861	1	551,044	55,394	45,428	16,841	62,269	50,427	83.37	67.52	80.08	11,841	1,422,672	*832
	73	595,591	101,130	49,637	25,3 ⁶ 7	75,004	61,187	83.77	68.34	8í·58	13,817	1,536,032	•899
1862	97	642,431	205,139	62,096 ,	41,775	103,871	68,725	90.49	60.07	66.16	- 35,146	1,907,807	1'842
1863	124	627,164	218,535	71,297	52,644	123,941	96,867	94.38	73.76	78.16	27,073	2,466,950	1.092
1864	143	693,174	379,661	81,487	66,167	147,653	103,715	85.30	59'92	70.54	43,938	2,631,790	1.669
1865	143	751,587	416,707	92,984	73,048	166,032	108,926	82.42	54.07	65.60	57,106	2,746,373	2.079
1866	143	668,330	500,937	85,636	82,899	168,535	106,230	82.49	51.99	63.64	62,305	2,786,094	2.236
1867	204	616,375	517,022	87,564	101,508	189,072	117,324	82.03	46.87	62.08	71,748	3,282,320	2.182
1868	247	714,563	596,514	99,408	124 951	224,359	144,201	70.06	45.03	64.59	80,158	4,060,950	1.973
1869	318	759,635	714,113	109,427	155,548	264,975	176,362	71.17	47.37	66.57	88,613	4,681,329	1.892
1870	339	776,707	766,523	117,854	189,288	307,142	206,003	81.81	54 [.] 86	67.08	101,139	5,566,092	1.817
1871	358	759,062	741,986.	129,496	225,826	355,322	197,065	91.22	50.79	55.46	158,257	5,887,258	2.688
1872	398	753,910	825,360	164,862	260,127	424,989	207,918	98.43	48.15	48.92	217,071	6,388,727	3'397
1873	403	875,602	923,788	178,216	306,020	484,236	238,035	104.71	51.47	49'16	246,201	6,739,918	3.623
1874	403	1,085,501	1,070,938	188,595	. 347,980	53 ⁶ ,575	257,703	103.00	49.21	48.03	278,872	6,844,546	4.024
1875	473	1,288,225	1,171,354	205,941	408,707	614,648	296,174	100'20	48.28	48.18	318,474	7,245,379	4.396
1876	509	1,727,730	1,244,131	233,870	459,355	693,225	339,406	98.20	48.22	48.96	353,819	7,990,601	4.428
1877	598	2,957,144	1,430,041	271,588	544,332	815,920	418,985	92.95	47'73	51.32	396,935	8,883,177	4.468
1878	6881	3,705,733	1,625,886	306,308	596,681	902,989	536,988	81.62	48.54	59.47	366,001	9,784,645	3'741
1879	7341	4,317,864	1,720,815	319,950	632,416	952,366	604,721	77*94	49.49	63'49	347,645	10,406,495	3,341
1880	8491	5,440,138	1,712,971	390,149	770,868	1,161,017	647,719	86.03	47.99	55'79	513,298	11,778,819	4.328
1881	9951	6,907,312	2,033,850	488,675	955,551	1,444,226	738,334	88.33	45.16	51.15	705,892	13,301,597	5'3°7
1882	1268}	8,984,313	2,619,427	587,825	1,111,038	1,698,863	934,635	84.05	46.54	55:02	764,228	15,843,616	5.132
1883	13201	10,272,037	2,864,566	661,751	1,269,713	1,931,464	1,177,788	78.07	47.61	60'97	753,676	16,905,014	4·484

No. 58.

Statement of the number and classification of persons employed on the Railways and Tramways of New South Wales during 1883.

No.	Tramways of New South Wales dur	
	1 OSIGOLI.	Rates of Pay—lowest and highest.
	HEAD OFFICE.	
I	Commissioner	£1,250 per annum.
l i	Secretary Chief Clerk	1 £700
2	Land Valuers	Caro and Cina
3	Draftsmen	face to fine
1	Accountant	fero non annum
1	Assistant Accountant	1 £400
I	Chief Cashier and Paymaster	£450
;	Cashier Examiner of Accounts	£400 ,,
1	Book-keeper (Principal)	£375 ,, £350 ,,
1	Book-keeper (Principal) ,, (Assistant)	£300 ,,
53	Olding	and main must be decision
5 8	Conveyancing Clerks (Crown Solicitor's Office)	fronta fron non annum
· I	Messengers Housekeeper	
82	Total.	£60 per annum.
	ATIDIT OFFICE	
1	Traffic Auditor	£450 per ennum
1	ALBERTONIE CO.	1 #30#
I	Chief Clerk	faro
· 6	1 Inspectors of Station Accounts	Coor to Coop
	Clerks (15 Audit, 19 Statistical, 6 Tramways)	. £52 to £275 ,,
49	STORE.	
1	Superintendent of Stores	£450
2	Storekeepers	face
32	Cierks	
2	Foremen	
1 5	Assistant Foreman Watchmen	. £165 per annum.
. I	Messengers	69 non dore
56	issuers, Assistants, Gangers, Talleymen, Storemen, and	6s. per day.
	Labourers.	, a to too por any.
100	Total.	
	ENGINEER-IN-CHIEF'S BRANCH.	
	OFFICE STAFF.	
I	Engineer-in-Chief	£1,800 per annum.
I	Inspecting Engineer	£800
I	Assistant Engineer for Trial Surveys	£700
1	Chief Draftsman	£700 ,,
31	Drattsmen	faco to fire non annum
ĭ5	Assistant Draftsmen	for ner annum to the mon diam
1	Unief Clerk	£500 per annum.
8 12	Clerks	£52 to £250 per annum.
12	Cadets	£52 per annum, or 7s. per day when in the field.
I	Custodian of Plans	£125 per annum.
3	Messengers	1 at £100, 1 at £75 per annum,
76	Total.	and 1 at 10s. per week.
	FIELD STAFF.	
14	District Engineers Assistants to District Engineers	£350 to £600 per annum. £150 to £300 ,,
36	Durvevors	Free to Pice
46	Inspectors, &c. Chainmen, &c.	9s. to 18s. per day.
252	Unainmen, &c.	5s. to 9s. ,,
360.	Total.	1
436	Total, Engineer-in-Chief's Branch.	1
	ENGINEED TOD DESCRIPTION	į
	ENGINEER FOR EXISTING LINES OF RAILWAYS	·
	AND TRAMWAYS. OFFICE STAFF.	
ı	Engineer for Existing Lines	£1,000 per annum.
1	First Clerk	C
I.	Draitsman and General Inspector of Buildings	£350
10	Draftsmen	£2 10s. per week to £350 per
4	Cadets	annum.
5	Cierks	£2 per week to £200 per annum.
I	Messenger	£100 per annum.
23	Total.	•
	TOGONOMINE	Ī
.	LOCOMOTIVE ENGINEER'S BRANCH.	
I	Locomotive Engineer First Clerk	£750 per annum.
6	Draftsmen	£450
I.	Cauet	frod non annum
14	Clerks	£50 to £300 per annum.
23	Total.	
		İ

No. 58—continued.

Statement of the Number and Classification of Persons employed in the Engineer for Existing Railways Branch, year 1883.

	District Engineers.	Superintendent.	Draftsmen.	Cadets.	Clerks.	Timekeepers.	Foremen.	Inspectors.	Sub-Inspectors.	Gangers.	Labourers.	Labourers— Flying Gangs.	Carpenters.	Břicklayers.	Masons.	Plasterers.	Painters.	riumpers.	Blacksmiths.	Pattern-makers.	Fitters.	Engine-drivers.	Machinists.	Turners.	Boiler-makers.	Riveters.	Tinsmiths.	Gatekeepers.	Guards.	Watchmen.	Fencers.	Boys.	Carters.	Quarrymen.	Asphalters.	Total.
£500 per annum £350 £300 £300 £250 £200 £2105 £1105 £140 £135 £125 £120 £110 £140 £300 £300 £300 £140 £135 £125 £120 £110 £30 £30 £30 £30 £30 £30 £			1		111111111111111111111111111111111111111			2																		1										4381122112348111111111332211111122111221

No. 58—continued. STATEMENT of the Number and Classification of Persons, &c.—continued.

	District Engineers.	Superintendent.	Surveyors.	Draftsmen.	Cadets.	Clerks.	Timekeepers.	Foremen.	Inspectors.	Sub-Inspectors.	Gangers.	Labourers.	Labourers— Flying Gangs.	Carpenters.	Bricklayers.	Masons.	Plasterers.	Painters.	Plumbers.	Blacksmiths.	Strikers.	Pattern-makers.	Fitters.	Engine-drivers.	Machinists.	Turners.	Boiler-makers.	Riveters.	Tinsmiths.	Gatekeeper.	Guards.	Watchmen.	Fencers.	Boys.	Carters.	Quarrymen.	Asphalters.	Total.
12s. per day 11s. 10d. ,, 11s. 8d. ,, 11s. 6d. ,, 11s. 4d. ,, 11s. 4d. ,, 11s, 10s. 8d. ,, 10s. 6d. ,, 10s. 4d. ,, 10s. 6d. ,, 9s. 6d. ,, 9s. 6d. ,, 9s. 6d. ,, 9s. 6d. ,, 9s. 4d. ,, 9s. 6d. ,, 9s. 4d. ,, 9s. 6d. ,, 9s. 4d. ,, 9s. 6d. ,, 9s. 4d. ,, 9s. 8d. ,, 8s		ļ				1		1	2	1		11096	596	2					11		388 1			2 1 1		1	· · · · · · · · · · · · · · · · · · ·				2	· · · · · · · · · · · · · · · · · · ·			13	::::::::::::::::::::::::::::::::::::::	1	43 10 53 26 63 46 38 14 27 66 16 22 4 4 36 14 31 5 30 7 32 5 1738 1 4 11 11 11 12 12 12 13 14 15 16 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18
	4	1	. 8	4	3	21	4	13	33	29	388	1103	596	190	22	14	3	31	. 21	33	41	2	15	5	12	3	2	7	11	1	7	2	15	104	13	2	1	2764

No. 58—continued.

LOCOMOTIVE DEPARTMENT.

STATEMENT of the number and classification of persons employed in the Locomotive Branch, year 1883.

Rates.	LocomotiveOverseer	LocomotiveForeman	Clerks.	Inspectors.	Shed-inspectors.	Engine-drivers! (Locomotive).	Engine-drivers (Stationary).	Firemen.	Cleaners.	Fitters.	Turners & Machinists	Blacksmiths,	Strikers.	Boilermakers.	Assistant Boiler- makers.	Pattern-makers and Carpenters.	Painters.	Assistant Painters.	Carriage and Waggon Builders.	Labourers.	Fuelmen.	Pumpers.	Timekeepers.	Foremen.	Brass moulders, Finishers, and Coppersmiths.	Gangers.	Carriage-trimmers.	Tinsmiths.	Carriage-lifters.	Improvers.	Apprentices.	Carriage and Waggon Examiners.	Watchmen.	Furnacemen.	Wire-worker.	Messenger and Office-cleaner.	Total,
£200 £165 £156 £150 £150 £140 £135 £135 £120 £94 £80 £65 £50 £6 per week £5 158 £5 108 £5 158 £4 168 £4 168 £4 168 £38 128. 8d 128. 8d 128. 2d 128. 8d 118. 8d 118. 8d 118. 8d 118. 8d 118. 8d 118. 8d 118. 8d 118. 8d 118. 8d 118. 8d																																					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Carried forward.																			•••						•••				[••• {	•••]	}	•••	

No. 58—continued.

LOCOMOTIVE DEPARTMENT—continued.

STATEMENT of the number and classification of persons employed in the Locomotive Branch, year 1883.

TRAFFIC BRANCH.

"	/	
Carried forward	#650 per anm 550 per anm	Rate.
N		Traffic Managers.
N		Wharfingers.
н.		Berthing Master.
ı		Goods Superintendent.
H		Coaching Superintendent.
н		Office Superintendent.
∞	-:::::::::::::::::::::::::::::::::::::	Traffic Inspectors.
н		Paymaster.
ω		Relieving Station-masters.
114		Station-masters.
1961		Clerks.
H		Cashier.
13	: H: N H: OH:	Foremen.
8		Telegraph Inspectors.
248	[1] [[[[[[[[[[[[[[[[[[Telegraph Operators.
14		Telegraph Probationers.
97	. ::::::::::::::::::::::::::::::::::::	Signalmen, Shunters, and Pointsmen.
229		Guards.
254	::::::::::::::::::::::::::::::::::::::	Gatekeepers.
ю		Printers.
252	704011011111111111111111111111111111111	Porters.
н		Tarpaulin Makers.
- 8		Messengers.
6		Ladies' Attendants.
0	#:::::':::::::::::::::::::::::::::::::	Watchmen.
1466	11100000121141161161161167781167811678116781167811	Total.

No. 58—continued.

	Total	3/6 "	5/- "	5/6 "	6/- "	6/6 "	7/- "	7/6 per day	Brought · forward	Rate.	
	N	T :	:	:	:	:	:`	:	N	Traffic Managers.	
	ю	:	:	:	:	:	_ <u>:</u>	:	ν,	Wharfingers.	
	H	:	:	:	:	:	:	:	H ,	Berthing Masters.	
	-		:	:	:	:		:	н	Goods Superintendent.	
	ł	<u> : </u>	<u>:</u>	:	:	:	<u>:</u>	:	н	Coaching Superintendent.	
	-	<u> </u>	:	:	:	:	_:_	:	H	Office Superintendent.	
		<u> : </u>	<u>:</u>	:	:	<u>:</u> _	<u>:</u>	:	∞	Traffic Inspectors.	
·	H	:	:	:	:	:	:	:	н	Paymaster.	ĺ
	<u> </u>	<u> : </u>	<u>:</u>	<u>:</u>	:_	<u>:</u>	<u>:</u>	<u>:</u>	ω	Relieving Station-masters.	
	114	:	:	:	:	÷	÷	:	114	Station-masters.	ے
	199	:	:	:	:	:,	ω	:	196	Clerks.	TRAFFIC BRANCH—continued.
		:	:	:	:	:	:	:		Cashier.	С В
	13	:	:	:	:	:	:	:	13	Foremen.	MANCE
	N	, :	:	:	:	i	:	:	10	Telegraph Inspector.	30
	250	: `	:	:	:	:	N	:	248	Telegraph Operator.	ntinu
	14	:	:	:	:	:	:	:	14	Telegraph Probationers.	ed.
	161	H	H	:	:	:	51	41	97	Signalmen, Shunters, and Pointsmen.	
	256	:	:	:	<u>:</u>	:	17	H	229	Guards.	
	282	:	:	:	4	ы	21	H	254	Gatekeepers.	
		:	:	:	:	:	:	:	N	Printers.	
	1135	:	N	+	4	н	750	125	252	Porters.	
	18	:	н	:	:	:	91	:	ы.	Tarpaulin Makers.	
	- 8	:	:	:	:	:	:	:	∞	Messengers.	
	6	:	:	: ,	:	:	:	:	6	Ladies' Attendants.	
	25	:	:	<u>:</u>	:	н	15	:	9	Watchmen.	
	2536	H	4	H	∞	4	875	177	1466	Total.	

STATEMENT of the Number and Classification of Persons employed in Tearric Branch, Tramways, for year ending 31st December, 1883. No. 58—continued.

1-																				
	0/0	212	1 7	7/6	∞ .	8/6	9/•	10/-	·/ı	12/• per diem	15/-	17/6	20/-	25/-	30/•	80/- per week	£50	£250	£500 \# annm.	
	=	ະ	¥		: :	æ	ä	ų	¥	er die	*	ä	ម	z	z	er we	ະ	z	us &	Rate.
	<u>:</u>	:	:	<u>:</u>		:	<u>:</u>	<u>:</u>	:	ğ	:	:	•	:	:	ek.	:	<u>:</u>	E	•
-	:	:	:	:		:	:	:	:	:	:	÷	:	:	:	፥	:	:	н	Superintendent.
∞	, :	н		. :		н	н	1	:	:	:	:	:	:	н	:	:	H	:	Clerks.
н]:	:	:	:		:	:	Ė	:	:	:	:	:	:	:	:	н	:	;	Housekeeper.
н	:	i	:	:		:	:	:	:	:	:	÷	:	:	:	н	:	:	:	Inspector.
4]:	:	-	:			:	:	:	:	i	:	н	Ŋ	:	:	:	:	:	Ticket Clerks.
1	<u> </u> :	:	_ <u>:</u>	:	:	:	:	:	´:	:	:	H	´ :	:	:	:	:	:	:	Messenger.
; H	:	:	• :	:	:		:	:	:	:		፥	:	:	:	:	:	:	:	Waiting room Attendant.
4	:	:	:	:	:		: .	:	N	N	:	:	:	:	:	:	:	:	:	Traffic Foremen.
H.	<u> </u>	÷	:	:	:		:	н	i	:	:	:	:	:	:	:	:	:	:	Timekeeper.
102	:	9	15	38	, ઇ	.	տ	:	:	:	:	:	:	:	:	:	:	:	:	Conductors.
ä	:	:	-	~) N	•	:	:	:	:	:	:	:	:	:	:	:	:	:	Staffmen.
18	:	ယ	10	ر.	i		:	:	:	:	:	:	:	:	:	:	:	:	:	Pointsmen.
4	<u> </u>	H	:	N	:		н	:	:	:	:	:	:	:	:	:	:	:	:	Shunters.
4	:	ю	H	: .	-		:	:	:	:	:	:	:	:	:	:	:	:	:	Point-cleaners.
61	:	19	:	' :	:		:	:	i	:	:	:	i	:	:	:	:	:	:	Flagmen.
18	-	16	:	:	1		:	:	:	:	:	:	:	:	:	:	:	:	:	Car-cleaners.
4	:	4.	:	:	:	:	}	:	:	:	:	:	:	:	:	:	:	:	:	Car-oilers.
ယ	:	з	:	:	:	:		:	:	:	:	·: (:	:	:	:	:	:	:	Lamp trimmers.
w	:	:	:	:	÷	:		ь	:	:	:	:	:	:	:	:	:	:	:	Detectives.
207	×	58	30	53	6	_	1 .	4	N		н	н	н		-	H.	H	м	ы	Total.

APPENDIX TO REPORT ON RAILWAYS-1883.

• • • • • • • • • • • • • • • • • • • •	No. 58—ca	entinued.		
STATEMENT of the Number and Classification	of Persons employed in the	LOCOMOTIVE BRANCH of the	he Government Tramways	in the year 1883.

	Rates.		Superin- tendent.	General Foreman.	Clerks.	Timekeepers.	Foremen.	Engine-drivers. (Loco.)	Engine drivers (Stationary.)	Firemen.	Cleaners.	Fuelmen.	Fluctural Engine.	Fitters—Car.	Blacksmiths	Strikers.	Turners.	Machinists.	Pattern- maker.	Boiler- makers.	Plumbers.	Tinsmiths.	Brass- finishers.	Brass- moulders.	Car-builders	Carpenters.	Car-examine Car-lifters.	Painters.,	Watchmen.	Labourers.	Lads.	Improvers.	Apprentices.	Messengers.	Office- cleaners.	Ganger.	Pumpers.	Draftsmen.	Total.
£500 ne	er ภากบ	m	1	أ]]	['				· }	.						. .							1
£364	,,			1] ,					•••		•••			· · · · ·		• • •	.			:						•••	• • • •		•••	1
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£150	,,				1			l . l	l											•••			· · · ·		•••	.				2	i				•••			•••	1
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No. 58-continued.

STATEMENT of the Number and Classification of persons employed in the Permanent Way Branch of the Tramway Department, at 31st December, 1883.

	Inspectors.	Sub-Inspectors	Time-keepers.	Clerks.	Gangers.	Labourers.	Gangers— Flying Gangs	Labourers— Flying Gangs.	Carters.	Blacksmiths.	Boys.	Total.
per week	1 1	2 1 1 	1 	1 	1 16 	 37	 1 1		 14 	 	 2 1	1 1 1 1 2 15 3 1 17 140 2 - 1 1 187
)) ·····				`	1 2	1 2 17	1 2 17 37	1 2 17 37 2	1 2 17 37 2 103	1 2 17 37 2 103 14	1 2 17 37 2 103 14 1	1 2 17 37 2 103 14 1 4

			SU	MMA	RY.					
Head Office									No.	No.
TIEAU OHICE	•		***	•••	•••	•••	•••	•••	•••	231
Engineer-in-Chie	f's Br	anch								
Office Staff		•••	•••	•••			• • •	•••	76	
Field Staff	• -	• • •	•••	•••	•••			•••	360	
· • · · · · · · · · · · · · · · · · · ·										436
Engineer for Exi	sting	Line	s Branc	h						
Office Staff		• • •		•••	•••				23	
Permanent-w	7ay			•••	•••			• • • •	2,764	
						•				2,787
Locomotive Engin	ueer's	Bra	nch—				•			
Office Staff						•••		·	23	
Locomotive 8	Staff	• • •	•••	• • •	·			••`	.2,032	
1										2,055
Traffic Branch									•••	2,536
				•••	•••	•••	• • • • • • • • • • • • • • • • • • • •	• • • •	•••	-,500
Tramway Branch										
Rolling Stock			•••	•••	•••				541	
Permanent-w	ray St	aff	•••	•••	•••			•••	187	
Traffic Staff	-		•••	•••	•••	•••			207	
										935
										8,980
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No. 59.

RETURN of the Total Amount paid for Wages on the different Branches of the Railway and Tramway, 1882-83.

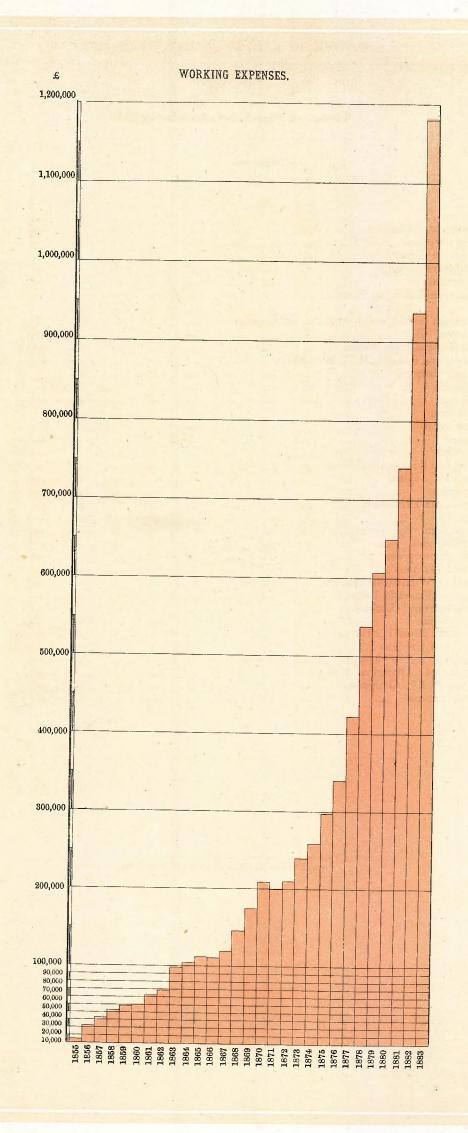
Branch.	South and West.	North.	Total.
Locomotive— 1882 1883.	£ s. d. 193,848 7 11 235,913 10 3	£ 8. d. 48,339 5 0 57,035 14 4	£ s. d. 242,187 12 11 292,949 4 7
Permanent Way— 1882	299,808 6 4 / 336,279 12 2	45,386 0 11 64,550 14 6	345,194 7 3 400,830 6 8
Traffic—	154,113 14 1 198,734 1 10	47,377 14 4 60,348 0 5	201,491 8 5 259,082 2 3
Total all Branches—		141,103 0 3 181,934 9 3	788,873 8 7 952,861 13 6
Tramway— 1882 1883	91,792 8 4 139,540 4 4		91,792 8 4 139,540 4 4

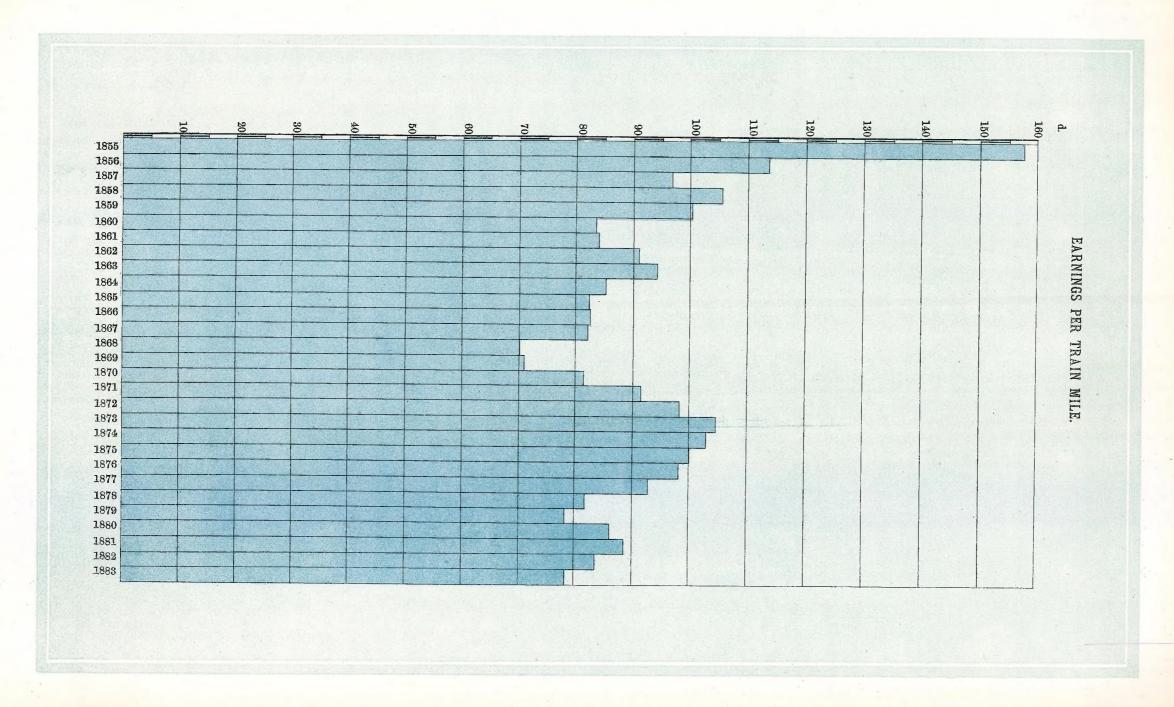
No. 60.

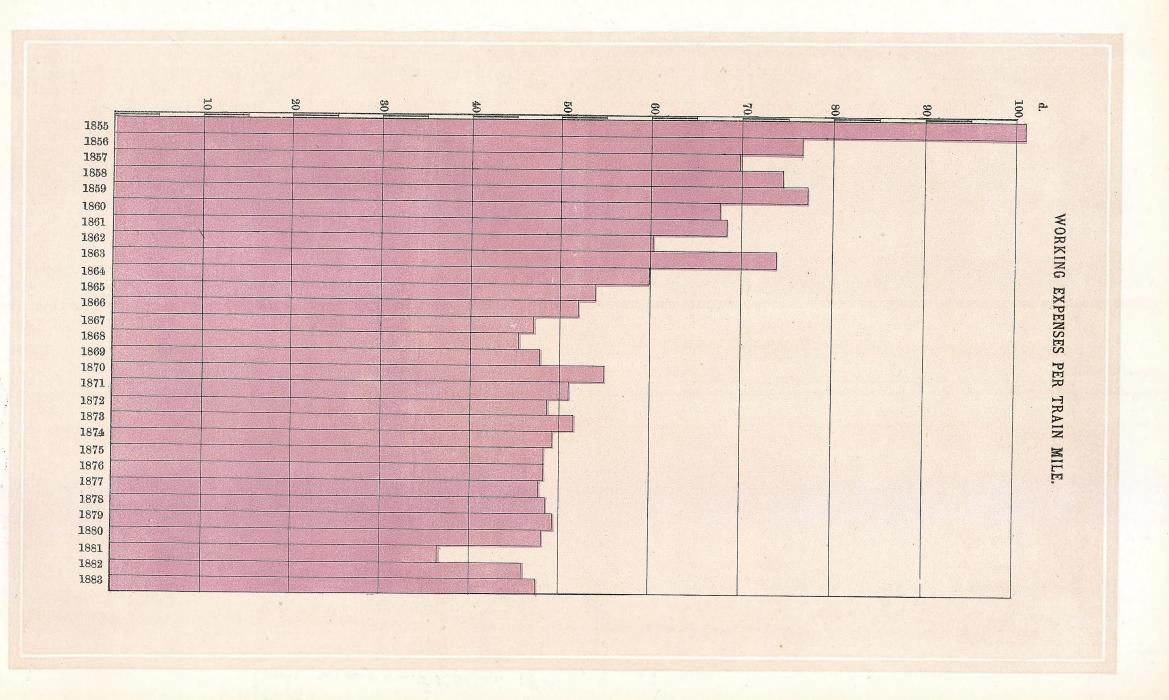
Return of Free Passes issued during 1883.

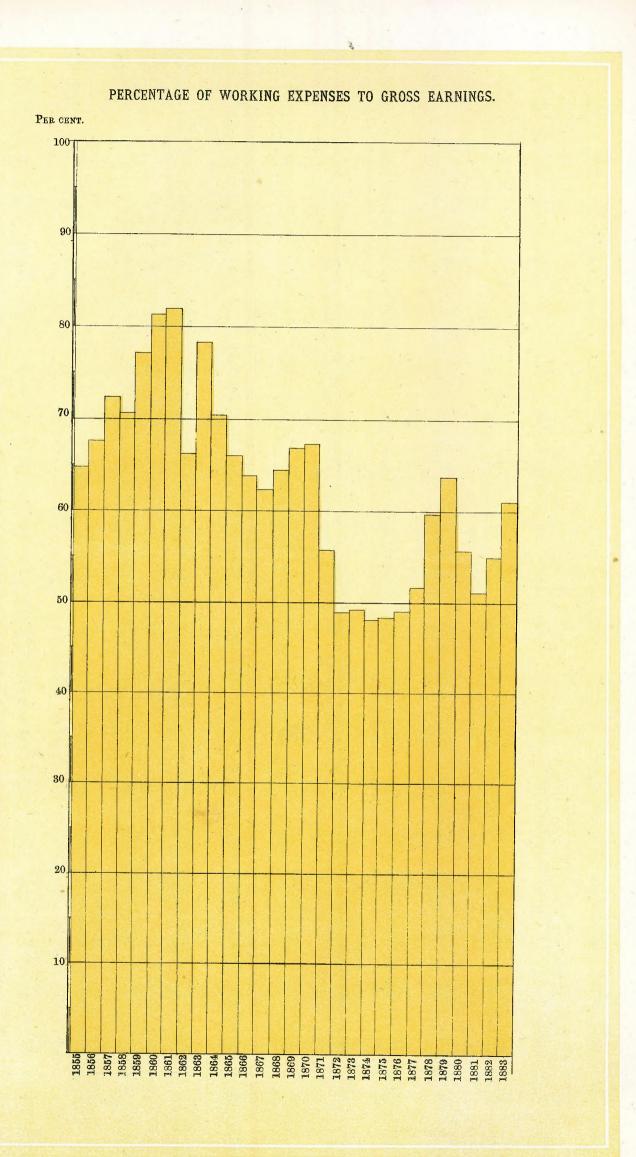
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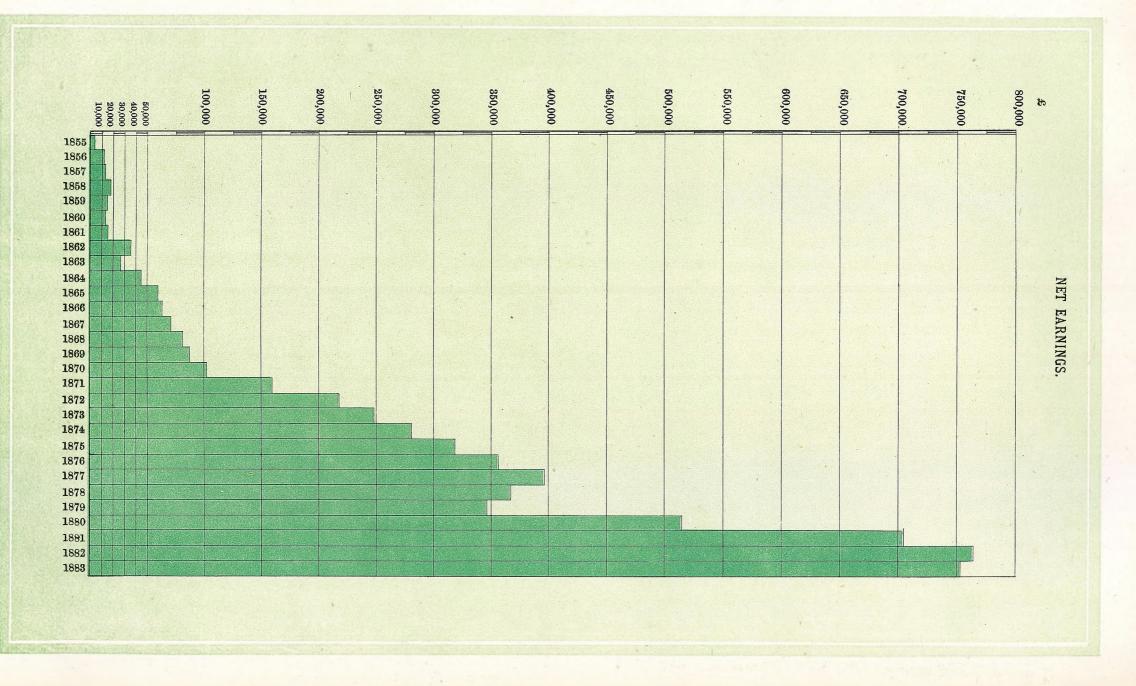
Sydney: Thomas Richards, Government Printer.—1884

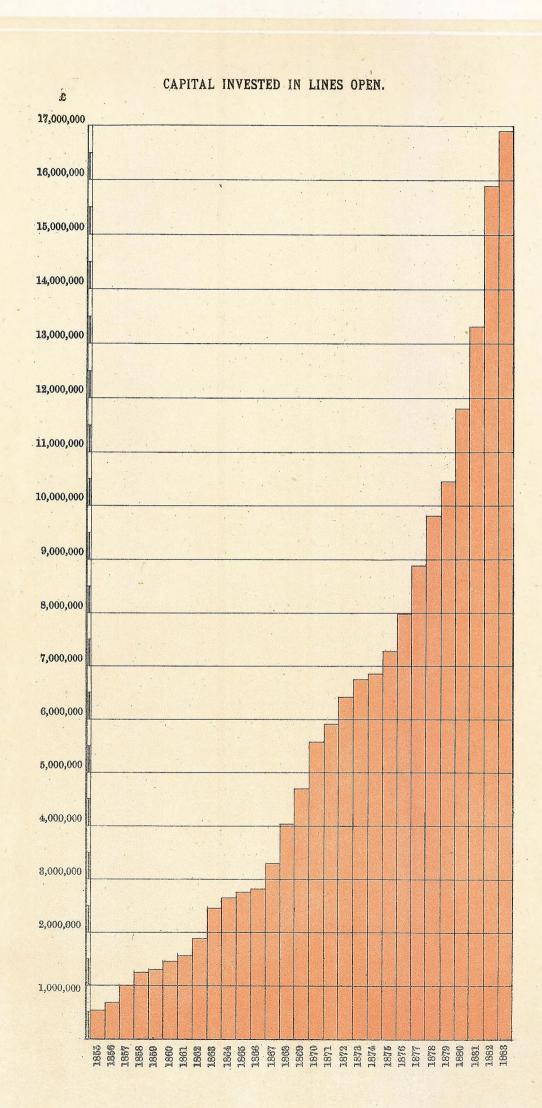


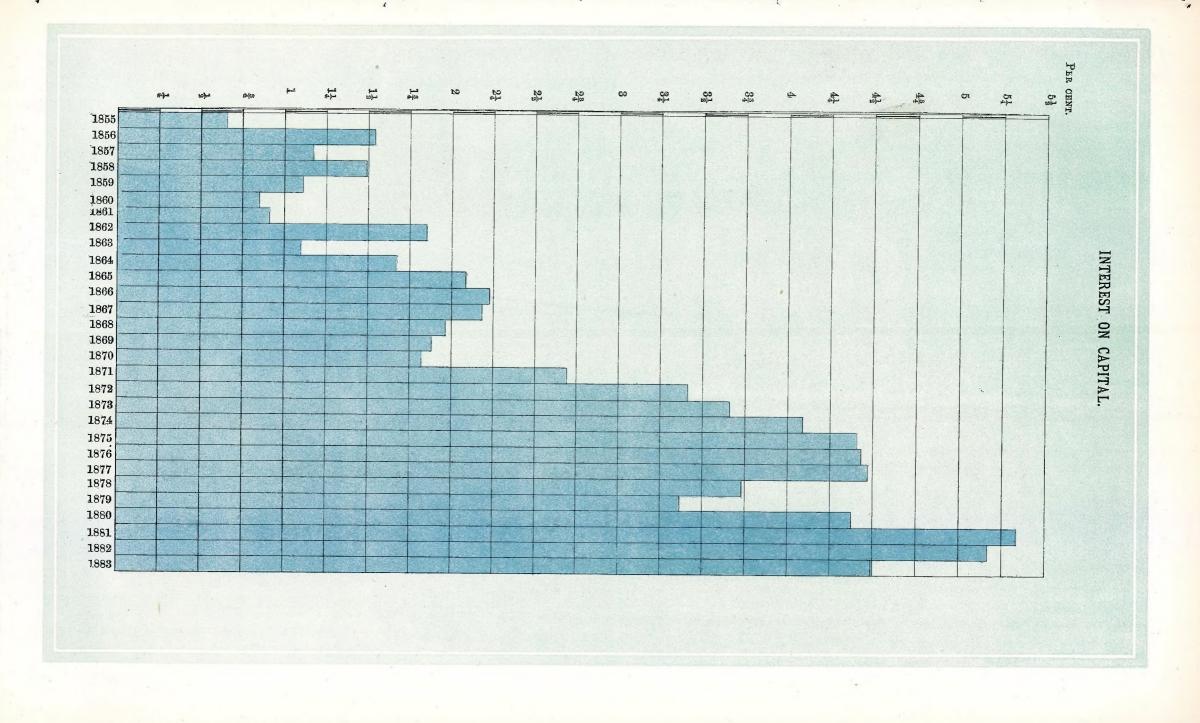


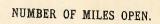


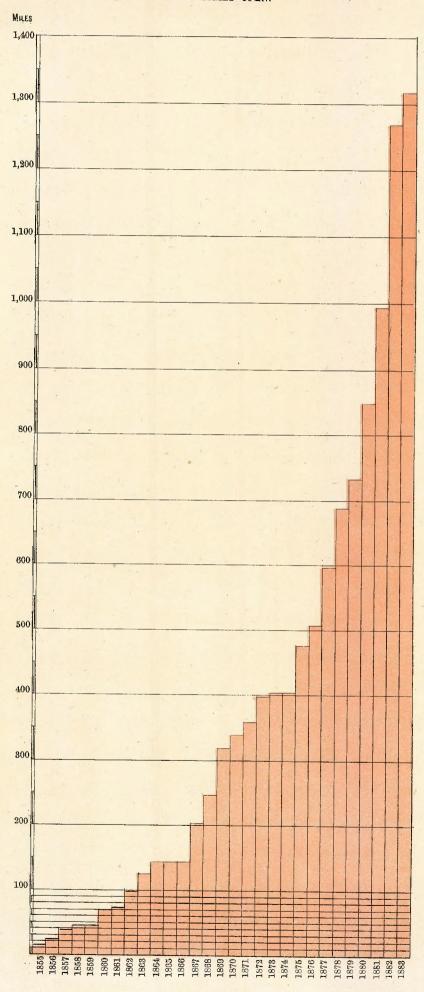


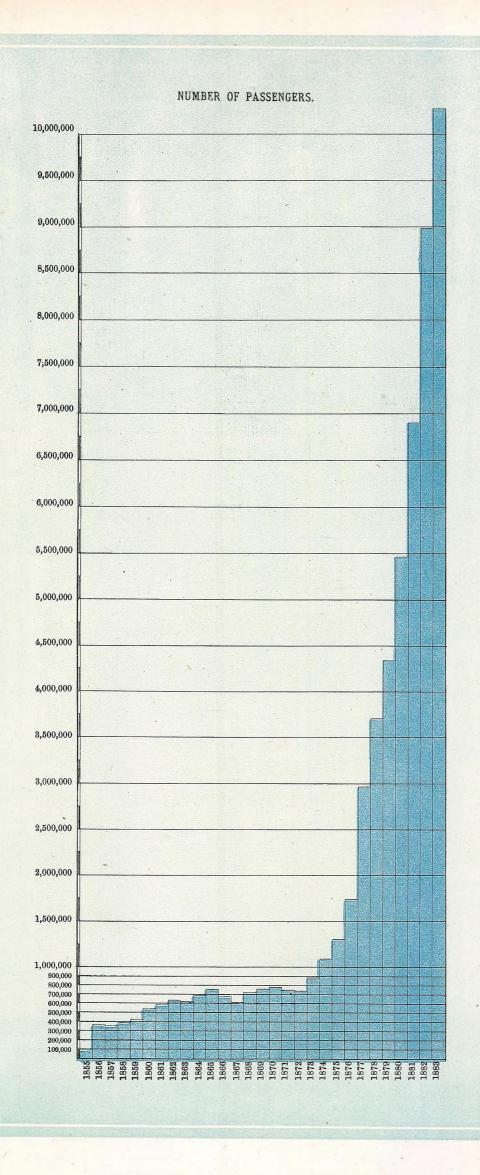


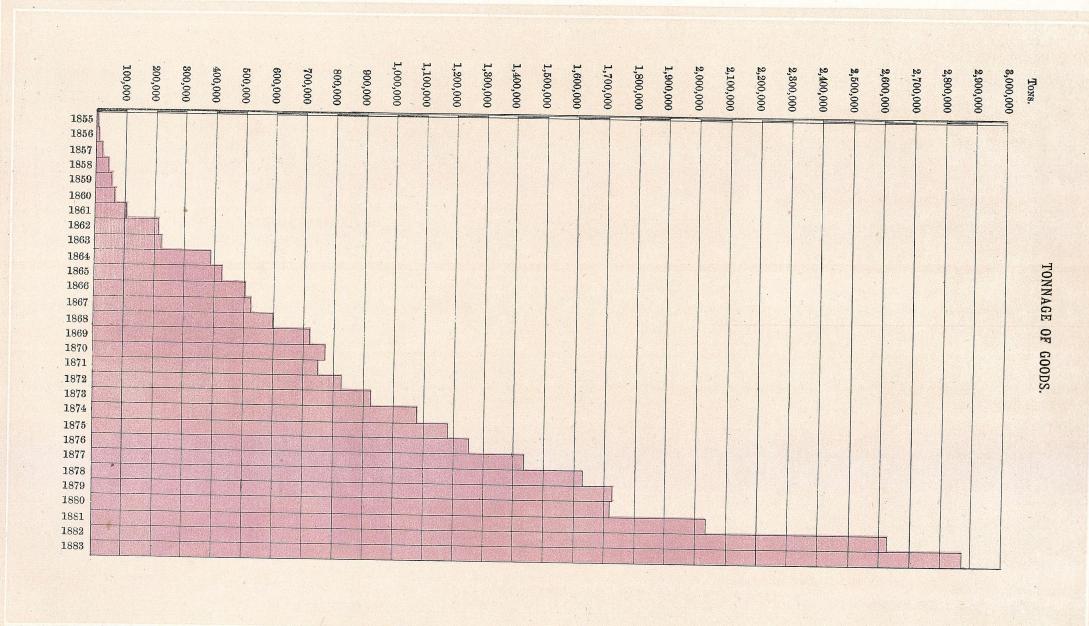




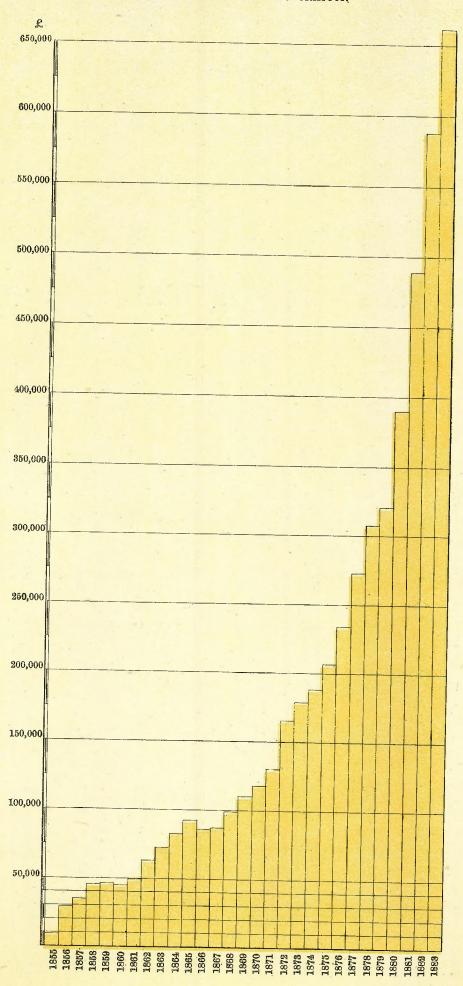


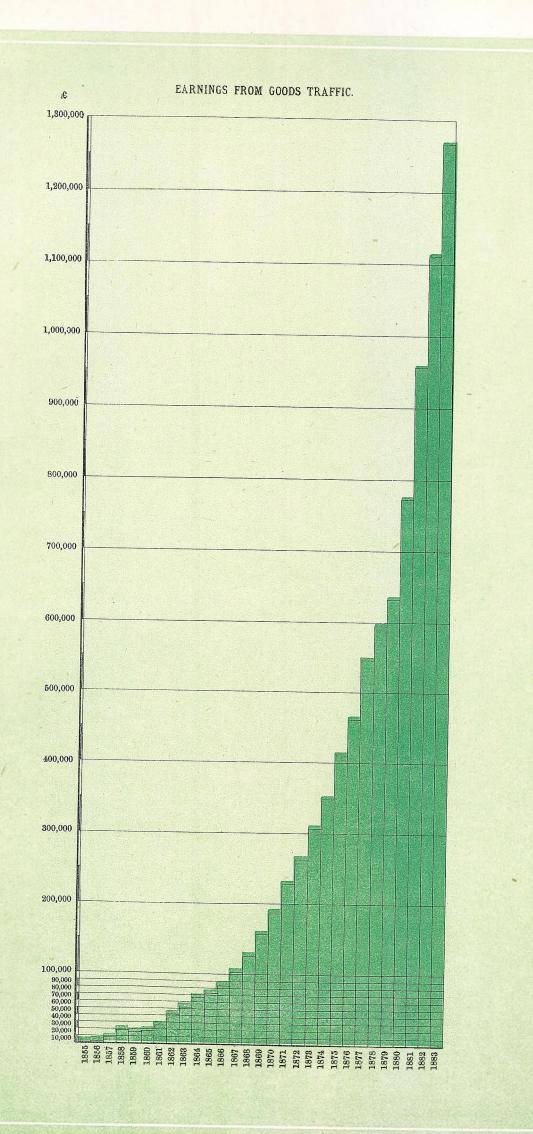


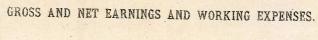


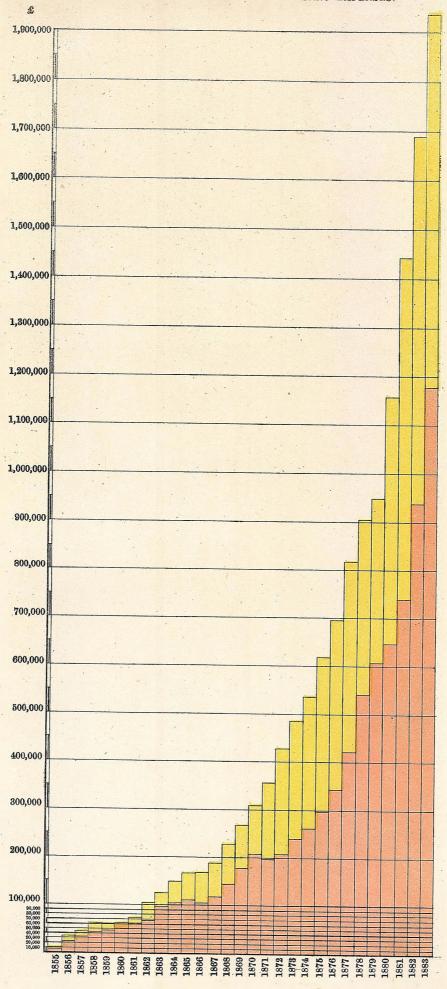


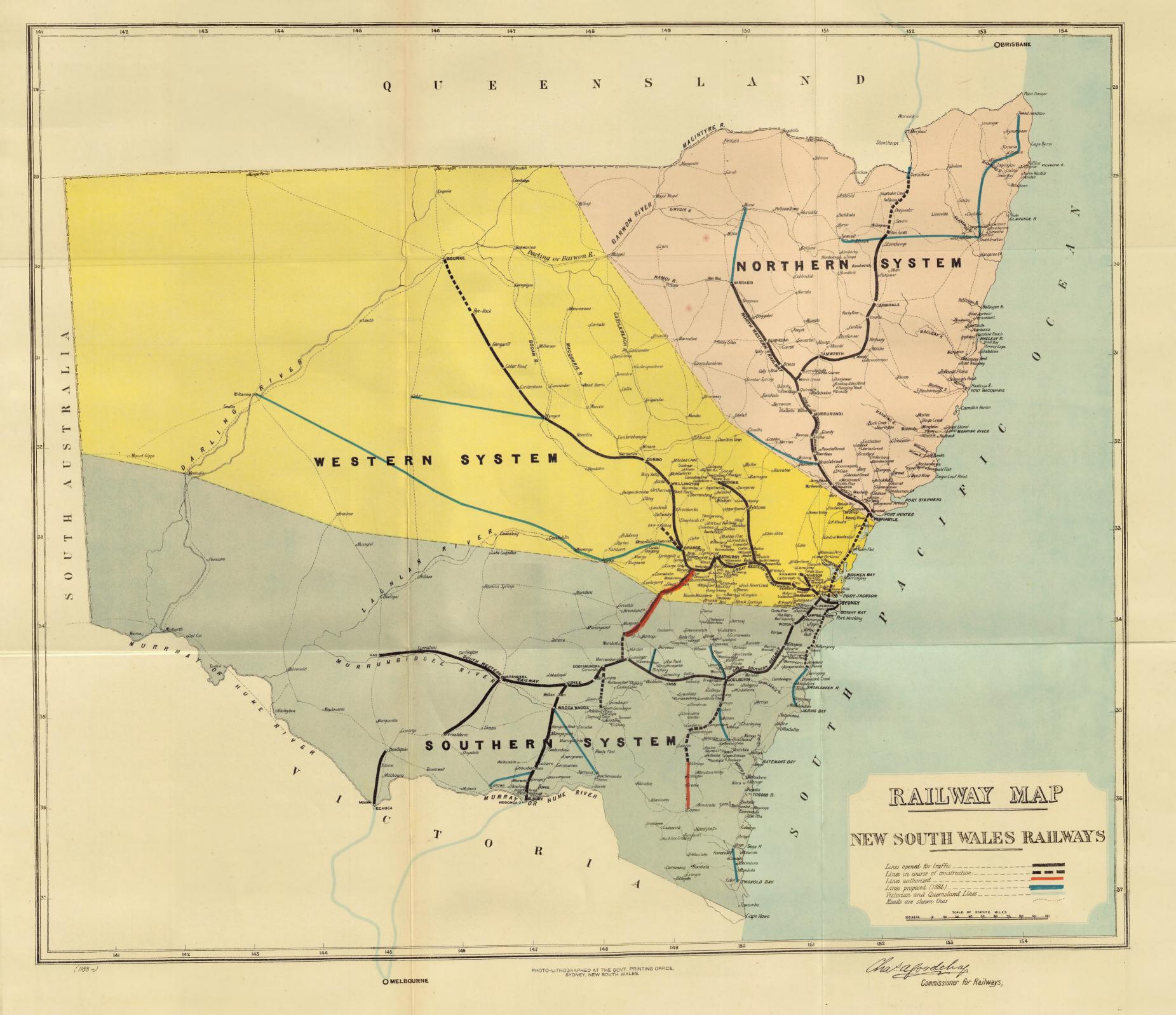
EARNINGS FROM COACHING TRAFFIC,











LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

DUMP CARS.

(ORDERED FROM CARSON WOODS & CO.)

Ordered by the Legislative Assembly to be printed, 21 May, 1884.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 25th March, 1884, That there be laid upon the Table of this House,—

"Copies of all minutes, letters, reports, and other documents having reference "to the ordering of a number of Dump cars from Carson Woods & Co."

(Mr. Sydney Smith.)

'NO	SCHEDULE.	
11 22 33 44 55 66 77 89 10 11 11 12 13 14 15 16 17 18 19 20 21 22 22 23 24 25 26 27 28 29 30 31 31 31 31 31 31 31 31 31 31 31 31 31	Minute for Commissioner for Railways, that he had obtained information re dump cars. 2 April, 1883 J. C. Dibbs to Commissioner for Railways, submitting particulars of dump car. 22 May, 1883 Commissioner for Railways to Mr. J. C. Dibbs, that Department would test car. 22 May, 1883 Mr. J. C. Dibbs to Commissioner for Railways, forwarding plans of dump car. 11 May, 1883 Mr. J. C. Dibbs to Commissioner for Railways, forwarding plans of dump car. 11 May, 1883 Mr. J. C. Dibbs to Commissioner for Railways, forwarding account for dump car. 4 June, 1883 Mr. Woods to Secretary for Works, asking interview. 19 June, 1883 Mr. Woods to Traffic Manager, asking for trial of dump car. 19 June, 1883 Mr. Woods to Commissioner for Railways, asking for trial of dump car. 21 June, 1883 Mr. Woods to Commissioner for Railways, asking interview. 19 July, 1883 Mr. Woods to Secretary for Works, asking interview. 19 July, 1883 Mr. Woods to Secretary for Works, asking interview. 21 July, 1883 Under Secretary to Mr. Woods re interview. 21 July, 1883 Mr. Woods to Commissioner for Railways, asking for order for dump cars. 6 August, 1883 Mr. Hudson (Hudson Bros.) to Mr. Midelton, price for which they would build dump cars. 7 August, 1883. Mr. Hudson (Hudson Bros.) to Mr. Midelton, price for which they would build dump cars. 7 August, 1883. Mr. Woods to Commissioner for Railways, re terms for disposing of patent for dump cars. 12 August, 1883 Mr. Woods to Commissioner for Railways, re terms for disposing of patent for dump cars. 24 August, 1883. Mr. Woods to Commissioner for Railways to Mr. Woods, further re purchase of patent for dump cars. 24 August, 1883. Mr. Woods, Rich, & Co. to Secretary for Works, asking decision re dump cars. 24 August, 1883. Messrs. Woods, Rich, & Co. to Secretary for Works, asking decision re dump cars. 24 August, 1883. Mr. Woods to Commissioner for Railways, terms upon which dump cars would be supplied. 27 August, 1883. Mr. Woods to Commissioner for Railways, repressioner for Woods accepting offer. 28 August, 1883. M	233334445566666777777888888999910010
	Specification for dump car and letters of Registration	12

DUMP CARS.

No. 1.

Minute of Commissioner for Railways.

I have received from America some papers on the newly patented dump cars in use there, and which seem to be a great improvement in regard to the unloading of certain descriptions of goods. I shall be glad if the Traffic Manager will peruse these papers and furnish me with a report. It seems that the patented arrangement for "dumping" the cars can be attached to trucks in use at a cost of about £6 per truck.

Minutes.

By Traffic Manager:-The principal traffic for which the kind of trucks would be available is coal, but at present we have neither platforms nor staiths on to which to shoot the coal; now it is carted direct from the trucks. Should it be approved to build staiths at stations as is done in England (and I would strongly recommend it), then the adoption of the principle would be of great service in the saving of time and labour, and in enabling of greater mileage being run by waggons. There are other smaller kinds of traffic for which the principle could be made use of if there were places on to which to "shoot" it. The principle would appear to be well adapted for ballast waggons, and also for "loco." coal trucks; but of these the Engineer for Existing Lines and Loco. Engineer would be able to give an opinion.—W.V.R., 5/4/83. Commissioner.

Mr. Midelton, for early report.—G.B., B.C., 6/4/83.

THEORETICALLY this dump car looks very satisfactory and promises well, but when I fully consider the matter in its various manners of application I really cannot see much in it to recommend. It is like many other things not complete without some other appliance. I really cannot agree with Mr. Read that it is available for loco. coal traffic, for, as he says, it necessitates the erection of platforms, staiths, &c. If coal could be dumped direct in carts so that it could be hauled away to the coal yards and then dumped again, that would be an advantage, but this could not be done without either raising the dumping waggon or lowering the coal cart. A good deep bottom coal waggon, such as used by the Midland and Great Northern Railway Companies at home, cannot well be beaten for coal traffic, for domestic and manufactory purposes. I think the coal appliances at the various London depôts of the Midland Company the best I know of. If we could dump kerosene shale from these waggons direct into a ship's hold at Darling Harbour there would be an advantage, but at present this could be better done with stopper waggons as practised at Newcastle.

I could not recommend its adoption for ballasting purposes, and if I were a contractor I should prefer using drop-bottom waggons, as with them the ballast is deposited where required, but with the dump car it would be deposited in the side of the road, and unless there was plenty of room a great quantity would be deposited off the road entirely.

As for coaling engines, with the dump car I could not possibly agree to that, as I think it very little, if any, better than our present system with the D waggons. Should it be decided to order any of these cars I beg to suggest that dimensions of axles, buffers, &c., be sent by us to save alterations when they arrive in Sydney.

Commissioner.

THOS. MIDELTON.

No. 2.

Mr. J. C. Dibbs to The Commissioner for Railways.

George-street, opposite Bridge-street, Sydney, 2 April, 1883. Sir, As agent for the patentees I venture to submit for your information, plans, photographs, and particulars of the latest improvement in America for the economical working of railways in the "United States Car Company's Screw Lever Dump and Coal Car."

Car Company's Screw Lever Dump and Coal Car Enclosed herewith I beg to hand you,—

1. Printed description and circulars,
2. Letter dated Columbus, Ohio, 17/3/82,
3. do Allston, 6/4/82,
4. do Joliett, 8/7/82,
5. do Rock Island, 19/7/82,
6. do do 21/7/82,
7. do Nelsonville, Ohio, 4/8/82,
9 do New York, 4/8/82.

do New York, 4/8/82,

Nelsonville, Ohio, 24/8/82, do

Melrose, Mass., 21/10/82, do-

for your perusal, and to be returned after you have finished with them.

I am prepared to deal with you for the patent for this Colony.

A dump car is now on its way from Boston, which I shall be prepared to place under offer to you, practical proof being of greater service in the advantages of the system than any amount of photographs and plans.

I may state that these cars are in large use on the leading lines of America.

I am, &c.,
JOHN C. DIBBS,

Agent of patentee. Minutes.

Minutes.

The Traffic Manager for report.—D.V., 8/4/83.

I have already reported on these cars. Please see my minute on Commissioner's minute paper, 83-6,244. I could use a few of this style of car at once for traffic purposes, and would like to be supplied.—W.V.R., 23/4/83. Commissioner.

By acting Secretary for Public Works:—This car to be tried and taken if found suitable as an experiment.—A.S., 18/5/83. Inform. Mr. J. C. Dibbs informed, 22/6/84. Traffic Manager, B.C., 23/5/83.—G.B. Seen.—W.V.R., 29/5/83. Locomotive Engineer, B.C., 30/5/83.—G.B.

No. 3.

The Commissioner for Railways to Mr. J. C. Dibbs.

Sir, Department of Public Works, Railway Branch, Sydney, 22 May, 1883.

Referring to your letter of the 2nd ultimo, bringing under attention the United States Car Company's screw lever dump and coal car, I have the honor to inform you that the Department will be glad to test the car upon its receipt in the Colony, and if found suitable it will be purchased. I return description and circular as requested.

I have, &c.,

CH. A. GOODCHAP, Commissioner for Railways.

No. 4.

The Commissioner for Railways to Mr. J. C. Dibbs.

Sir,

George-street, opposite Bridge-street, Sydney, 8 May, 1883.

Referring to my letter dated 2nd April last, I have now to inform you that the dump car mentioned therein has arrived, per "Julia," from Boston, and will be landed in the course of a few days. Will you please give me instructions where you wish me to deliver it.

I have, &c., JOHN C. DIBBS, as Agent.

Minute.

By Commissioner:—As Mr. Read is desirous of having one of these cars at work it may be accepted on trial.—Ch.A.G.

No. 5.

Mr. J. C. Dibbs to The Commissioner for Railways.

Sir,

George-street, opposite Bridge-street, Sydney, 11 May, 1883.

Referring to my letters to you, dated 2nd April and 8th May, I have now to forward you the working plans of the dumping car which has been patented for this Colony.

I have, &c., JOHN C. DIBBS, as Agent.

Minutes.

By Commissioner:—On other papers I have requested that this car may be received. It will be delivered at Darling Harbour; please have it put together and let me know when it is ready to be used.—Chas. A.G., 11/5/83. Loco. Engineer, Traffic Manager, Storekeeper.

Seen. Traffic Manager to see and please send on at once to Locomotive Engineer with plans or drawings.—A.R., 14/5/83. Traffic Manager. Seen.—W. V. Read, 16/5/83. Acting Locomotive Engineer. Seen.—J.M., 17/5/83.

No. 6.

Mr. J. C. Dibbs to The Commissioner for Railways.

Sir,

I have the honor to enclose herewith memo. of my account for dump car which has been delivered to your Department, and I trust that it will be found so serviceable and effect so great a saving, both in cost and economical working, as compared with the trucks now in use on your lines, that you will be induced to purchase the patentees' rights for New South Wales.

I have, &c., JOHN C. DIBBS.

[Enclosure.]

The Commissioner for Railways of New South Wales Dr. to John C. Dibbs,-

To 1 dump car

The following extras—viz.: 1 cast-iron worm wheel; 1 cast-iron double cog; 1 cast-iron single cog; 1 cast-iron chain; 1 cast-iron top rocke plate; 1 cast-iron bottom rocke plate; 1 cast-iron work gear frame

Weighing 452lbs.

25. 0 0

£225 0 0

200

Minute

Minutes.

By Commissioner: Write separate memo to the Traffic Manager and Locomotive Engineer, stating that I wish an early trial to be made of this car. Ask Mr. Scott to say what progress has been made in the work of putting it together.—Ch.A.G., 6/6/83.

Memo.—Referring to the dump car (in pieces), supplied by Mr. J. C. Dibbs, I shall be glad if you will be good enough to report what progress has been made in the work of putting it together, as the Commissioner wishes an early trial of the car.—G.B., B.C., 8/6/83. Locomotive Engineer.

Mr. Midelton, for report.—R.J.S., 11/6/83. Report on separate paper sent to me by Traffic Manager: This car will be ready to-morrow (Tuesday), at 2 p.m.—J.M., 11/6/83. The Commissioner.— R.J.S., 11/6/83.

Memo.—Please note that a dump car (in pieces) was supplied to the Department by Mr. Dibbs in May, and the Locomotive Engineer has this day been asked to expedite the putting of it together in order that an early trial of the car may be made.—G.B., B.C., 8/6/83. Traffic Manager.

The car is now ready for inspection.—W. V. Read, 13/6/83. Commissioner.

By Commissioner: .- Mr. Midelton says that the cost is reasonable. I recommend the car be taken. Сн. А. G., 2/7/83.

By Secretary for Public Works:—Approved.—F.A.W., 5/7/83.

Locomotive Engineer. Make out voucher at once, please.—G.B. Mr. Midelton to note and forward certificate.—R.J.S., 7/7/83. Certificate herewith.—J.M., 9/7/83. Locomotive Engineer. The Examiner.—R.J.S., 11/7/83. Voucher for £225 has been forwarded for payment.—J.P.F., 31/7/83. Secretary.

No. 7.

Mr. C. Woods to The Secretary for Public Works.

253, George-street, Sydney, 19 June, 1883. With reference to the trial of the dump car imported by me from the United States, which was officially tested upon Saturday last, I am now desirous to submit to you important drawings and printed descriptions relative thereto, and for this purpose desire a personal interview with yourself at such time as will quite suit your convenience, and which I beg you will appoint.

Soliciting the favour of an early reply to this letter,

Believe me, &c. CARSON WOODS.

Minutes.

By Commissioner: -Will the Minister name a day for seeing Mr. Carson Woods. -CH.A.G.,

By Secretary for Public Works: -- Any day will suit me, but it had better be in the afternoon. 25/6/83.

No. 8.

Mr. C. Woods to The Traffic Manager.

253, George-street, Sydney, 19 June, 1883. Sir, The impromptu trial we had on Saturday last gave me no time to advise the Press of this City. Could I ask the favor of another show of this "dump car," in this instance to be filled with stones or gravel, giving me a day or two's notice, so that I could arrange with the reporters to be present.

You will, I need not say, oblige me very much if this can be arranged.

I have, &c., CARSON WOODS.

I think Mr. Woods should have an opportunity of fully testing the car; would Commissioner please approve of Mr. Woods' application.—W. V.R., 26/6/83. Commissioner. Approved.—Ch.A.G., 26/6/83.

No. 9.

Mr. C. Woods to The Commissioner for Railways.

Sir. 253, George-street, Sydney, 21 June, 1883. In deference to the wishes of a number of gentlemen in the City and representatives of the Press who are desirous to see the working capabilities of the "dump car," recently imported from America by me for the Government, will you do me the favor to order another trial to be publicly made of it, in this

instance directing the car to be loaded with stones or gravel.

If you will kindly do this and give me a few days' notice before the trial takes place, so that I may notify these gentlemen to attend it, you will confer a great favor upon all concerned.

I have, &c.,

ĆARŚON WOODS.

By Commissioner: —I have authorized this on Mr. Woods' application, made to Mr. Read.—CH.A.G., 26/6/83.

No. 10.

Messrs. Woods, Rich, & Co. to The Secretary for Public Works.

253, George-street, Sydney, 2 July, 1883. Sir. Our Mr. Carson Woods will do himself the honor of laying before you this afternoon the annexed list of papers relating to the American lever dump car.

Mr. Muir, of the works of the Ontario Car Company of London, Ontario, in a letter addressed to us

explains fully the value of this invention and we can add nothing to his letter.

Mr. Muir's name and the high standing he holds as a railway expert, being chief of the largest carbuilding establishment in Ontario, are safe guarantees for all the statements he makes.

The Gilbert Car Company of Troy, in the State of New York, endorse every word of Mr. Muir's

letter.

We would respectfully call your attention to the fact that these Companies are not interested parties, are car-builders only and have no control of any patent. As Mr. Gilbert, junior, said to our Mr. as they are car-builders only and have no control of any patent. Woods last January: "It does not matter to us what cars we build, but of course we are quick to appreciate a good thing." He referred, in saying so, to the American lever dump car.

We have, &c.

-CARSON WOODS, RICH, & CO.

Contents.

1. Letter-Thomas Muir to Carson Woods, 31st January, 1883.

2. Letter—F. Brownell to Carson Woods, 13th February, 1883.

[Enclosures.]

Mr. T. Muir to Mr. H. G. C. Woods.

Mr. T. Muir to Mr. H. G. C. Woods.

Dear Sir,

London, Ontario, 31 January, 1883.

I presume by this time you have got far beyond New York, or London, England, and I conclude it is best to address you "at home." We are really not prepared to undertake passenger car work for foreign shipment, but would like to call your attention specially to the "dump car" which we build. It is attracting very great attention from railway companies both here and in the States, and quickly superseding all other kinds of gandola and dump cars. It is quickly discharged, not easily put out of order, very strong, serviceable for general traffic and construction purposes, and so saves a great deal of empty mileage. The railway companies here have adopted it for the iron ore business, which has developed to such vast proportions within the last year. At Kingston and Trenton they are erecting elevated roadways with pockets at each side, overhanging the wharves, so that these cars can be run up and dumped on either side into the pockets, and from the pockets into vessels. You will readily notice, however, that the system for dumping cars can be applied to all descriptions of car-bodies, either the ordinary platform without sides, for carrying poles, ties, cordwood, stone, timber, pig iron, &c., or with box sides for coal, sand, ore, &c., and also with high slotted sides for coke, corn-cobs, and such-like freight. From one of our cars, exhibited at Kingston, a labourer from the wharf discharged over 21 tons ore in a few seconds. The cars do not require to be uncoupled, a whole train could be discharged at one time by so many men (one upon each car), but two or three men could dump fifteen or twenty cars within 30 minutes and have train ready to take away.

Our price to-day for 20-ton cars without sides, delivered on track at London, is \$600; same car with sides, \$615.

Car and Engine Wheels.

We are now prepared to supply the steel-tyfed wheels, cast steel tyres fused on double plate, cast iron centres. This wheel here will cost, for 33-inch size, \$20, as against \$35 which we have now to pay for English or German "Bessemer" steel tyred wheels with wrought iron spokes, and we can guarantee them to give better mileage. Our ordinary chilled cast iron wheels, 33 inch diameter, cost \$11 just now, but we are making a heavy "special passenger car wheel," with a thicker tyre and of extra quality charcoal irons (weighing 570 lbs. against 520 ordinary wheel) for \$12.75, which are really A1. The "Intercolonial" have taken them from us for their passenger cars.

I shall be glad to hear from you upon these matters. Any further particulars or other information desired I shall be happy to supply. A new sleeping car has been patented by a Halifax company, superior to "Pullman's" and very, very much better than another I know of. I have some idea of taking hold of it as a speciality. It is now before me upon favourable terms.

Yours, &c., THOS. MUIR.

Mr. F. Brownell to Messrs. Carson Woods, Rich, & Co.

Mr. F. Brownell to Messrs. Carson Woods, Rich, & Co.

Gentlemen,

The United States Car Co., 48, Congress-street, Boston, Mass., 13 February, 1883.

We shipped the screw lever dump and coal car to you early in January, via barque "Julia," L. Jordan, master; we also sent several pieces castings, without charge, which were duplicates of what were with car, to replace any that may get broken in transit via vessel; we sent bill to Messrs. Richard Irwin and Co., New York City, as requested by you, and received a prompt remittance for balance due for car. We are meeting with grand success here with our car; the one we shipped to you was loaded and dumped and found to work perfectly; we trust you will see personally to it that the car is put together in a good workmanlike manner; then satisfactory results will follow, and one man be able to dump car, loaded with 20 tons, in 30 seconds with ease. The past week a Pennsylvania coal road placed an order with a reliable car-builder for 80 one patent screw lever cars. Since your Mr. Woods left here we have sold one patent, covering the entire Dominion of Canada, to some Montreal men, and they are forming a rolling stock company with \$650,000 capital, to build our style dump cars and lease them to Canada railroad companies. Let us hear from you and of your success with the car after its arrival.

Yours, &c.,

FRANK BROWNELL,

Treasurer.

Treasurer.

No. 11.

Mr. C. Woods to The Secretary for Public Works.

253, George-street, Sydney, 19 July, 1883. Sir Not wishing to call upon you without your appointment, I should esteem it a great favour if you would name a day on which I could have the honor of an interview with you, concerning the new I have, &c., CARSON WOODS. American lever dump car.

Minutes

By Secretary- for Public Works:—Inform Mr. Wood that owing to illness of Commissioner for Railways I have not been able to go into his matter about the dump car, but that if he will call, say on Monday week, I will be prepared.—F.A.W., 20/7/83. Railways, B.C., 21/7/83.—W.F.

No. 12.

The Under Secretary for Public Works to Mr. C. Woods.

Department of Public Works, Sydney, 21 July, 1883. Sir. Referring to your letter of the 19th instant, I am directed to inform you that the Secretary for Public Works will receive you on Monday week, the 31st instant, on the subject of the new American lever dump car. I have, &c.

W. FORDE,

pro Under Secretary.

No. 13.

Mr. C. Woods to The Under Secretary for Public Works.

Sir, 35, North Pitt-street, Sydney, 24 July, 1883. I am in receipt of your letter of the 21st instant, informing me that the Secretary for Public Works will receive me on Monday week, the 30th instant, on the subject of the new American lever dump

I will be glad if you will inform the Secretary that I will do myself the honor to call upon him at 11o'clock on that day. I have, &c.,

CARSON WOODS.

Minutes.

Railways, B.C., 27/7/83.—W.F., pro Under Secretary.
By Secretary for Public Works:—I have arranged to send Mr. Wood a note naming a time when I can see him, after I have talked his affair over with the Commissioner for Railways.—F.A.W., 30/7/83. Mr. Goodchap, B.C., 2/8/83.—J.R.

By Commissioner:—I am of opinion that the principle of the dump car can be made, with great advantage, to apply to the traffic of our lines, and if the right to use the patent in our shops can be acquired on reasonable terms I would advocate the purchase.—Ch. A.G., 6/8/83.

No. 14.

Mr. C. Woods to The Commissioner for Railways.

Sir, 35, North Pitt-street, Sydney, 6 August, 1883. I had the honor of an interview with the Honorable the Minister for Public Works a week ago concerning the United States screw-lever dump car.

The honorable Mr. Wright said that no final answer could be given to me until he had discussed the

matter with you.

I have letters from the Victorian and Queensland Railway Departments, and am in correspondence with the New Zealand people concerning this car. These Departments are most anxious that I should go over there and submit to them proposals for the purchase of my dump car, saying that if they will not purchase the patent I am certain of very heavy orders for it, from the reports which have come from America in its favour.

Their letters have given me a new idea.

Up till now I have been asking the Minister of Works to purchase the patent, but if the Department thinks it would suit them better to give an order for two hundred cars to be delivered in 9, 12, and 18 months, I will, on completion of that order, transfer the patent to the Railway Department, or, if preferable, as I first said, I will take a lump sum for the patent.

The Department, I understand, wants rolling stock, and no better or finer car for any freight purpose

can be had than the patent screw-lever dump car.

I ask the favour of your submitting this offer to the Honorable the Minister for Works, and will be glad of an interview with the Honorable Mr. Wright or yourself to discuss this matter, at your earliest convenience.

One reason why I wish this interview soon is that I want to interview the Governments of Queensland and Victoria, who have written to me desiring to see me on the subject, but of course I could make much better terms with them if I should settle with the Government of New South Wales first.

Another reason is that a party of gentlemen here are talking of purchasing the patent, and of course if it is sold to them the Government here could get no such terms from them as I now offer.

Trusting to hear from you at your earliest convenience,

CARSON WOODS.

No. 15.

Mr. H. Hudson to Mr. T. Midelton.

Sydney, August 7, 1883. In answer to your enquiry as to what we would build 200 dump cars, similar to that now in Darling Harbour, I beg to say we are prepared to build 200 cars similar in every respect for one hundred and eighty pounds each (£180).

Should you determine to use dump cars it will be necessary to use side buffers to work in with the other rolling stock; this will increase the cost to the extent of ten pounds (£10) per waggon.

Yours respectfully HENRY HUDSON.

Minute.

By Commissioner:—I sent for this on receiving Mr. Woods' letter of 6th August. Mr. Woods names £190 as the price for the dump car, and Hudson Brothers offer to construct at the same price. Mr. Woods, however, if we accept his offer, will grant us the use of the patent free, not only for the 200 trucks but for all trucks; otherwise he wants £6,000 for the patent for New South Wales.—CH.A.G.

No. 16.

Messrs. Woods, Rich, & Co. to The Secretary for Public Works.

Šir, 35, North Pitt-street, Sydney, 13 August, 1883.

Enclosed we take the liberty of sending you a copy of a letter with reference to the United States See No. 14. screw lever dump car, which we sent the week before last to the honorable the Commissioner for Railways.

This copy will explain our reason for again bringing this most valuable freight-carrying improvement and necessity under your notice. Two Colonial Governments have, by their authorized agents, requested us to lay before them our claims concerning this United States screw lever dump car.

We are also in correspondence with New Zealand people, and from the tenor of their letters we have no doubt that if we do not part in each Colony with our patent rights we shall get large Government orders for cars, which we would much rather receive than part with these patent rights.

We feel assured that if the Government of this Colony will order cars as suggested in the enclosed

letter, or purchase the patent, we will make a much better and higher settlement with the Governments with

whom we are now in correspondence.

Of the sale of this United States dump car we speak with confidence. The master car-builders of the United States speak of it as a necessity. It is the most important and best freight car in the world we assert without fear of disproval. Therefore we hope that the enterprise of our Mr. Čarson Woods, in going over to the United States and selecting it and purchasing the patent, bringing it out here and placing the car before the Government of this Colony first, at his own risk, will be recognised.

As our principal is most anxious to go to the other Colonies, where he is invited, as soon as possible, we would most respectfully ask for an interview to discuss the matter at your earliest convenience.

We have, &c.

CARSON WOODS, RICH, & CO.

Minute.

By Secretary for Public Works:—Let Mr. Woods be asked at what price he is prepared to sell his patent right:—1st, for New South Wales; 2nd, for Australia.—F.A.W., 15/8/83.

No. 17.

The Commissioner for Railways to Mr. C. Woods.

Department of Public Works, Railway Branch, Sydney, 16 August, 1883. With reference to your letter of the 6th instant, on the subject of the United States screw lever dump car, I have the honor to inform you that I have brought your proposals under the attention of the Honorable the Secretary for Public Works, and he desires me to inquire upon what terms you are prepared to sell the patent right of the above car-

1. For the Colony of New South Wales?

2. For the whole of Australasia?

CH. A. GOODCHAP,

Commissioner for Railways.

No. 18.

Mr. C. Woods to The Commissioner for Railways.

Pitt-street, Sydney, 17 August, 1883. In reply to your letter of 16th instant, asking for the information of the Honorable the Secretary Sir. for Public Works,

1. The price at which I am prepared to sell the rights of the dump car patent for New South

The price for the whole of Australasia, –

I have the honor to say that I am not in a position to dispose of the rights for the Australasian Colonies, as

I have entered into other arrangements.

I am willing to give the Government of New South Wales the use of the patent for the sum of £6,000, (six thousand pounds), but I am prepared to make a contract to build here 200 (two hundred) cars, at the rate of £190 (one hundred and ninety pounds) each, and include in such price the right to use the patent for the 200 (two hundred) cars, and for any other cars hereafter to be built or altered for the use of the Government of this Colony.

I have, &c. CARSON WOODS.

No. 19.

Minute of Secretary for Public Works.

I should much prefer having dump cars made in the Colony, and should be disposed to arrange for purchase of Mr. Woods' patent right at a fair price, but I could not think of any such sum as £6,000 for a patent of this kind, that may at any moment be improved upon. An offer may be made for the patent right for New South Wales.

F.A.W., 23/8/83.

No. 20.

The Commissioner for Railways to Mr. C. Woods.

Department of Public Works, Railway Office, Sydney, 24 August, 1883. In reference to your letter of the 17th instant, stating that you are willing to sell the rights of the dump car patent, for the Colony of New South Wales, for the sum of £6,000, I have the honor, by direction of Mr. Secretary Wright, to inform you that he would prefer having the dump cars made in the Colony, and is disposed to arrange for the purchase of the patent rights at a fair price, but cannot entertain any such sum as you name, viz., £6,000. I have, &c.,

CH. A. GOODCHAP, Commissioner for Railways.

No. 21.

Messrs. Woods, Rich, & Co. to The Secretary for Public Works.

35 North Pitt-street, Sydney, 24 August, 1883. We most respectfully ask the favour of your decision with reference to "The United States Sir. screw lever dump car," as our Mr. Carson Woods is waiting for your reply, previously to starting for Queensland and New Zealand.

We have had from South Australia another communication, and are holding back our reply until we

have the honor of hearing from you.

In this communication we will not again enter into the merits of the car; these are acknowledged

now by all railroad men in every part, down even to the improved bogies.

Our Mr. Carson Woods will have the honor to wait upon you for your reply at 11:30 this We have, &c. morning.

CARSON WOODS, RICH, & CO.

Minute.

By Secretary for Public Works:—I will see Mr. Woods on Monday.—F.A.W., 25/8/83.

No. 22.

Messrs. Woods, Rich, & Co. to The Commissioner for Railways.

Sir, 35 North Pitt-street, Sydney, 24 August, 1883. We have the honor to enclose you copy of a letter we have this morning forwarded to the Honorable the Minister for Public Works in reference to "The United States screw lever dump car," as our Mr. Carson Woods having received invitations from the Governments of adjacent Colonies to submit his speciality for their inspection and approval, is most anxious to take his departure as soon as possible, and

therefore desires to have the honor of your decision as speedily as possible.

We hâve, &c., CARSON WOODS, RICH, & CO.

No. 23.

Messrs. Woods, Rich, & Co. to The Secretary for Public Works.

35 North Pitt-street, Sydney, 24 August, 1883. Sir. We have the honor to inform you that, by our advices, received by this mail from America, it will be imperatively necessary that our Mr. Carson Woods should take his departure for that country so

soon as he has attended the appointments he has with the other Colonial Governments.

In order, however, that he may receive the decision of your Government in reference to "The United States screw lever dump car," he will wait upon you to-morrow, during the hours of 11 and 12, and if not then convenient for him to receive an audience, will attend at the same time on Monday next, the 27th

Should neither of the times stated suit your convenience, we should feel it a great honor, under the circumstances, if you would be pleased to name an hour when the proposed interview can take place.

We have, &c. CARSON WOODS, RICH, & CO.

Minute.

By Secretary for Public Works:—I will see Mr. Woods on Monday.—F.A.W., 25/8/83. Woods asked to call.—G.B., 25/8/83.

No. 24.

Mr. C. Woods to The Commissioner for Railways.

Sydney, 27 August, 1883. Sir. I have the honor to acknowledge receipt of your letter of 24th instant, in which you intimate that Mr. Secretary Wright would prefer to have the dump cars made in the colony and is disposed to arrange for the purchase of the patent rights at what he considers a fair price, but cannot entertain such a

In reply, I beg to state that I am prepared to build (200) two hundred cars in the Colony, inclusive of the patent rights, for the sum of (£190) one hundred and ninety pounds each, and thus meet the suggestion of Mr. Wright.

In submitting the offer of the patent for the use of the Colony I did so at a price of $(\pounds 6,000)$ six thousand pounds, instead of $(\pounds 10,000)$ ten thousand pounds, and I am not disposed to renew my offer at the price named. As I am leaving for Melbourne by the end of the week I should be glad to be favored with I have, &c., CARSON WOODS. an early reply.

No. 25.

Minute of The Secretary for Public Works.

Mr. Woods' offers to build 200 dump cars in the colony at a price, delivered complete, of £190 each may be accepted, subject to the following conditions:—That the cars are equal in all respects to the one now in the possession of the Department; that they do not exceed the weight of the same; and that after delivery is complete the Government are to have the patent right for New South Wales for all cars they may build or have built by private firms. F.A.W., 28/8/83.

No. 26.

See No. 21.

No. 26.

The Commissioner for Railways to Mr. C. Woods.

Sir, Department of Public Works, Railway Branch, Sydney, 28 August, 1883. In reply to your letter of the 27th instant, having further reference to the proposal made by you with regard to the rights of the dump car patent, and in which you state you are prepared to build 200 cars in the colony, inclusive of the patent rights, for the sum of £190 each, I have the honor to inform you that I have submitted the above proposal to the Honorable the Secretary for Public Works, and he approves of the acceptance of the same on condition that the cars are delivered complete on the railway line, Sydney, at the price named, and that they are in all respects equal to and of the same weight as the one now in possession of the Department. It is, as a further condition of the acceptance of your offer, that after delivery of the above cars is completed the Government are to have free and undisturbed use of the patent rights for New South Wales for all cars they may build or have built by private firms. I have, &c.,

CHÁS. A. GOODCHAP, Commissioner for Railways.

P.S.—You will have to enter into a bond for the due fulfilment of your contract, and to assure the Government in the undisturbed possession of the patent right as far as the Government Railways of New South Wales are concerned. The cars to be delivered, fifty in nine months and the remainder in lots of fifty at three, six, and nine months, within the succeeding nine months.—Chas.A.G., 28/8/83.

No. 27.

Mr. C. Woods to The Commissioner for Railways.

Sir, 35, North Pitt-street, Sydney, 29 August, 1883. I have the honor and pleasure to acknowledge receipt of official acceptance of my tender for the supply to your Department of 200 screw lever dump cars. I now await your instructions as to where and when the bond and other requirements you ask for in your letter can be signed and fulfilled by me.

CARSON WOODS.

Minute.

Locomotive Engineer for specification.—G.B., 30/8/83. Urgent.

No. 28.

Minute from Locomotive Engineer to Commissioner for Railways.

I would point out that the dump car which, as it appears, is to be the pattern for the 200 to be built by, has a central buffer and coupler, for which the frame has been specially constructed. This will prevent their being used in connection with our present stock. Before preparing specification I shall be glad if you will inform me if the 200 are to be precisely similar to the pattern.

5/9/83.

Minutes.

By Commissioner:—No; they are to have buffers and draw-gear similar to our rolling stock, and a sketch should be sent to Contractors showing what is required. See that the present dimensions are such that they will not interfere with our platforms, &c., and alter as required.—Chas. A. G., 7/9/83. Please have a specification prepared accordingly for approval of the Mr. Midelton. Please make sketch of principal dimensions of dump Locomotive Engineer, B.C. Locomotive Engineer.—R.J.S. Mr. Midelton. car. See if it will clear if made 9.0 wide; make tracing of continuous draw-gear, and place diagonals, in underframe to suit side buffers, &c., and let me see it.—J.M., 12/9/83. Mr. Chambers. Tracing No. 852, showing draw-gear, buffers, side chains, and maximum width of waggon body, herewith.—J.C., 2/10/83. I think if the builders of these dump cars keep to the tracing 852, the waggons will gear nicely with our present stock; the width of vehicle must not exceed 9 feet at any part. As the cars are to be built to the pattern one (with the exception of what is shown on tracing 852) I hardly think a specification necessary, as it may involve complication.—J.M., 2/10/83. Locomotive Engineer.

By Locomotive Engineer:—Tracing No. 852, showing deviations required from the dump car, is in the possession of the Department.—W. Scott, 2/10/83. Commissioner.

No. 29.

Mr. C. Woods to The Commissioner for Railways.

35, New Pitt-street, Sydney, 1 October, 1883. I have the honor to inform you that I purpose leaving for America on the 4th instant, to make the necessary arrangements for the completion of my contract with your Department for 200 dump cars. Should you still think a bond necessary I am quite willing and ready to sign but upon that date, I must sail. I need scarcely say that my services while in other countries are freely at your command, and any information you may require I will gladly ascertain and advise you by mail.

CARSON WOODS.

Minute.

Locomotive Engineer for specification.—G.B., B.C., 5/10/83.

No. 30.

No. 30.

The Commissioner for Railways to Mr. C. Woods.

Department of Public Works, Railway Branch, Sydney, 4 October, 1883. Referring to your contract for the supply of 200 dump cars to this Department, I have the honor to forward herein a tracing, showing the maximum width of body (overall) and standard dimensions, &c., of buffers and draw gear for the same.

I may add that the usual bond will be prepared in due course.

I have, &c.,

ĆH. A. GOODCHAP,

Commissioner for Railways.

Minutes.

I saw Mr. Berner to-day re specification, as I thought he had slightly misunderstood the matter. As these cars are to be made to the sample vehicle now in our possession (except as regards buffer and draw gear, a drawing of which we have sent to Mr. Carson Woods), we hardly want a specification. I think if we specify anything more than we have, it will amount to making writing drawings of the car, and a specification to suit, and as there will be a difficulty (with our double buffers, &c.), in introducing the dumping gear or mechanism, I think we should leave the matter to the manufacturers.—J.M., 16/10/83. Engineer.

I think the tracing sent, and the pattern wagon is all that is required.—W. Scott, 18/10/83. The Mr. M'Lachlan for bond instructions.—G.B., B.C., 23/10/83. Herewith. -H. M'L., Commissioner.

17/11/84.

No. 31.

The Commissioner for Railways to The Crown Solicitor.

I HAVE to inform you that a contract has been entered into with Mr. Carson Woods for the supply of 200 dump cars, to be manufactured in the Colony, at £190 each. Each vehicle is to be made the same in all respects, with the exception of buffers, draw-bar, and head-stock, as the screw lever dump-car now in the possession of the department. The buffers, draw-bar, and headstock to be completed according to drawing sent to the Contractor. The whole of the timber work to be of the same quality and description as that in the sample waggon.

The whole of the metal work to be forged or cast as the case may be, and manufactured in the Colony,

and to be as far as possible of the same design and dimensions to that of the sample wagon.

The vehicles must be finished in the most substantial and workmanlike manner, and in every respect to the entire satisfaction of the Locomotive Engineer.

The cars are to be delivered on the rails at Sydney Station as follows:-

50 within 9 months from date of order. 12 50 15 50 50 18 ,,

The Contractor shall forfeit and pay to the Commissioner by way of liquidated damages, to be deducted from the money's due to the Contractor, the sum of 1 % on the contract price of each article for each week that each vehicle shall remain undelivered after the respective dates named.

Payments to be made on the certificate of the Locomotive Engineer that the vehicles have been

supplied to his satisfaction.

After the contract is completed the Government is to have the patent rights for New South Wales of the American lever dump car.

Please give directions for the preparation of the necessary bond.

G.B., pro Commissioner, 17/11/83.

Minutes.

Will the Commissioner please forward the specification, general conditions, and tender in the usual J.W., 30/11/83. The Commissioner for Railways, Sydney.

This contract was not made in the usual way, i.e., by calling for public tenders; consequently no specification was prepared, or Gazette notice. The conditions under which the contract was accepted are given in this paper. A copy of Mr. Woods' letter, agreeing to make the cars, is herewith.—G.B., pro Commissioner, 26/11/83. Crown Solicitor.

No. 32.

Minute from Traffic Manager to Commissioner for Railways.

I should be glad to know whether any decision has been arrived at with regard to the United States Car Company's dump car? It is standing in one of the sidings in Redfern Yard. Will the Commissioner W. V. READ, 2/11/83. please say.

Minutes.

Locomotive Engineer, B.C., 7/11/83.—G.B. By Locomotive Engineer:—As Mr. Carson Woods has a contract to supply 200 more of the same pattern, I think it would be well not to use it until the others are supplied.—W. Scott, 14/11/83. Commissioner.

By Secretary for Railways:—Traffic Manager to see. If it belongs to us and can be used I see no reason for its being left out of work.—D.V., 16/11/83. H Lut $\mathbf{B}\mathbf{y}$

By Traffic Manager:—It appears from Commissioner's 83-10,412, attached, that this car has been purchased by the Department, and it would be as well to use it if there is no objection by Locomotive Branch. The load it can carry should be marked on it.—W.V.R., 21/11/83. Locomotive Engineer. Mr. Midelton.—R.J.S., 23/11/83.

I have twice tried to use dump car for coaling locomotive engines, but it will not clear Darling Harbour Wharf Platform, so I am told. It has no side buffers, and the centre draw-bar and buffers do not match our stock; considerable alteration will have to be made if we are to use it regularly in traffic, and enough scheming required to construct a new car. It is marked to carry 20,000 lbs. in two places.—

J.M., 29/11/83. Locomotive Engineer. Traffic Manager.—R.J.S., 29/11/83.

By Traffic Manager:—Seen. I shall be glad if the Locomotive Engineer will let me know when the car is ready for traffic.—W. V. Read, 12/12/83. Locomotive Engineer. Mr. Midelton to say.—R.J.S., 14/12/83. Mr. Bourn to see me hereon.—J.M., 17/12/83. Please see Mr. Bourn's report of 29/12/83 herewith.—J.M., 5/1/84. Locomotive Engineer.

I beg to report that previous to the dump car being allowed to be used by the Traffic Department, it is necessary that it should be taken to pieces and reconstructed, as at present it is too wide and will not pass the platforms; it also requires to be fitted with buffers and draw-gear to suit the present rolling stock now in use.—E. W. Bourn, 29/12/83. Locomotive Overseer.

By Locomotive Engineer:—Under these circumstances I cannot recommend that it be used, as the contractors who have tendered to build to this pattern might make it a cause of complaint.—W. Scott, 16/1/84. Traffic Manager.

By Traffic Manager:—The Commissioner should be informed.—W.V.R., 19/1/84. Locomotive Engineer. Forwarded for the Commissioner's information.—R.J.S., 23/1/84.

By Commissioner:—It had better be made to suit the requirements, in order that those to be supplied may be made suitable. I do not understand Mr. Scott's report, which seems to imply that the present car is unsuitable, and yet it must not be altered because the contractors are to build others from this pattern; that surely cannot be the case, but Mr. Scott's minute reads like it.—Ch.A.G., 25/1/84.

By Locomotive Engineer:—I can assure the Commissioner that he only does me justice in assuming that I did not intend that meaning to be conveyed by my minute. Looking at the fact that this particular truck is (excepting in the matter of side buffers and reduced width), the pattern to which Mr. Woods has contracted to supply 200 more, I did not consider it prudent to alter in any way the pattern truck until I saw some of the new ones, particularly when I find that the alteration of the under frame to enable side buffers to be used would make it an unsatisfactory pattern to work to. I also assumed that Mr. Woods would have the frames of those to be built specially designed for side buffers.—W. Scott, 31/1/84. The Commissioner. Seen.—Ch.A.G., 8/2/84.

No. 33.

Minute from Traffic Manager to Commissioner for Railways.

American Dump Car.

I BEG to refer the Commissioner to his minute paper 83-21,488, and to inform him that the lately imported dump car, referred to therein, cannot be made use of until the draw gear is altered and side-buffers provided.

In a conversation I had with Mr. Augustus Morris recently, he informed me that these waggons were not a success in America.

It is, however, very important that this car should be brought into use at once, in order that any defects may be noted and corrected in those now being imported, and I should be glad if the Commissioner would please give instructions to have the necessary alterations carried out without delay.

W. V. READ, 14/1/84.

Minutes.

By Commissioner:—The dump car should be made available at once.—Ch.A.G., 21/1/84. Report in one month if it be not ready. Traffic Manager, B.C.,—G.B. Kindly return the paper in a month. In the meantime the Locomotive Engineer should see it so that he can have the truck made available—W.V.R., 22/1/84. Commissioner. Loco. Engineer, B.C., 23/1/84.—G.B. See minute of 31/1/84, on other papers.—W.S., per R.J.S., 31/1/84.

No. 34.

Extract from Locomotive Engineer's minute re coaling arrangements for locomotive purposes.

I may also mention that the dump cars would be specially suitable for dumping the coal on to the platform. W. SCOTT, 10/3/84.

APPENDIX.

Specification of Carson Woods, of No. 253, George-street, Sydney, in the Colony of New South Wales, importer, the agent of Matthew Van Wormer, of Dayton, Ohio, one of the United States of America, the author or designer of an invention entitled "Improvements in railway cars or waggons."

My invention relates to improvements in that class of railway cars or waggons known as "dumping which are capable of being tilted sideways on their trucks to empty their loads in bulk.

The novelty of the invention consists in the construction and combination of the devices employed

as will be herewith set forth and specifically claimed.

In the accompanying drawings figure 1 is a side elevation of my improved dumping car; figure 2 is an end view of the same; figure 3 is a plan view of the body, taken off the trucks and inverted; figure 4 is a sectional end view through the line x x of figure 1; figure 5 is a sectional side elevation through the line y y of figure 2.

The trucks A may be of the usual or any suitable construction.

Upon the top of each upper truck-timber at its middle is secured the centre body bearing plate B (shown at figure 6 in perspective). This plate is concave, as represented, and has a central-frusto-conoidal boss or extension a, through which the king-bolt passes down into the truck-timber and serves to lock the plate B thereto. The head of the king-bolt b is shaped to complete the cone of which the bars upon the plate is a frustum, as seen in figure 6. These plates B and their king-bolts form centre bearings for the body of Upon each side of the plate B flat metal plates C are secured to the upper truck-timber, and through each is one or more apertures forming recesses c, whose office will be hereinafter explained.

Bolted to the end of each upper truck-timber in any suitable manner, is a segmental rack D with

the concave side uppermost as shown.

The platform, or bed, of my improved car-body is composed essentially of the side beams E, end beams, F; longitudinal central beams, G; and transverse central transoms or beams H, supported by the

Directly over each truck-timber is a rocker piece I flat on top, and convex on its under surface, the whole forming the segment of an ellipse, as represented. These rocker pieces may be of wood, with the beams G mortised through them, and they are further supported by metal straps or plates J and K, of which the former passes over and the latter under the rockers I, and have their outer ends, which are turned down, bolted to the side timbers E. While the under surfaces of the plate K are convex to conform to the rockers I, their outer ends are concave as represented, for a purpose to be hereinafter explained. To strengthen and stiffen this framework, I employ the girder rods f as represented, and to form a further support for the bed-planks I use metal straps L in pairs, which are bolted to the end timbers F as represented. sented, pass over the plates J and K, and over and under supporting-blocks, secured upon the transverse beams H.

Securely bolted, or otherwise fastened to the lower side of the rockers I, at their middle, are centrebearing plates M with convex laver surfaces, and having in each a central recess or aperture g, to receive and contain the heads of the king-bolts and the frusto-conoidal stem of the plate B. It is thus clearly seen that the body of the car by the intervention of the plates M rests upon the plates B as central bearings, and at the same time the king-bolts and the stems of the plates B form pivots for each of the trucks while

To dump the car to either side I employ a central longitudinal shaft N, which is journaled in hangers h, supported by the beams G, and is further supported by passing through openings in the rockers I and beams H. This shaft carries two pinions O, keyed to it, which engage respectively with each of the racks D. The teeth of the pinions are tapered at each side, so as to permit of the play between the parts requisite in turning curves. Keyed upon the end of the shaft N, just under the platform at one end of the car, is a worm wheel P, which engages with a worm R, secured upon a vertical shaft S, passing up through the platform, and provided with a crank or hand-wheel T. By turning said hand-wheel, the shaft N is caused to rotate, and the car is tilted to either side desired. By the employment of this dumping gear with a worm-shaft, a positive lock is always secured, no matter in what position the body of the car may be. It cannot move from that position without a breakage of some of the parts. To assist, however, in retaining the car in an upright position, and lessen the strain upon the dumping gear, I employ rests or side beams. U, which consist of cylindrical metal pieces, carrying pivoted friction rollers *i* in their lower ends as seen. These supports, figure 7, are recessed in metal sockets secured in the rockers I on each side of the centre bearings, and are provided with laterally-projecting pins *j*, which, travelling in slots in the sockets, prevent the supports from falling out of the said sockets, and further prevent them from turning therein. These supports are sufficiently long, also, that when dropped down to their lowest extent, their rollers *l* rest upon the plates C. To lock them in this position so as to enable them to support the healy of the carry cook side. the plates C. To lock them in this position so as to enable them to support the body of the car on each side, I employ rods k, having their forward ends connected to levers W, which, pivoted below the platform, pass up through openings in the same. Each of these rods k, which are supported in the sockets I, so as to slide therein, is provided with two slides l of the shape represented, and so fitted into transverse openings in the rockers I adjacent to the support sockets, that when said rods are shifted by their levers the slides l will pass

over the tops of the supports, and prevent them from ascending into their sockets.

When it is desired to dump the car, it is only necessary to unlock the supports on the dumping side of the car, when, by turning the hand wheel as aforesaid, the car will turn and empty itself. During this tilting of the car the supports, or side bearings which were unlocked, will be pressed up into their sockets out of the way, and will not interfere with the dumping. When the car, after being dumped, is turned back into a horizontal position, the supports will fall of their own gravity back to their former position, when they can be legled as aforesaid.

position, when they can be locked as aforesaid.

In order to prevent the car, while in the act of being dumped, from being disengaged from its centre bearings, I employ studs or dowels m, which are secured in any manner desired, to the underside of the rocker-plates K between the supports U and the centre bearings. These dowels, while the car is tilting, enter the apertures c in the plates B, and serve to prevent the car from slipping or being displaced. The apertures c, as seen are sufficiently wide to receive the dowels, even though the car, when being dumped, stood on a short curve.

Especial attention is called to the floor planks X, which are raised, as seen, just over the rockers, for the purpose of enabling the car to be tilted over further without raising the bed higher than other cars of this class, or of ordinary cars. This result is further contributed to by the curved portions p of the rocker plates K, and by the employment of the strap supports L which, lying upon each other, occupy very little space.

The sides of the car are movable gates A¹, which are held in slotted posts or supports B¹, and these posts form journals for shafts C¹, as seen. The gates A¹, of which I employ two or more on a side, which are free to slide up and down in the slots of the posts, are connected to the shaft C1 by chains, ropes, or wire cords D1 as shown.

By employing permanent or removable cranks at either end of the shafts C1, they may be rotated, thus winding up the chains D1, and causing the gates on either side to be raised simultaneously. A reverse

motion would permit them to fall by their own gravity.

Another valuable feature of my invention consists of a director board for causing the dumped material, as gravel for instance, to fall close to the rails of the track. This I accomplish by hinging a board E¹ to the side beams by means of pivoted bracket-arms F¹ arranged as shown. By means of these swinging arms the board when not wanted for use, can be swung around so as to lie close to the side of the car, in which position the contents of the car would pass over it while being dumped, or it can be swung out as shown in figure 4, when it could act as a director to throw the load of the car close to the rails.

It will be observed that the dowels upon the under side of the rocker could be transferred to the

plates C, and in that case the recesses c would be formed in the plate K of the rocker.

My invention further relates to the construction of the car-bed; to the transoms; to the construction of the rockers and means whereby the car, after dumping, shall right itself up again; to a device for preventing the separation of the car-bed from the trucks; to the mechanism for dumping at either side of the car; to the means for fastening pulleys to the end of the truck-timbers; to the mechanism for fastening and unfastening the doors of the car; to the construction of the doors; to the end posts, and means for fastening the car-bed; to the centre-posts, and the means for fastening them to the car-bed; to the sidebearings and their application, so as to keep the car-bed in position, and to prevent undue friction while the car is moving around curves of the track; in combining with the draw-bar a rocker whereby the dumping may take place with the ordinary draw-bar without need of uncoupling the car from the other cars of the train; in an improved brake mechanism; in a special construction of clutch-pulley with grooves and sockets adapted to receive and hold the links of the chain, and whereby the revolving of the pulley to gradually tilt the car will operate the chain, and prevent its slipping; in means for dumping, either slowly or suddenly as desired; in a special construction of guide-rollers for the chains; in combining the shaft of the clutchcoupling pulleys, and their chain and its guide-pulleys with a worm, gear, or screw-lever for operating the same, and in other particulars hereinafter set forth.

In the drawings, figure 9 is an elevation of another improved dump-car; figure 10, a bottom view with one truck removed; figure 11, a cross section through line x of figure 10; figure 12, a top view of one of the trucks; figure 13, a plan of the couplers, and figure 14, a section through y y; figures 15 and 16 details showing the side bearings; figures 19 and 20, brake mechanism; figure 21, partial top view, parts being broken away, showing the coupler pulleys and their connections; figure 22, fragment enlarged of convex stationary bed; figures 23, 24, 25, 26, and 27, details.

Of the timbers of the car-frame, 1 1 represent cross-sills or headers, extending from the longitudinal sills 2 and 5, and framed or secured into the same; 3 and 4 represent shorter sills framed into the cross sills, or header 1, and not as long as the outside sills 6, 7, or the sills 2, 5, the objects of making them shorter being for the purpose of giving room or space for the worm and gear of the screw-lever or other appropriate mechanism which operates the chain-shaft hereinafter described, and also to allow sufficient space without weakening the car-bed for such bed to dump over the wheels, oil-boxes, and truck timbers, without coming in contact with any of them.

An iron or wood transom 8 is applied to run above the top or upper portion of the sills of the car, and even with or above the top of the floor, and it may make a part of the said floor, and other iron bars or wood transoms a, passing underneath the inside sills of the car, and passing up in the shape of a brace between the respective outside sills 6, 7, and the sills 2, 5 are fastened to the transom 8, making a sufficient space between the lower sides of these transom-braces a, and the truck timbers or truck irons to give the car-bed more and ample dumping room, without coming in contact with such timbers or irons, or with the oil-boxes when discharging any material from the car. These transoms or braces α also make the construc-

tion strong and safe.

The rockers and their arched beds are such, that after dumping, the car-bed will right itself up again, and they are constructed as follows:—9 representing the rockers, their stationary convex bed being shown at 10; each may be all of iron, or of iron and wood. The rockers 9 have each a short central downwardly projecting stud or boss b, which may be of ball shape if desired, and also a series of sockets c^2 , c^2 , adapted to receive the cogs c c, the object of this being that when the car is turned or dumped they will prevent the car-bed from getting out of position and at the same time permit the tilting of the bed far enough over and to a degree of pitch sufficient to discharge coal or other material without the risk of coming in contact with either the trucks, truck-irons, oil-boxes, or wheels, and also to permit the car to right itself up after dumping. The car or car-bed will automatically right itself after dumping, because when it is tilted or turned over to dump and is left free to return by disengagement of the V-shaped couplings on the shaft or shafts, 12 hereinafter described, the fulcrum or bearing-point of the rocker is no longer at the boss b and its central socket, but has been shifted to one or more of the cogs and to their sockets, thus giving a long leverage for that side of the car or bed which is for the time being raised up, and this causes that side to fall by its own weight till the car is again level. It will be seen that any mechanical equivalent of these sockets, teeth or cogs, and boss, which will allow the same action and result, may be substituted for them. A bar of iron or wood, represented at 11, is designed to hold the car-bed from separating from the trucks while the car is in transit or motion. It is bolted or fastened to the truck-timber, or to the lower convex bed 10, and extended upwards to be attached to either the upper rocker 9, or to the car-bed, or to a cross sill, and is provided with a bolt for connecting it to such part, or to any iron or wood fastened thereto.

A shaft (or shafts if desired) marked 12, runs lengthwise of the car under its floor, either its full

length or a sufficient distance for receiving at its end or ends coupling pulleys $e e^t$ having V-shaped teeth on their adjacent sides for engaging with each other. On this shaft 12 (if but one be used) are affixed permanently one near each end and to revolve with it two clutches e having V-shaped teeth as shown designed, each to be engaged or disengaged at will from its fellow, which is provided with similar V-shaped teeth, and

placed loosely upon the shaft and adapted to be shifted in or out of engagement with the fixed clutch e (see enlarged views, figures 13 and 20). This coupling apparatus is to be located beneath the transom 8, so that the latter shall in no wise interfere with its free revolution. A chain f (figures 9 and 10) passing over and clinging to the loose pulley e1 (the particular construction of which pulley will be hereinafter fully described) and winding partly around said pulley passes thence under guide pulleys gg adjustable if desired, secured to the rocker or to the timbers of the car-bed. This car also passes under guide pulleys hh (see figures 9, 11, and 25) attached respectively to the opposite ends of the truck-timbers or frame; then ends of the chain respectively pass up to and are fastened upon the car-bed, or upon the outside sills 6 7, or to the car

For the purpose of applying the pulleys h h to the outer ends of the truck timbers so as not to interfere with the proper action of the car-springs, I fasten to the end of the under-truck timber a strap or bar i (see figure 25) of wood or iron and connect it to the upper-truck timber by bolts extending into or through such truck timber, and through a slot in said strap or bar i, such slot allowing the springs between the two trucktimbers to work the same as though said strap or bar were not there. The slot may be in either end of the bar i. Another strap or bar i of iron, or of wood, is bolted to the lower end of the bar i, or to the trucktimber to which it is firmly attached, and extends outward sufficiently to admit the pulley h between the bars i and i^1 , the axis or journal of said pulley h being supported by the two straps l, l^1 . I will now describe the manner and the means of fastening and unfastening the doors automatically. A bar or rod of iron 15 fastened or suspended to the outside sills respectively of the car have thereon one or more dogs or levers K (see figure 11), and to the outer ends of such levers are pivoted one or more upright slides or latches l, adapted to extend a little above the floor of the car, sufficient to catch latch and hold down the swinging doors 16, which latches run in appropriate guides or staples m. The levers K are so constructed that when the car is being dumped their long arms will come in contact with or strike the truck-timber or truck-irons at the appropriate time and unlatch the doors 16. Each latch l is provided with a hole in which a pin n may be inserted to lock them when desired. When these pins are removed the latches are ready for their automatic action upon tilting the car as above stated.

Each door, 16 (see figure 9), is a batten-door mortised in timbers or iron o at each end and swinging on pivots at their upper ends. These doors are also supplied with and strengthened by metal cross-bars or straps p secured thereto, the lower ends of which are so bevelled or turned under at an incline as to allow These doors are also supplied with and strengthened by metal cross-bars or them readily to pass the upper bevelled ends of the latches l in the act of closing the doors. The weight of the levers k tends to throw up the latches l and to automatically fasten the doors when they shall have passed the latches. One or more straps g of wood or iron fastened on the outside of the door and extending below its lower line serves to prevent the door from swinging too far in. The door is also provided with one or more truss-rods r r1 either inside or out, or both, for the purpose of strengthening it and holding it

properly to place.

The upright end posts, 17, of the car and their connections are as follows: They rest respectively upon the outside sills 6, 7, and extend down on the side thereof a sufficient distance to admit of being strongly secured thereto by bolts or otherwise and extend far enough above the doors to permit the same to be hinged or attached thereto. Said posts, 17, are grooved or recessed on their inner corner (see figure 23) to receive the end board of the car so as to leave the inner face of said board or plank flush or even with the inside of the post, thereby preventing any obstruction when unloading, and also to make the car more firm and strong. A rod s of metal or wood extends across the end of the car, and through both these posts to hold them and the end plank or board t firmly in their places. There is also an iron or wooden brace u extending from each post to the end sill or floor to aid in bracing and holding said post, 17, to its place. The upright centre posts, 18, also rest and are secured respectively upon the outside and top of a sill, and each is further secured by a metal plate u^t which extends down and is fastened to the inside of the outside sills of the car, as seen in figure 24. A vetal rod v passes through both these opposite centre posts 18, 18 under the floor and above the sills, and is tightened by appropriate nuts or equivalent means for firmly holding the posts in place.

The side-bearings for holding the car and keeping it in position are represented at 19 in figure 11 and in an enlarged view in figures 17 and 18, and are as follows:—They severally consist of a bar of iron or wood adapted to rest on the truck-timber and extending upward and movably secured to the rocker or to the sills or transoms or floor of the car. Through a hole x having a slot or keyway y in the upper end of each side bearing passes a shaft or bolt z with a key or pin a2 thereon. This shaft is secured to the car as abovenamed. It is represented in the drawings as attached to the end of the rocker. This slot y allows the side-bearing to play at its upper end and thus prevent the friction which it would otherwise have if com-

pelled to travel or move rigidly upon the truck-timber when the car is moving around curves.

The outer end of the shaft or bolt z receives an arm b³ secured to it by a pin or screw for the purpose of permitting the said shaft and bearing to be moved by appropriate connections extending upward, and connecting with a rod e³, which extends and is attached to both side bearings on one side of the car on the front and rear trucks, said rod extending to the end of the car, and being there attached to a lever f^3 for the purpose of operating both side bearings, which are upon one side of the car, at one act by the same lever to allow the dumping. Similar side-bearings and attachments are on the other side of the car.

On the under side of each draw-bar, 20, is an arched or curved rocker, 20*, the object of which is to permit the car to be tilted for dumping or otherwise without the need of uncoupling any car from the other cars of the train. (See figures 15 and 16.) This rocker may rest on a curved bed, as shown in figure 16.

I will now describe my improved brake mechanism, consisting of a combination of levers, chains, and

pulleys, as follows, referring more particularly to figures 12 and 25; a bar 21 of metal or wood is also attached to the truck-timber by an arm, 22, and bolts or screws, is also attached to the brake rod or bar f^2 by an arm, 23, and bolts or screws. The two brake bars of each truck coincidently upon the inner perimeter of all the wheels of each truck by means of the following connections: This bar or lever, 21, which is connected to and immediately operates one of the brake bars and which, as above stated, is fulcrumed upon the lower truck-beam, is also connected by means of a rod or bar i^2 with one end of a lever j^2 at the opposite side of said truck-beam, the other end of said lever connecting with the other brake bar g^2 which acts upon the other two wheels of the same truck, thus giving a movement in opposite directions at the same time to the two brake-bars. Provision is made for adjusting the throw of the levers which actuate the brakes. The brakes and their bars are suspended by links $k^2 k^2$ from springing or yielding straps b^2 secured upon the truck

truck beams. This affords a yielding and play to meet varying exigencies, and a self-adaptation to the curvature of the wheel. To the upper end of bar 21 (see figures 19 and 20) is attached a chain (or a rod), which connects with a lever m^2 , one end of said lever being fastened to the sill or floor of the car, as shown at n^2 , and the other end being connected to a chain (or rod) of running in a direction lengthwise of the car, such chain passing around a pulley p^2 on or near the end of the car, and fastened at its extremity to an upright hand-lever, which lever is pivoted to the sill or below the sill of the car. By operating this lever the brakes are brought into action, and the lever may be held to any desired position by means of a rack or ratchet r^2 , with the teeth of which it may engage and be held.

The loose coupling pulley e^1 has cavities on its periphery precisely adapted to receive and hold positively therein the successive links of the chain f. These cavities may be described as follows in general terms: A series of oval-shaped depressions or sockets s2 (see figures 13 and 14), to receive those links which lie flat, such oval sockets communicating only by deep narrow cuts or grooves s³ sufficient to receive edgewise those links which connect the alternate flat-lying ones. Each flat-lying link is sunk below the periphery of the pulley or wheel; a pull upon the chain would therefore revolve the wheel. Consequently the revolution of this coupling pulley e^i must positively, and without any chance of slipping, pull the chain in the direction of its revolution, and thereby tilt the car. The chain being properly applied in the first instance, with sufficient slack at its opposite ends to permit the greatest degree of tilting ever required, the proper relation is always under control. The chain is thus always self-holding to its pulley, and can never slip; although

the chain is, as it needs to be for this purpose, a loose one.

For connecting and disconnecting these couplers $e e^1$ there is an annular groove e^4 around the periphery of the loose pulley e^{i} , into which projects a pin upon a shifting lever 24 (see figure 21) pivoted to a rod u^{2} extending lengthwise of the car, for operating both couplings if desired, said rod being actuated by means of a hand-lever at the end of the car or other convenient place. When by means of this lever the couplings are disengaged or uncoupled, the pulley e^1 may revolve suddenly as a loose pulley, in order to allow the carbed to discharge its load itself, when it will come back or return of itself to its upright position. When the coupling pulleys are coupled or engaged, then the car may be tilted slowly. This capacity for sudden dumping is important when clay, dump coal, or other damp or adhesive material constitutes the load, so as to discharge it with a jar or "thud;" but with other materials, which might be damaged by such jars or shocks, or when it is desired to deliver gradually, the V couplings when in engagement afford full control to tilt the car as far or as slowly as may be advisable. The guide-pulleys g for the chain f are hexagonal on their peripheries, thus presenting six flat surfaces of a size adapted to the flat-lying links of the chain, and a peripheral groove x^2 adapts them for receiving the intermediate or edgewise-lying links. (See enlarged view, figure 27.) Thus these pulleys fit all the surface of the chain, and prevent its getting off. They may be flanged also if desired. Instead of being hexagonal, these pulleys may have eight or more peripheral faces. The pulleys h are circular, but with an annular groove to receive the edges of alternate links of the chain.

Having thus fully described my invention, what I claim is: First—In a dumping car the combination of the following instrumentalities: Segment rocks attached to the trucks, pinions engaging with said rocks attached to the car-body by a common shaft, and an actuating worm-shaft connected to the pinion shaft by a worm-wheel, whereby the car can be dumped to either side, and whereby a positive lock is effected between the car-body and trucks, no matter in what position of inclination the car

body may stand. Second—In a dumping-car the combination with rockers upon which the car-body turns and rests of central bearing pivots, consisting of concave plates B, with frusto-conoidal stems and kingbolts, whose heads complete the cones of which the plate-stems are frustums as specified.

-In a dumping-car the combination with the trucks whose upper timbers are provided with central bearings and pivots and flat metal bearing-plates of convex rockers attached to the body of the car, and mounted upon said central pivots and bearing plates as specified.

Fourth—In a dumping-car the rockers I carrying upon their under surfaces the reversed curved metal plates K and the central recessed convex bearing-plates M, in combination with the

subjacent concave plates B and their conical pivots, substantially as specified.

Fifth—In a dumping-car the combination with rockers on which the body turns and rests, and by which it is pivoted to the trucks of telescopic gravitating side bearings, whereby when said side bearings are extended and locked the car-body is prevented from turning to either side as specified.

Sixth—In a dumping car the combination with the rockers I of the side bearings or supports U recessed in sockets in said rockers and carrying at their lower ends friction rollers as and for

the purpose specified.

Seventh-In a dumping car the combination with the telescopic gravitating side bearings or supports U of locking-slides connected to shifting rods actuated by levers upon the platform, whereby upon moving said levers in one direction said side bearings are locked to enable them to support the body of the car and prevent it from tilting, and whereby upon moving said levers in an opposite direction said side bearings are unlocked and will permit the car to be dumped by ascending into their sockets as specified.

Eighth—In a dumping car the combination with the rockers I and recessed plates C of dowels or studs connected to the lower side of said rockers and adapted to enter the recesses in the plates to prevent the body of the car from slipping or becoming displaced when dumped as

Ninth—The herein-described construction of the car bed or body, consisting of the side beams E, end beams F, longitudinal central beams G, transverse central transoms H, girder rods f, and strap braces L, the whole constructed and united in the manner and for the purpose

Tenth—The vertically rising and lowering gates Λ^1 in combination with actuating shafts C^1 , connected thereto by chains, ropes, or cords as specified, whereby upon rotating said shafts the

gates on either side are raised or lowered simultaneously.

Eleventh—In a dumping car the bed or platform raised transversely across and above the trucks whereby the car can be turned over further without raising the main body of the car higher Twelfththan ordinary cars substantially as described.

Twelfth—In a dumping car the directing or deflecting board hinged to the side of the car by

swinging brackets substantially as shown and described.

Thirteenth—The car-bed as made with the cross-sills and headers 1 1 extended from the longitudinal sills 2 5, and which reach from end to end of the car, and framed or fastened thereon, and with the shorter longitudinal sills 3 4 framed into the headers 1 1, and with the outside sills 67, the construction affording space at the ends of the car and between the sills 25, for the worm and gear or machinery which operates the dumping mechanism, and ample clear space at the sides for dumping, and all without weakening the car-bed.

Fourteenth—The rocker 9 constructed with a short central round boss b, and with a series of stout cogs cc on its under side, in combination with the convex-bed 10, constructed with the shallow central socket c^1 and the sockets c^2c^2 , on its upper side adapted for the cog teeth cc, all as shown and described and for the purpose of dumping the car and of permitting it to

right itself again.

Fifteenth—The dumping shaft or shafts 12 extending nearly the length of the car, in combination with the clutch-pulley thereon and with the linked chain and the described series of pulleys or devices for actuating the same and for connection with a hand lever or wheel and a connecting worm and gear, whereby such shaft may be operated to dump either slowly or suddenly at option.

Sixteenth—The combination with the ends of the truck timbers of the straps $i^i i^i$ and their interposed guide-pulley h, these straps being constructed and applied to each other and to the truck timbers substantially as set forth, so as not to interfere with the proper action of the

inteenth.—In combination with the swing-doors the bar or rod 15 one or more dogs or levers k beneath the car, one or more vertical slide-latches l and their guides, the combination and arrangement being such that the inner end of the dogs k may serve automatically to fasten or to unfasten the doors in the manner shown and described.

Eighteenth—The swing doors constructed as described—that is to say, morticed in timbers or iron supports O at each end, strengthened by truss-rods rr and by metal cross-bars or straps phaving bevelled lower ends for engagement with the fastening latches, and provided with one

or more straps or projections q as and for the purposes set forth. Nineteenth—In combination with the car-bed, the end posts 17 resting on the outside sills and extending down and secured to the outside of the same, and extending high enough to permit the swing-doors to be attached thereto, said posts being grooved or recessed at their inner corners to receive the end board t of the car flush with the inside of the posts, the posts and the board being held together by a connecting-rod and braced by braces u, all substantially as shown and described.

Twentieth—The centre posts 18 made and applied to the car-bed as described, and assisting to support the swing-doors, and strengthened by an inside metal plate u^1 and by a tightening

rod v beneath the floor connecting the two opposite ends.

Twenty-first-In combination with the car the movable side bearings 19, provided at their point of suspension with a slot or keyway as described, whereby, while holding the car in position during transit, and adapted to be swung up for dumping, they also prevent undue friction when the car is in motion around curves

Twenty-second—In combination with the drawbar the rocker or arched piece 20,* secured upon

its under side as and for the purpose described.

Twenty-third—In combination with a dumping car, brake mechanism, as described, consisting of the combination of bar 21, arm 22 on the truck timber, arm 23, brake bars f^2 g^2 , rod or bar i^2 , lever j^2 , links k^2 , and yielding straps l^2 , and appropriate means for actuating the same from the car platform.

Twenty-fourth—In combination with a dumping car the pulley e¹, made integral with its deep sockets s², and their narrow connecting grooves, and with the V teeth and the annular

groove, as and for the purposes set forth.

Twenty-fifth—In combination with a dumping car, the pulley shaft the loose pulley e¹, made integral with its deep sockets, and connecting grooves, V teeth, and annular groove as set forth, the pulley e and appropriate mechanism for disengaging these pulleys, and to allow the car bed to dump its load suddenly or slowly, as desired.

Twenty-sixth—In combination with a dumping car, and with the pulley shaft, its fixed pulley e and the loose pulley e', made integral with its sockets, grooves, V teeth, and annular groove, the shifting lever, 24 rod u^2 and hand lever v^2 , these devices operating as and for the purposes

Twenty-seventh—In combination with the linked chain f, attached to both sides of the car bed, the guide pulleys g, made with flat surfaces w, adapted for the links, and with the peripheral

groove x, as shown and described.

Twenty-eighth—In a dumping car the combination with the pulley shaft and with the described mechanism for operating the same of the pulley e, the pulley e', made integral with its sockets, connecting grooves, V teeth, and annular groove, the linked chain, guide, pulleys gg, grooved as described, and the guide pulleys hh, made as described, the ends of the chain being fastened to the outside on sills or floor, all substantially as shown and described. to the outside car sills or floor, all substantially as shown and described.

In witness whereof I, the said Carson Woods, have hereto set my hand and seal this twenty-seventh day of April, one thousand eight hundred and eighty-three.

CARSON WOODS.

Witness—Fred. Walsh, Manager, Edward Waters' Patent Office, Sydney.

LETTERS OF REGISTRATION.

By His Excellency the Right Honorable Sir Augustus William Frederick Spencer Loftus (commonly called Lord Augustus Loftus) Knight Grand Cross of the Most Honorable Order of the Bath, a Member of Her Majesty's Most Honorable Privy Council, Governor and Commander-in Chief of the Colony of New South Wales and its dependencies.

To all to whom these presents shall come, greeting: WHEREAS Carson Woods, of No. 253, George-street, Sydney, in the Colony of New South Wales, importer, hath by his petition humbly represented to me that he is the author or designer of a certain invention or improvement in manufactures, that is to say, of an invention entitled "Improvements in railway cars or waggons," which is more particularly described in the specification marked A, and the three sheets of drawings marked B, C, and D respectively, and which are hereunto annexed, and that he, the said petitioner, hath deposited with the Honorable the Treasurer of the said Colony of New South Wales the sum of twenty pounds sterling for defraying the expense of granting these Letters of Registration, as required by the Act of Council 16 Victoria, No. 24, and hath humbly prayed that I would be pleased to grant Letters of Registration whereby the exclusive enjoyment and advantage of the said invention or improvement might be secured to him for a period of fourteen years: And I being willing to give encouragement to all inventions and improvements in the arts or manufactures which may be for the public good, and having received a report favourable to the prayer of the said petition from competent persons appointed by me to examine and consider the matters stated therein, and to report thereon for my information, and am pleased, with the advice of the Executive Council, and in exercise of the power and authority given to me by the said Act of Council to grant and do by these Letters of Registration grant unto the said Carson Woods, his executors, administrators, and assigns, the exclusive enjoyment and advantage of the said invention or improvement for and during the term of fourteen years from the date hereof, to have hold and exercise unto the said Carson Woods, his executors, administrators, and assigns, the exclusive enjoyment and advantage thereof for and during and unto the full end and term of fourteen years from the date of these presents next and immediately ensuing and fully to be complete and ended: Provided always that if the said Carson Woods shall not within three days after the granting of these Letters of Registration register the same in the proper office in the Supreme Court at Sydney in the said Colony of New South Wales then these Letters of Registration and all advantages whatsoever hereby granted shall cease and become void. In witness whereof I have hereunto set my sign manual, and have caused the present Letters of Registration to be sealed with the seal of the said Colony of New South Wales, at Government House, Sydney, in New South Wales, this twenty-ninth day of June, in the year of our Lord one thousand eight hundred and eighty-three.

AUGUSTUS LOFTUS.

Sydney: Thomas Richards, Government Printer.—1884

[1s. 3d.]

1883-4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

REPORT FROM THE SELECT COMMITTEE

ON THE

PURCHASE OF RAILWAY ROLLING STOCK;

TOGETHER WITH THE

PROCEEDINGS OF THE COMMITTEE,

MINUTES OF EVIDENCE,

AND

APPENDIX.

ORDERED BY THE LEGISLATIVE ASSEMBLY TO BE PRINTED, 29 October, 1884.

SYDNEY: THOMAS RICHARDS, GOVERNMENT PRINTER.

1884.

1043-л

[7s.]

EXTRACTS FROM THE VOTES AND PROCEEDINGS OF THE LEGISLATIVE ASSEMBLY.

Votes No. 144. Tuesday, 12 August, 1884.

8. Purchase of Railway Rolling Stock:—Mr. Sydney Smith moved, pursuant to amended Notice,—
(1.) That a Select Committee be appointed, with power to send for persons and papers, to inquire into and report upon the purchase of Rolling Stock, Material, &c., for the Government Railways and Tramway Works of the Colony.

(2.) That such Committee consist of Mr. Sutherland, Mr. Fletcher, Mr. Suttor, Mr. George Camp-

bell, Mr. Chapman, Mr. Poole, Mr. Teece, Mr. Wright, Mr. Garrard, and the Mover.

Debate ensued.

Question put and passed.

Votes No. 147. Friday, 15 August, 1884.

2. Purchase of Railway Rolling Stock:—Mr. Sydney Smith (by consent) moved, without Notice, That the Return to Order "Springs for Railway Engines and Carriages," laid upon the Table on 5th July, 1881, and the Return to Order "Dump Cars," laid upon the Table on 21st May, 1884, be referred to the Select Committee now sitting on "Purchase of Railway Rolling Stock."

Question put and passed.

Votes No. 148. Tuesday, 26 August, 1884.

5. Purchase of Railway Rolling Stock:—Mr. Sydney Smith (by consent) moved, without Notice, That the Return to Order "Railways, Springs for Engines and Carriages," laid upon the Table on the 25th November, 1879, be referred to the Select Committee now sitting on "Purchase of Railway Rolling Stock."

Question put and passed.

Votes No. 160. Tuesday, 23 September, 1884.

3. Purchase of Railway Rolling Stock:—Mr. Melville presented a Petition from Carson Woods, Esquire, praying for leave to appear by Counsel or Attorney before the Select Committee now sitting on "Purchase of Railway Rolling Stock," and to give evidence before the Committee. And the same having been read by the Clerk, by direction of Mr. Speaker,—Petition received, and referred to the said Committee.

Votes No. 176. Thursday, 23 October, 1884.

3. Purchase of Railway Rolling Stock:—Mr. Sydney Smith (by consent) moved, without Notice, That leave be granted to the Select Committee on "Purchase of Railway Rolling Stock" to sit to-morrow.

Question put and passed.

Votes No. 178. Wednesday, 29 October, 1884.

9. Purchase of Railway Rolling Stock:—Mr. Sydney Smith, as Chairman, brought up the Report from, and laid upon the Table the Minutes of Proceedings of, and Evidence taken before the Select Committee for whose consideration and report this subject was referred on 12th August, 1881; together with Appendix.

Mr. Smith then moved, That the document be printed. Debate ensued.

Question put and passed.

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1883-4.

PURCHASE OF RAILWAY ROLLING STOCK.

REPORT.

The Select Committee of the Legislative Assembly, appointed on the 12th August, 1884,—"with power to send for persons and papers, to inquire into and report upon the Purchase of Rolling Stock, Materials, &c., for the Government Railways and Tramway Works of the Colony;" and to whom the following papers were referred,—on the 15th August, "the Return to Order 'Springs for Railway Engines and Carriages'" and "the Return to Order 'Dump-cars'"; on the 26th August, "the Return to Order 'Railways—Springs for Engines and Carriages'"; and on the 23rd September, "the Petition of Carson Woods, Esquire,"—have agreed to the following Report:—

Your Committee find from the evidence on the subject of the ordering of 200 dump-cars, that on 2 April, 1883, Mr. J. C. Dibbs, agent for the patentee, submitted to the Commissioner for Railways plans, photographs, and particulars of the United States Car Co.'s screw-lever dump-car, which were forwarded by the Commissioner to the Traffic Manager for report. The Traffic Manager, in a minute dated 5 April, 1883, stated "that with certain alterations to the station arrangements, cars, according to the plans submitted, could be rendered useful for a certain class of traffic." On 6 April the papers, together with the Traffic Manager's minute, were submitted to the Acting Locomotive Engineer (Mr. Midelton), whose report, dated 17 April, 1883, was by no means favourable to the adoption of the car for traffic purposes.

Mr. J. C. Dibbs, in a letter dated 8 May, 1883, informed the Commissioner that a dump-car had arrived, and would be landed in a few days. Ten days subsequent to this, on 18 May, the Acting Secretary for Public Works, Mr. Stuart, approved of the car being tried and taken, "if found suitable as an experiment," which decision was communicated to Mr. Dibbs on the 22nd of the same month. This sample car was put together, and three tests of its capabilities were made during the month of June following. At these tests the car was filled with gravel, ashes, and billet-wood respectively, but in no case was the dumping, which had been

advanced as a special feature, successful.

Notwithstanding the unsatisfactory nature of these trials, and also that the car was otherwise deficient, and could not be used with safety on our lines, this

sample car was purchased at a cost of £225.

On 17 August of the same year Mr. Carson Woods, the patentee, proposed to sell to the Government the use of the patent for £6,000, or to build here 200 cars according to sample for the sum of £190 each, inclusive of the right of the Government to use the patent. Seven days later (24 August), Mr. Woods was informed that the Secretary for Works would prefer having the cars made in the Colony, and was disposed to arrange for the purchase of the patent right at a fair price, but could not give any such sum as £6,000 for a patent of this kind which might at any moment be improved upon. Mr. Woods, on 27 August, stated in reply that he was prepared to build 200 cars in the Colony, inclusive of the patent, for the sum of £190 each, and thus meet the suggestion of the Minister.

The next day (28 August) the Secretary for Public Works accepted the offer subject to the following additional conditions:—That the cars are equal in all respects to the one now in the possession of the Department; and that they do not exceed the

weight

In a foot-note the Commissioner added that the cars were to be weight of the same. delivered fifty in nine months, and the remainer in lots of fifty in three, six, and nine months, within the succeeding nine months, which decision was communicated to Mr.

Woods, and the agreement was confirmed by him on 29th August.

This contract for 200 cars, at a cost of £38,000, or £190 each, was accepted without the responsible officers of the Locomotive and Traffic Departments being consulted, (after the trials had taken place,) as to their opinion concerning its suitability for our Railway purposes, and the advisability of its general adoption. No report appears to have been asked for or received from the officers referred to from 17 April, which was prior to the arrival of the sample car, until after the confirmation of Mr. Woods's contract.

It appears, however, that on the occasion of the billet-wood test Mr. Midelton, who was not then in charge of the Locomotive Department (Mr. Scott having resumed duty) expressed a favourable opinion regarding the lightness of the bogie, but states emphatically that he never advised the Minister to purchase the cars, and his minute of 17 April, 1883, is unfavourable to their introduction. On 30 August Mr. Scott. the Locomotive Engineer, was asked by the Commissioner for a specification, and on 5 September he pointed out "that the dump-car, which as it appears, is the pattern for the 200 to be built by, has a central buffer and coupler, for which the frame has been specially constructed; this will prevent its being used with our present stock."

The Commissioner, in reply, directed "that they are to have side-buffers and draw-gear similar to our rolling stock, and a sketch should be sent to contractors showing what is required. See that the present dimensions are such as they will not interfere with our platforms, &c., and alter as required." A tracing was supplied (See Separate Appendix, No. 2), showing certain alterations, which Mr. Carson Woods states he considers were "Extras."

It seems that the Locomotive Officers, knowing that a contract had been entered into for cars as per sample, were very unwilling to advise any alterations; in short, Mr. Midelton on 16 October, 1883, stated that there would be some difficulty (with our double buffers) in introducing the dumping gear or mechanism, and said he thought the matter should be left to the manufacturer.

It appears also that the usual bond between the Government and the

Contractor has not been signed.

Recently a number of dump-cars arrived from America, and Mr. Scott, Locomotive Engineer, Mr. Midelton, Locomotive Foreman, Mr. Bourne, Inspector of Rolling Stock, and Mr. Bingham, Foreman of the Carriage and Waggon Department, were examined upon these and also upon the sample one. Their evidence (see also reports in Appendix G) was of such a condemnatory character that your Committee deemed it their duty, in the interest of the public, to offer a Special Report to Parliament; but it could not be presented in consequence of the opposition of the Government.

Your Committee find also that the cars contracted to be made in the Colony were imported and put together in the Government premises known as the old Atlas Works, which premises were let to Carson Woods & Co. at a rental of £2 per week,

including the use of the wharf thereat for the landing of materials.

From the facts adduced in the evidence, your Committee find that the sample dump-car, and also those recently imported after its pattern, are unsuitable

to the present conditions of our Railway requirements.

Your Committee also find that the officers immediately responsible for the safe and satisfactory character of rolling stock were not consulted before the contract for 200 additional cars was agreed upon. To make an agreement such as this in the injudicious manner apparent from the evidence, and where such a large expenditure of public funds as £38,000 is involved, is in the opinion of your Committee a most objectionable proceeding.

Your Committee find it was agreed that these cars were to be made in the

Colony, whereas the different parts are being imported from America and merely

put together here, which is an evasion of the spirit of the agreement.

That the cars have not been delivered within the contract time.

Your Committee find that the combined motor and car, concerning which Mr. Tramway-Locomotive-Superintendent Downe was sent to America, with a view to authorize a number being made for the Colony, the cost of which has been considerable

considerable both in manufacture and maintenance, owing to their faulty design, are not nearly so good as those in general use on our Tramway lines, and known as the Baldwin motors. Of this recent introduction two have been running for some time past (and, latterly, four), and have by no means given satisfaction in their working, the ordinary Baldwin motor proving itself by far the most economical and suitable for the necessary requirements of our street traffic. It appears, too, that an order for thirty additional combined motors, to cost about £31,500, has been approved by the Secretary for Public Works, but has been withheld till the conclusion of this inquiry, and we recommend that the order be not executed.

It transpires from the evidence given before your Committee, in reference to the tram-cars originally contracted to be made with six wheels, but afterwards constructed with four wheels only, and which had some time subsequently to be again altered and placed upon four-wheeled bogies, that they were, as regards their construction on four single wheels, in which way they were for sometime running, expensive regarding wear and tear, and also unsafe. On the 1st February, 1884, in reply to certain questions asked in Parliament as to the loss caused by the alterations to the bogies referred to, it was stated to be only £25 each, whereas we find that the actual cost far exceeded that amount, and it is to be regretted that such misleading state-

ments should have been made and Parliament deceived thereby.

Your Committee find that 250 trucks, fitted with a patent coupler, have been made and supplied to the Government for Railway use at considerable expense. The evidence upon this matter is not complete, owing to the necessity for a speedy conclusion of our inquiry, but sufficient has transpired, however, to warrant your Committee in recommending that before any further expense is incurred in that direction, or the trucks brought into general use, that a careful inquiry be made by the Government regarding the safety and serviceableness of the coupler in question.

the Government regarding the safety and serviceableness of the coupler in question.

Your Committee also find that an exceedingly objectionable and unfair practice exists of giving to agents and others large orders for expensive supplies, without first inviting tenders, thus permitting a monoply to the few. This is to be condemned, because in the competition of the many the same goods might be obtained for a much less cost, and a more general encouragement given to manufacturers to develop their several resources. Your Committee recommend therefore that public tenders be called for in all cases of rolling stock and materials required for the Government Railways and Tramways.

Although your Committee, owing to the limited time at their disposal consequent upon the early expected prorogation of Parliament, and being debarred from sitting during any adjournment of the House, have been unable to obtain evidence upon many other matters of importance regarding the purchase of rolling stock, materials, &c., they trust that what has been done with the restricted facilities at their command will result in a system being adopted whereby more care will be used to obtain proper information before entering upon contracts of the kind under consideration, the neglect of which, in too many cases, results in loss to the Department and danger to the public.

The whole matter is of such weighty importance to the country and community in general that, from the facts brought to light, your Committee fear there is much yet that should be revealed, and do not consider their labours satisfactorily ended, and would therefore recommend the reappointment of the Committee next

session.

In connection with the procuring of evidence for this Committee it has been necessary to call for statements from officials, who have testified according to their experience, but whose testimony might not be looked upon with approval from their immediate superiors. These witnesses your Committee desire to see protected in that manner which the importance of such an inquiry as this demands.

SYDNEY SMITH, Chairman.

No. 3 Committee Room, Sydney, 29th October, 1884.

PROCEEDINGS OF THE COMMITTEE.

FRIDAY, 15 AUGUST, 1884.

MEMBERS PRESENT:

Mr. Sydney Smith,

Mr. Chapman, Mr. Poole,

Mr. Teece, Mr. Garrard, Mr. Sutherland.

Mr. Smith called to the Chair.

Entry from Votes and Proceedings, appointing the Committee, read by the Clerk.

Committee deliberated.

Ordered,—That W. V. Read, Esq., and Mr. William Scott, be summoned to give evidence next meeting.

[Adjourned to Tuesday, 26 August, at Eleven o'clock.]

TUESDAY, 26 AUGUST, 1884.

MEMBERS PRESENT:-

Mr. Sydney Smith in the Chair.

Mr. Garrard, Mr. Sutherland, Mr. Teece, Mr. Poole, Mr. Suttor, Mr. Chapman.

Entry from Votes and Proceedings, referring Return to Order "Springs for Railway Engines and Carriages," and Return to Order "Dump Cars," read by the Clerk.
Printed copies before the Committee.

Chairman read a letter from Mr. Dibbs requesting that his name should be substituted for that of Mr. Wright on the Committee.

William Vero Read, Esq. (Traffic Manager of the Great Southern and Western Railways), called in, sworn, and examined.

Witness withdrew.

Motion made (Mr. Chapman) and Question,—That the Chairman take the usual steps to obtain the leave of the House for the Committee to sit during any adjournment,—put and passed. Committee deliberated.

Ordered,-That Mr. William Scott be summoned to give evidence next meeting.

[Adjourned to To-morrow, at Eleven o'clock.]

WEDNESDAY, 27 AUGUST, 1884.

MEMBERS PRESENT:-

Mr. Sydney Smith in the Chair.

Mr. Poole,

Mr. Chapman,

Mr. Teece.

Entry from Votes and Proceedings, referring Return to Order, "Railways, Springs for Engines and Carriages," read by the Clerk.
Printed copies before the Committee.

Mr. William Scott (Locomotive Engineer, Railway Department) called in, sworn, and examined. Witness withdrew

Mr. Edward John Bourn (Inspector of Rolling Stock) called in, sworn, and examined. Witness withdrew.

Committee deliberated.

Ordered,-That Mr. George Bingham and Mr. Thomas Midelton be summoned to give evidence next meeting.

[Adjourned to Friday next, at Eleven o'clock.]

FRIDAY, 29 AUGUST, 1884.

MEMBERS PRESENT:

Mr. Sydney Smith in the Chair.

Mr. Poole,

Mr. Teece. Mr. Chapman.

Mr. Sutherland,

Mr. Thomas Midelton (Locomotive Overseer, Railway Department) called in, sworn, and examined.

Mr. George Bingham (Foreman of the Carriage and Waggon Department, Railways) called in, sworn, and examined.

Witness withdrew.

Witness withdrew.

Committee deliberated.

Ordered,—That the Hon. F. A. Wright, M.P., be requested, and Charles A. Goodchap, Esq., be summoned, to give evidence next meeting.

[Adjourned to Wednesday next, at Eleven o'clock.]

WEDNESDAY, 3 SEPTEMBER, 1884.

MEMBERS PRESENT:-

Mr. Sydney Smith in the Chair.

Mr. Chapman,

Mr. Sutherland,

Mr. Poole,

Mr. Garrard,

Charles Augustus Goodchap, Esq. (Commissioner for Railways), called in, sworn, and examined. Witness handed in a tracing of the proposed Coal Stage at Eveleigh, showing the mode of discharging the coal from the higher to the lower level, and supplying the Engines by means of small trucks, which was ordered to be appended. (See Separate Appendix 1.)

Witness to supply a Report as to whether the Dump-cars ordered by the Government from Messrs. Carson Woods and Company, were being made in the Colony.

Witness withdrew.

Committee deliberated.

Ordered,—That the Honorable F. A. Wright, M.P., be requested, and John Rae, Esq., be summoned to give evidence next meeting.

[Adjourned to Friday next, at half-past Two o'clock.]

FRIDAY, 5 SEPTEMBER, 1884.

MEMBERS PRESENT:

Mr. Sydney Smith in the Chair.

Mr. Chapman, Mr. Garrard,

Mr. Sutherland,

Mr. Suttor,

Mr. Poole.

Henry Hudson, Esq., called in, sworn, and examined.

John Rae, Esq. (Under Secretary for Public Works), called in, sworn, and examined.
Witness handed in papers in reference to the contract of Messrs. Carson Woods & Co. with the Government to deliver 200 dump-cars.

Witness withdrew.

Mr. William Scott called in and further examined.

Witness withdrew.

Mr. Thomas Midelton called in and further examined.

Witness withdrew.

Mr. Edward John Bourn called in and further examined.

Witness withdrew.

Committee deliberated.

Re-assembling of the Committee to be arranged by the Chairman.

[Adjourned.]

TUESDAY, 16 SEPTEMBER, 1884.

MEMBERS PRESENT:-

Mr. Sydney Smith in the Chair.

Mr. Sutherland,

Mr. Chapman,

The Hon. Geoffrey Eagar (Under Secretary for Finance and Trade) called in, sworn, and examined. Witness handed in copy of the letter of instructions to Mr. Woolcott on his appointment as collector of the rents on the resumed property at Pyrmont, which was ordered to be appended. Appendix B.)

Witness withdrew.

William Prout Woolcott, Esq., called in, sworn, and examined.

Witness handed in copy of the Memorandum of Agreement with Mr. Carson Woods leasing the Atlas Works at Pyrmont, which was ordered to be appended. (See Appendix C.)

Mr. Edward John Bourn called in and further examined.

Witness withdrew.

Mr. George Bingham called in and further examined.

Witness withdrew

Mr. Thomas Midelton called in and further examined.

Witness withdrew.

Mr. William Scott called in and further examined.

Witness handed in tracing of the American Dump-car, showing alterations to be made, which was ordered to be appended. (See Separate Appendix 2.)

Witness withdrew.

Committee deliberated. Ordered,—That the Hon. F. A. Wright, M.P., be requested, and Mr. Thomas Midelton be summoned to give evidence next meeting.

[Adjourned to To-morrow, at *Eleven* o'clock.]

WEDNESDAY, 17 SEPTEMBER, 1884.

MEMBERS PRESENT:-

Mr. Sydney Smith in the Chair.

Mr. Chapman,

Mr. Teece,

Mr. Garrard,

Mr. Poole,

Mr. Sutherland.

Mr. Thomas Midelton called in and further examined.

Witness withdrew.

Motion made (Mr. Poole) and Question,-That the Chairman take the necessary steps to obtain the leave of the House for this Committee to make a Special Report, -put and passed.

Chairman submitted Draft Special Report, which was read, as follows:-

" DUMP-CARS—SPECIAL REPORT.

"The Select Committee of the Legislative Assembly appointed on the 12th August last, 'with

'power to send for persons and papers to inquire into and report upon the purchase of Railway 'Rolling Stock, Material, &c., for the Government Railways and Tramway Works of the Colony,' have agreed to the following Special Report:—
Your Committee deem it their duty to report to your Honorable House that the evidence already taken regarding the dump-cars, for which an order was given to Messrs. Carson Woods & Company for 200 at £190 each, discloses the fact that the cars now being supplied are unsafe in design, workmanship, and materials used, and, in the opinion of your Committee, should not be accepted or used on the Railways of the Colony."

Chairman to report to the House.

Committee deliberated.

Ordered,—That Charles A. Goodchap, Esq., and Mr. George Downe be summoned to give evidence next meeting, and that the Hon. F. A. Wright, M.P., be summoned under the Parliamentary Evidence Act of 1884 to give evidence next meeting.

[Adjourned to To-morrow, at *Eleven* o'clock.]

THURSDAY, 18 SEPTEMBER, 1884.

MEMBERS PRESENT:-

Mr. Sydney Smith in the Chair.

Mr. Poole,

Mr. Chapman,

Mr. Teece.

The Chairman read a letter from Mr. Wright, stating that he would attend the next meeting, and informed the Committee that in consequence of the receipt of that letter he had instructed the Clerk not to serve the summons as directed.

Charles A. Goodchap, Esq., called in and further examined.

Witness handed in papers in reference to coaling engines for the Department, also papers in reference to lighter rolling stock.

Witness withdrew.

Committee deliberated.

Ordered,—That the Hon. F. A. Wright, M.P., be summoned to give evidence next meeting.

[Adjourned to Tuesday next, at *Eleven* o'clock.]

TUESDAY, 23 SEPTEMBER, 1884.

MEMBERS PRESENT:-

Mr. Sydney Smith in the Chair.

Mr. Poole, Mr. Wright,

Mr. Teece, Mr. Sutherland,

Mr. Garrard.

Clerk submitted a letter from Mr. Wright forwarding names of witnesses for examination. The Honorable Francis Augustus Wright, M.P. (Secretary for Public Works), a member of the Committee, sworn and examined in his place.

George Cowdery, Esq. (Engineer for Existing Lines, Railway Department), called in, sworn, and examined

Witness handed in paragraphs from an American paper and a certificate from the National Exhibition of Railway Appliances in reference to the automatic couplers, which were ordered to be (See Appendices D 1 and D 2.)

Witness withdrew.

Chairman laid before the Committee a letter from Messrs. Stephen, Laurence, and Jaques, Solicitors for Messrs. Carson Woods and Co., stating their intention to apply to Parliament for leave to appear by Counsel.

Committee adjourned to 2 o'clock this day.

Committee resumed.

George Cowdery, Esq., called in and further examined.

Witness withdrew.

Mr. John Goff (Draftsman, Locomotive Engineer's Office) called in, sworn, and examined.

Witness withdrew.

Owen Blacket, Esq., called in, sworn, and examined.

Witness withdrew.

Committee deliberated.

Ordered that Mr. George Downe be summoned to give evidence next meeting.

[Adjourned to To-morrow, at *Eleven* o'clock.]

WEDNESDAY, 21 SEPTEMBER, 1881.

MEMBERS PRESENT :-

Mr. Sydney Smith in the Chair.

Mr. Poole, Mr. Suttor Mr. Chapman, Mr. Sutherland, Mr. Garrard.

Mr. Wright, Entry from Votes and Proceedings, referring Petition of Carson Woods, Esq., asking for leave to appear by Counsel or Attorney before the Committee, read by the Clerk. Petition of Carson Woods, Esq., before the Committee.

Resolved,—That leave be granted to Mr. Woods to appear by Attorney or Counsel before the Committee during the examination of witnesses relating to the purchase of the Dump-cars.

Mr. Woods called in and informed.

Present:—Arthur Bird, Esq. (Counsel for Mr. Carson Woods).

Mr. George Downe (Superintendent, Tramway Rolling Stock) called in, sworn, and examined. Witness withdrew.

Henry Gilbert Carson Woods, Esq, called in, sworn, and examined.

Witness handed in certain documents, which were ordered to be appended. (See Appendices E 1 to E 4.)

Room cleared.

Committee deliberated.

Ordered,-That Carson Woods, Esq, and Mr. George Batchelder be summoned to give evidence next meeting.

[Adjourned to To-morrow, at Eleven o'clock.]

THURSDAY, 25 SEPTEMBER, 1884.

Members Present:-

Mr. Sydney Smith in the Chair.

Mr. Chapman, Mr. Wright,

Mr. Sutherland,

Mr. Suttor,

Mr. Teece.

Present:—Arthur Bird, Esq. (Counsel for Mr. Carson Woods). Henry Gilbert Carson Woods called in and further examined.

Witness withdrew.

Mr. George Batchelder (Car-builder) called in, sworn, and examined.

Room cleared.

Committee deliberated.

Ordered,-That Mr. George Batchelder and Mr. William Cross be summoned to give evidence next mecting.

[Adjourned to To-morrow, at Two o'clock.]

FRIDAY, 26 SEPTEMBER, 1881.

MEMBERS PRESENT:

Mr. Sydney Smith in the Chair.

Mr. Sutherland, Mr. Wright,

Mr. Chapman.

Present:—Arthur Bird, Esq. (Counsel for Mr. Carson Woods). Mr. George Batchelder called in and further examined.

Witness produced links and bolts used in building the Dump-cars, and which had been tested with a 250lbs. hammer.

Witness withdrew.

Mr. Bird stated that if he wished to call further evidence on behalf of his client he would supply the names of the witnesses to the Committee.

Room cleared.

Committee deliberated.

Ordered,—That William Cross, Esq., be summoned to give evidence next meeting.

[Adjourned to Tuesday next, at Eleven o'clock.]

TUESDAY, 30 SEPTEMBER, 1884.

MEMBERS PRESENT:-

Mr. Sydney Smith in the Chair.

Mr. Poole,

Mr. Chapman,

Mr. Teece,

Mr. Wright,

Mr. Sutherland

Mr. Suttor.

William Cross, Esq. (Iron Merchant), called in, sworn, and examined.

Witness withdrew

Mr. Joseph Railt Davies (Car-builder) called in, sworn, and examined.

Witness withdrew. Mr. William Henry Burges (Truck-builder) called in, sworn, and examined.

Witness withdrew

The Chairman laid before the Committee a letter from Mr. Carson Woods inviting them to visit his works and inspect the Dump-cars. Committee deliberated

Ordered,—That Mr. Charles Paul, Mr. John Hough, Mr. James Fletcher, Mr. Alexander Clark, and Mr. S. Cook be summoned to give evidence next meeting.

[Adjourned to To-morrow, at Eleven o'clock.]

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WEDNESDAY, 1 OCTOBER, 1884.

MEMBERS PRESENT:

Mr. Sydney Smith in the Chair.

Mr. Poole,

Mr. Chapman,

Mr. Sutherland.

Mr. Wright.

Mr. John Hough (Carriage-builder) called in, sworn, and examined.

Witness withdrew.

Mr. James Fletcher (Carriage-builder) called in, sworn, and examined.

Witness withdrew.

Mr. Charles Paul (Station-master, Darling Harbour) called in, sworn, and examined.

Witness withdrew. Committee deliberated.

[Adjourned to To-morrow, at Eleven o'clock.]

THURSDAY, 2 OCTOBER, 1884.

MEMBERS PRESENT: Mr. Sydney Smith in the Chair.

Mr. Poole,

Mr. Sutherland,

Mr. Chapman,

Mr. George Campbell,

Mr. Wright.

Mr. Alexander Clark (Car-builder) called in, sworn, and examined.

Witness withdrew.

Mr. John Nelson (Carriage-builder) called in, sworn, and examined.

Witness withdrew.

Mr. Sydney Cook (Coach-builder) called in, sworn, and examined.

Witness withdrew.

Committee adjourned to Two o'clock this day.

Committee resumed.

Mr. Jonathan A. Murray (Car-builder) called in, sworn, and examined.

Witness withdrew.

Mr. James Graham (Engine-fitter) called in, sworn, and examined.

Witness withdrew.

Mr. John William Brierley called in, sworn, and examined.

Witness withdrew.

Henry Gilbert Carson Woods, Esq., called in and further examined.

Witness withdrew.

Clerk informed the Committee that Mr. Goodchap, in returning his evidence, had forwarded certain documents which he requested to have printed with his evidence, which were ordered to be appended. (See Appendix F.)

Letter from Mr. Scott (with enclosures) and papers (handed in) by Mr. Goodchap on 18th September,

in reference to Lighter Rolling Stock, ordered to be appended. (See Appendices G & H.)

Committee deliberated.

Ordered,—That Mr. Thomas Midelton, Mr. Kendall, Mr. Thomas Jubb, and Mr. George Downe be summoned to give evidence next meeting.

[Adjourned to Tuesday next, at Eleven o'clock.]

TUESDAY, 7 OCTOBER, 1884.

MEMBERS PRESENT:-

Mr. Sydney Smith in the Chair.

Mr. Poole,

Mr. Sutherland,

Mr. Teece,

Mr. Suttor.

Mr. Thomas Jubb (Waggon-builder) called in, sworn, and examined.

Witness withdrew.

Mr. Thomas Midelton called in and further examined.

Witness handed in certain documents, which were ordered to be appended. (See Appendices J1 to J4.) Witness also handed in tracings of the Iron Platform Bogic Waggon, and of the Coal Waggon, which (See Separate Appendices 3 and 4.) were ordered to be appended.

Witness withdrew.

Augustus Morris, Esq., called in, sworn, and examined.

Witness withdrew.

Henry Gilbert Carson Woods, Esq., called in and further examined. Witness produced the Patent held by him for the Dump-cars.

Witness withdrew.

Mr. George Downe called in and further examined.

Witness produced drawings of the Downe's Combined Motor and Engine.

Witness withdrew.

Mr. Daniel William Campbell (Manager for Mr. Carson Woods) called in, sworn, and examined.

Witness withdrew.

Chairman laid before the Committee a letter from Mr. Carson Woods, pointing out the advantages of the Dump-cars, and offering to build the D-trucks 20 per cent. cheaper than the present contract price.

Committee deliberated Ordered,-That Mr. H. B. Howe, Mr. William Allen, Mr. Frederick Day, and Mr. George Hendy be summoned to give evidence next meeting.

[Adjourned to To-morrow, at *Eleven* o'clock.]

WEDNESDAY, 8 OCTOBER, 1884.

MEMBERS PRESENT:

Mr. Sydney Smith in the Chair.

Mr. Poole,

Mr. Chapman,

Mr. Teece,

Mr. Sutherland,

Mr. Wright.

Chairman laid before the Committee papers relating to Draw-bars of Waggons and Cars.

James Powell, Esq. (Collector of Customs), called in, sworn, and examined.

Witness produced the papers of the ship "Earl Granville," from Boston, showing Custom-house free entry for 9,555 packages for frames and buffers for car trucks, and two cases of car-couplers, entered by Messrs. Carson Woods & Co., by their agent, Mr. L. F. Ebsworth, and also an entry for thirty-two kegs of nails on which duty was paid.

Witness withdrew.

Mr. Henry Bryant Howe (General Foreman, Tramway Locomotive Department) called in, sworn, and examined.

Witness withdrew.

Committee deliberated,

Ordered,—That Mr. Frederick Davey, Mr. George Hendy, and Mr. J. M. Tiley be summoned to give evidence next meeting.

[Adjourned to To-morrow, at *Eleven* o'clock.]

THURSDAY, 9 OCTOBER, 1884.

MEMBERS PRESENT:-

Mr. Sydney Smith in the Chair.

Mr. Chapman, Mr. Garrard.

Mr. Teece,

Mr. Frederick Davey (Foreman, Tramways) called in, sworn, and examined.

Witness withdrew.

Mr. John Moxey Tiley (Collecting Officer, Darling Harbour Wharf) called in, sworn, and examined.

Witness withdrew.

Mr. George Hendy (General Foreman, Pitt-street Yard) called in, sworn, and examined.

Witness withdrew.

Committee adjourned to half-past Two o'clock this day.

There being no quorum present at the hour appointed for the re-assembling of the Committee the meeting lapsed.

FRIDAY, 10 OCTOBER, 1884.

MEMBERS PRESENT:

Mr. Sydney Smith in the Chair.

Mr. Poole,

Mr. Teece,

Mr. Sutherland.

Mr. William Allen called ip, sworn, and examined.

Witness withdrew.

Mr. Evan Davies called in, sworn, and examined.

Witness withdrew.

Chairman laid before the Committee a letter from Mr. Carson Woods requesting the Committee to

examine Mr. D. M'Leod, lately Resident Engineer Constructing Railways, New Zealand.

Committee deliberated and instructed the Clerk to inform Mr. Wood that the Committee had closed the inquiry in reference to the dump-cars, and to refer Mr. Woods to his evidence of 2 October instant (page 101).

Committee deliberated.

Ordered,—That J. C. Dibbs, Esq., Mr. J. H. Garforth, Mr. A. B. Brown, and Mr. J. W. Cayzer be summoned to give evidence next meeting.

[Adjourned to Tuesday next, at Eleven o'clock.]

TUESDAY, 14 OCTOBER, 1884.

MEMBERS PRESENT:-

Mr. Sydney Smith in the Chair.

Mr. Poole,

Mr. Chapman,

Mr. Sutherland, Mr. Wright,

Mr. Suttor, Mr. Garrard.

Chairman laid before the Committee papers in reference to Perry Car Couplers. John Campbell Dibbs, Esq. (Merchant), called in, sworn, and examined.

Witness withdrew.

Mr. James Henry Garforth (Engineer, Tramways) called in, sworn, and examined.

Model of a Compound Engine before the Committee.

Witness withdrew.

Mr. Albert Blair Brown (Running Foreman, Tramways) called in, sworn, and examined.

 \mathbf{W} itness

Witness withdrew.

Mr. James W. Cayzer (Chief Draftsman, Tranwoys), called in, sworn, and examined.

Witness withdrew.

Chairman laid before the Committee a letter from Mr. Carson Woods, requesting that his letters should be incorporated in the minutes of the Committee, and enclosing a Report from D. W. M'Leod on the Dump-cars, which letter was postponed for consideration.

Committee adjourned to half-past Two o'clock this day.

Committee resumed.

Mr. George Downe called in and further examined.

Witness to supply comparative statement of passenger accommodation capacity and dead weight in the various passenger rolling stock on the New South Wales Government Tramways.

Witness withdrew

Mr. Henry Bryant Howe called in and further examined.

Witness withdrew.

Mr. John Halliday (Traffic Foreman, Bridge-street Yard) called in, sworn, and examined.

Witness withdrew.

Mr. George Smith (Tramway Traffic Foreman, Railway Station) called in, sworn, and examined.

Witness withdrew.

Mr. Thomas Midelton called in and further examined.

Witness withdrew.

Committee deliberated.

Ordered,-That Mr. Thomas Midelton and Mr. William Scott be summoned to give further evidence next meeting.

[Adjourned to To-morrow, at Eleven o'clock.]

WEDNESDAY, 15 OCTOBER, 1884.

MEMBERS PRESENT:-

Mr. Sydney Smith in the Chair.

Mr. Poole,

Mr. Chapman, Mr. Sutherland.

Mr. Teece,

Mr. Suttor.

Papers (with plans) in reference to Coal Engines handed in by Mr. Goodchap on 18th September, 1884, ordered to be printed. (See Appendix K and Separate Appendices 5 and 6.)

Mr. Thomas Midelton called in and further examined.

Witness withdrew.

Mr. William Scott called in and further examined.

Witness withdrew.

Mr. Henry Walker (*Driver*, *Redfern Tram*) called in, sworn, and examined. Witness withdrew.

Mr. Thomas Rawlings Osborne (Motor Driver) called in, sworn, and examined.

Witness withdrew.

Mr. Daniel Manning called in, sworn, and examined.

Witness withdrew.

Chairman laid before the Committee a letter from Mr. Downe, requesting to be allowed to make a statement, and to be supplied with a copy of the evidence.

Postponed for further consideration.

Committee deliberated.

[Adjourned to Thursday next, at Three o'clock.]

THURSDAY, 16 OCTOBER, 1884.

MEMBERS PRESENT :-

Mr. Sydney Smith,

Mr. Wright.

In the absence of a quorum the meeting called for this day lapsed.

FRIDAY, 17 OCTOBER, 1884.

The House having adjourned over to Tuesday next the meeting called for this day lapsed.

TUESDAY, 21 OCTOBER, 1884.

MEMBERS PRESENT :-

Mr. Sydney Smith in the Chair.

Mr. Poole,

Mr. Garrard,

Mr. Teece,

Mr. Sutherland,

Mr. Suttor.

Chairman laid before the Committee a Return showing particulars of indents for Railway Rolling Stock, Materials, &c.; also a letter from Mr. Goodchap in reference to accidents traceable to the use of chilled wheels on the American Railways; also the papers relating to Downe's Combined Motor and Car, and the order for same.

Mr. George Downe called in and further examined.

Witness

Witness produced Locomotive Engine Running Shed Repairs Book, Drivers' Reports Book, and Fuel Tickets Book, in connection with the tramways; and handed in a comparative statement of passenger accommodation, capacity, and dead weight in the various passenger Rolling Stock on the New South Wales Government Tramways, which was ordered to be appended. (See Appendix L.)

Witness requested to be allowed to make a statement.

Chairman informed the witness that he had laid his letter before the Committee, and that they would now consider it.

Witness withdrew. Committee deliberated.

Witness called in and informed that they could not supply him with the evidence as requested, nor could they hear a general statement, but that if he wished to tender any further evidence in reference to the combined motor and cars they would hear it.

Mr. Frederick Davey called in and further examined.

Witness withdrew. Committee deliberated.

[Adjourned to To-morrow, at *Eleven* o'clock.]

WEDNESDAY, 22 OCTOBER, 1884.

Members Present:—

Mr. Sydney Smith in the Chair.

Mr. Chapman,

Mr. Poole,

Mr. Teece, Mr. Wright,

Mr. Sutherland, Mr. Suttor.

Mr. Frederick Davey called in and further examined.

 ${f Witness}$ withdrew.

Chairman laid before the Committee correspondence between Mr. Augustus Morris and the Commissioner for Railways in reference to Downe's Combined Motor and Car.

Committee deliberated as to the heads of the Draft Report to be drawn up by the Chairman and submitted next meeting.

[Adjourned to To-morrow, at half-past Two o'clock.]

THURSDAY, 23 OCTOBER, 1884.

MEMBERS PRESENT:-

Mr. Sydney Smith in the Chair.

Mr. Garrard,

Committee deliberated.

[Adjourned to To-morrow, at Eleven o'clock.]

Mr. Sutherland.

FRIDAY, 24 OCTOBER, 1884.

MEMBERS PRESENT:

Mr. Sydney Smith,

Mr. Sutherland.

- In the absence of a quorum the meeting called for this day lapsed.

TUESDAY, 28 OCTOBER, 1884.

MEMBERS PRESENT:

Mr. Sydney Smith in the Chair.

Mr. Poole.

Mr. Sutherland, Mr. Teece,

Mr. Chapman,

Mr. Garrard.

Entry from Votes and Proceedings, granting leave for the Committee to sit on Friday last, read by the Clerk.

Chairman read rough Draft of a Report which he proposed to have printed and distributed to the Members of the Committee before the meeting for its final adoption.

Committee deliberated.

[Adjourned to To-morrow, at Eleven o'clock.]

WEDNESDAY, 29 OCTOBER, 1884.

MEMBERS PRESENT:

Mr. Sydney Smith in the Chair.

Mr. Poole,

Mr. Sutherland,

Mr. Chapman,

Mr. Teece,

Mr. Wright.

Committee deliberated on letters written to the Committee by Mr. Carson Woods. Chairman to inform Mr. Woods that only the substance of his letters would appear in the minutes and that the Committee had no power to make visits of inspection. The

The following documents were ordered to be appended to the evidence, viz.: 1. The Return to Order "Dump-cars—ordered from Carson Woods & Co.," referred to the Select

Committee on 15 August, 1884. (See Appendix M.)

2. Papers relating to Allison's Manufacturing Company's cars for Railway freight, handed in by Mr. Goodchap, 18 September, 1884. (See Appendix N.)

3. Letter from the Hon. F. A. Wright to the Clerk of the Committee, submitting names or

witnesses for examination. (See Appendix O.)
Letter from Mr. Carson Woods to the Hon. F. A. Wright, pointing out the advantages of the dump-cars and offering to build the D truck 20% cheaper than the present contract price,—laid before the Committee, 7 October, 1884. (See Appendix P.)
Memorandum in reference to draw-bars of goods waggons, laid before the Committee on 8

October, 1884. (See Appendix Q.)

6. Papers showing prices of coal and freight cars made by the Allison Manufacturing Company, of Philadelphia, U.S.A., forwarded to the Committee by Mr. Augustus Morris. Appendix \hat{R} .)

7. Letter, with Enclosures, from the Commissioner for Railways in reference to accidents on the American railways traceable to chilled wheels, laid before the Committee, 21 October, 1884. (See Appendix S.)

(See Appendix S.)
8. Papers relating to Downe's combined motor and car, laid before the Committee on 21 October, 1884. (See Appendix T.)
9. Papers relating to proposed order for 30 Downe's combined motor and car, laid before the Committee on 21 October, 1884. (See Appendix U.)
10. Papers in reference to offer of the Baldwin Locomotive Company, made through Mr. Augustus Morris, to supply 30 Downe's combined motors and cars for £1,075 each, laid before the Committee on 22 October, 1884. (See Appendix V.)
hairman submitted Draft Report, which was read.

Chairman submitted Draft Report, which was read. Motion made (Mr. Poole) and Question,—That the Draft Report as read be now adopted,—put. Committee divided.

TIST OF WITNESSES

Ayes, 3. Mr. Sutherland, Mr. Teece, Mr. Poole.

Mr. Wright.

So it was resolved in the affirmative. Chairman to report to the House.

LIST OF WITNESSES.		
Dump-cars.	PAGE.	
Detailable Mr. Cooper	70, 75	
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2.

Tracing of American Dump-car, showing alterations to be made.

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3.

Tracing of Iron Platform Bogie Waggon,

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'Tracing showing system of coaling engines.

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LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

MINUTES $0 \, \mathrm{F}$ EVIDENCE

TAKEN BEFORE

THE SELECT COMMITTEE

ON THE

PURCHASE OF RAILWAY ROLLING STOCK.

TUESDAY, 26 AUGUST, 1884.

Present:—

Mr. CHAPMAN, Mr. GARRARD, Mr. POOLE,

Mr. S. SMITH. Mr. SUTHERLAND, MR. SUTTOR,

Mr. TEECE.

SYDNEY SMITH, Esq., IN THE CHAIR.

William Vero Read, Esq., called in and examined :-

Chairman.] You are Traffic Manager of the Great Southern and Western Railways? Yes.
 Do you remember receiving a minute from Mr. Goodchap on 2nd April, 1883, in reference to dump-cars? I received one about that time.

W. V. Read,

26 Aug., 1884.

3. Do you remember writing a minute on the 5th April, 1883, that "the principal traffic for which the kind of trucks would be available is coal, but at present we have neither platforms nor staiths on which to shoot the coal; now it is carted direct from the trucks. Should it be approved to build staiths at stations as is done in England (and I would strongly recommend it), then the adoption of the principle would be of great service in the saving of time and labour, and in enabling of greater mileage being run by waggons. There are other smaller kinds of traffic for which the principle could be made use of if there were places on which to shoot it. The principle would appear to be well adapted for ballast waggons, and also for 'loco.' coal trucks; but of these the Engineer for Existing Lines and the Locomotive Engineer would be able to give an opinion'? Yes, that is a copy of my minute, I believe.

4. Have you seen Mr. Midelton's report in reference to these cars? I saw it this morning for the first

4. Have you seen Mr. Midelton's report in reference to these cars? I saw it this morning for the first time I think; I may have seen it before, but I do not remember it.

5. Was Mr. Midelton's minute referred to you after your minute of the 5th April? I think it must have come to me with other papers, but I do not think it was referred to me to report upon.

6. Were you not asked to report upon Mr. Midelton's objections? I think not. I believe I saw his minute, but I did not report upon it.

7. What is your opinion about the objections raised by Mr. Midelton? (Mr. Midelton's minute, page 2 of the printed papers, read.) I do not think Mr. Midelton's objections met what I think would be the I do not think Mr. Midelton's objections met what I think would be the benefit of these dump-cars.

8. In what particular? Mr. Midelton only states what is required to make them of use, which I have

9. Do you remember any tests that were made with regard to these dump-cars? Yes, I remember three. 10. What were they? The first was with ashes, the next with gravel, and the third with billet-wood. 11. Were they a success? The ashes did not shift on being canted—the gravel did. I think the ashes were damp

12. Did all the gravel go out of the cars? No.
13. Did it take any time to remove the balance? I do not think they did remove it. About two thirds of the gravel went out when the truck was canted over.

1043-A

2

26 Aug, 1884.

W.V. Read, 14. Did you consider that a success? I consider anything that will throw two-thirds of the load out in the manner that the car did would be a success for particular kinds of traffic or material. the manner that the car did would be a success for particular kinds of traffic or material.

15. Did they try this truck with billet-wood? Yes; there was a trial with billet-wood.

16. Do you know with what result? Yes; it was not very successful; it was long billet-wood, and not likely to be a success without some one assisting the wood to fall—shifting it.

17. Is it true that on one occasion they had to use one of the jacks to tilt the car over? I do not know; I did not see it.

18. Was the car disabled in any way after the test? Not to my knowledge.

19. In your minute of 23 April you say:—"I have already reported on these cars. * * * *

I could use a few of this style of car at once for traffic purposes, and would like to be supplied." Will you inform the Committee what class of traffic you purposed using these cars for? Billet-wood. 20. Is it not a fact that they had proved a failure with regard to billet-wood? Certainly not.

unsuccessful without assistance to shift the load, but it was a load of very long billet-wood.

21. Was there any test, after that test that was unsuccessful, to guide you in forming an opinion that this car would be suitable for the billet-wood traffic? No. My own sense of what would assist the unloading of the truck told me that a truck canted in this way would permit of unloading much easier than an

ordinary truck. 22. You have admitted that the test made was not successful with regard to billet-wood? Yes; but it was not ordinary billet-wood; it was very long billet-wood, and a very little assistance to this wood would

have caused it to fall out.

23. Is it not a fact that it took a number of men to unload the billet-wood after the test was made—to unload the balance? I do not think it was all unloaded—not when I left.

24. I mean after you left? It may have.

25. Mr. Midelton, in his report on page 11 of the printed papers, when asked whether this car could be made available, states:—"I have twice tried to use dump-car for coaling locomotive engines, but it will not clear Darling Harbour Wharf platform, so I am told. It has no side-buffers, and the centre draw-bar and buffers do not match our stock; considerable alteration will have to be made if we are to use it regularly in traffic, and enough scheming required to construct a new car." Was your attention directed to that report of Mr. Midelton's? No.

26. Was Mr. Midelton the officer at that time supposed to give reports upon any alteration of the rolling stock?. He was Acting Locomotive Engineer at that time, and as such he would report to the Commis-

sioner as to alterations in rolling stock.

27. Before the order for 200 cars was given to Carson Woods & Co., were you asked to report whether it would be advisable to give the order? No.

28. Is it usual to give such large orders for a new kind of rolling stock before the article is properly tested? I cannot say; I have never been asked to report upon such an order.

29. Is it not usual for all the officers to be asked to report, and to a great extent are not the heads of the Department guided by the report of the officers as to whether it will be advisable to order a large number of cars? I cannot say.

30. Have you heard of any other case? Not that I know of.

31. None of the officers have been called upon to report on any new idea with regard to rolling stock? I can only say that I have not.

32. You were not asked to report before this large order for 200 cars was sent? No. All the reports

I have made are in these papers.

33. In a minute later on, number 33, you state:—"I beg to refer the Commissioner to his minute paper 33. In a minute later on, number 33, you state:—"I beg to refer the Commissioner to his minute paper 83-21,488, and to inform him that the lately imported dump car referred to therein cannot be made use of until the draw-gear is altered and side-buffers provided. In a conversation I had with Mr. Augustus Morris recently, he informed me that these waggons were not a success in America." At the time you wrote that minute were you doubtful whether they would be a success here, after your conversation with Mr. Augustus Morris? That was the first doubt I had on the matter. I had no doubt as to the suitability of these waggons until Mr. Morris told me that he did not think they would be as great a success as we expected; and on hearing that I wished to have the car which we had in our possession put into work, so that we could see whether any improvements could be made in it. That was the reason of my minute of the 14th January, number 38.

34. Further on you say, "It is, however, very important that this car should be brought into use at once in order that any defects may be noted and corrected in those now being imported." Of course it is evident you had a doubt, and thought it wise, before ordering such a large number, that this one should be properly tried, so that you should see in what way it need be altered? Yes, from what Mr. Morris said.

said

35. That shows clearly that the success, so far, was not so satisfactory as it should have been; was anything done in regard to your minute of 14/1/84? No, nothing further was done that I am aware of.

36. No action was taken on your suggestion that the car should be tried again, to see what alterations should be made in it? It has never been brought into use.

37. Where is the car now? I think it is on a locomotive siding.

38. Has anything been done with it since the last test with billet-wood? Not that I know of. 39. Could it be used at all on our lines? Yes.

40. Is it true it is too wide? I believe it is too wide.
41. I would like to call your attention to page 11. You know Mr. Bourn. Mr. Bourn states in his report:—"I beg to report that previous to the dump-car being allowed to be used by the Traffic report:—"I beg to report that previous to the dump-car being allowed to be used by the Traffic Department it is necessary that it should be taken to pieces and reconstructed, as at present it is too wide and will not pass the platforms; it also requires to be fitted with buffers and draw-gear to suit the present rolling stock now in use." You were not aware that it is too wide? No, I was not at first.

42. You state that the use you wanted to make of these cars was for billet-wood? Chiefly for billet-wood; for other kinds of traffic also; but chiefly for billet-wood.

43. Do you think you could make use of 200 of these cars for billet-wood? Hardly for billet-wood alone.

44. What do they carry? 18 to 20 tons. I think about 20 tons of 2,000 lbs. a ton; about 19 tons.

45. Are your consignments large in regard to billet-wood; is it likely that one person would order 20 tons of billet-wood? Some people would.

46.

46. How many would? That is a difficult question to answer; I suppose perhaps half of the people who W. V. Read, get billet-wood. Esq. get billet-wood.

47. Is it not a fact that a great number of purchasers at Darling Harbour find a difficulty in disposing of 26Aug.; 1884.

4 or 5 or 6 tons? I do not know that they do; not the large dealers.

48. It has not been proved yet whether these cars would be a success with regard to billet-wood? think they would be a success in the unloading of any rough traffic which can be thrown out at once on to the ground.

49. Could you unload billet-wood anywhere on the line, on any portion on the side of the line—say at Darling Harbour? We have had to do so.

50. With these dump-cars? Part of it would have to be hand-thrown out.

51. How long do you think it would take to throw out the balance? I think the balance would not take any longer to throw out than if the half of it had been unloaded in the usual way before-hand. 52. How do you propose to weigh the wood that would be loaded in these dump-cars? On the weigh-

bridge.
53. With the small weighbridges? Yes. 54. Do you think you could weigh properly with those long trucks? Yes. 55. In what way? By weighing one end at a time.

56. Have any complaints been made by the general public in reference to the weights? I have received none

57. What length are the present small weighbridges? 13 feet.

- 58. And you think you could weigh these cars on these weighbridges? Yes; we do weigh long trucks on them now.
- 59. One end at a time? Yes; if the line is perfectly level it weighs as correctly as if it were a long

weighbridge.
60. Was it understood that these cars were to be made in the Colony? I do not know anything about the contract or the agreement made for the building of them. I had no knowledge of it.

61. I see by a minute of yours, on page 11, which I have read, that you were under the impression they were to be imported? I do not know how I came by the knowledge that they were being imported; it may have been hearsay, but as far as I can remember it was not through any official communication.
62. Do you think these cars would be suitable to run over the mountain line? If they are suitable at all

for any of the lines they ought to be suitable for the mountain line. 63. Would you have any hesitation in sending a train of them over the mountains? It would be for the locomotive engineer to say whether they were safe; if he said they were safe I would certainly send them

64. He is the proper person to say whether they are safe? Yes, it is his duty.
65. Mr. Poole.] In giving your opinion as to the suitability of these cars for particular kinds of traffic, I take it you presume, first of all, that the car is the proper width? Of course.
66. And secondly, that the couplings and buffers could be modified to suit our present system? Of

67. Assuming that the railway on which the car is to deliver its load is raised a couple or 3 feet above the cart-way, would the car then deliver its load, on being tipped, having this additional fall of a couple or 3 feet? In many cases it would deliver the whole of its load, but in some cases, with particular kinds of material which would bind, the remainder would have to be assisted.

68. I will take two or three kinds of material—say coal, gravel, and fire-wood. Under the circumstances I have pointed out, would this car, assuming it to be of the proper width and fitted with buffers and couplings on our own system, have an advantage over any others that we have now in dealing with these three kinds of traffic, coal, gravel, and fire-wood? Yes, I should think it would decidedly.

69. What is the charge for unloading traffic of this kind? We charge a shilling a ton.

70. In your opinion does that cover the cost to the Department, on the average? Yes.

71. Assuming that you had a raised railway, as I have suggested, what would be the saving to the Department, provided you charged a shilling per ton for discharging, if you had this kind of dump-cars; that is, upon the three articles of traffic I have enumerated—coal, firewood, and gravel. What would be the saving to the Department in the year as far as you can judge? I must tell you that the consignees are supposed to unload all this kind of traffic.

72. The Department does not unload? No, excepting when pressed for trucks, and then we unload in

order to get them for use.

73. So that from that stand-point there would be no saving to the Department? No, except by getting

- quickly the use of the trucks.

 74. Perhaps you will be able to give the Committee some idea, taking the transport of 1,000 tons of dead weight by the ordinary trucks carrying 5 or 6 tons, what would be the saving to your Department in all, owing to the difference in the dead weight of the two descriptions of trucks;—as near as you can state would there be any? Yes, there would be a saving. I suppose there would be a saving of about 25 per cent. in the dead weight of the cars. The tare of these dump-cars is about 25 per cent. less per carrying weight than that of the ordinary
- 75. Mr. Garrard.] Did you make any report to the head of your Department after the trial of this car? I did not; the Minister for Works and the Commissioner were there when it was tested with billet-wood.

76. You were not called upon? No.

77. Who was the Minister for Works then? Mr. Wright.

78. Was the trial of these two different classes of goods, gravel and firewood, at the same time, or two separate trials at different times? The gravel was a special trial. The Minister or the Commissioner were not present when the gravel or the ashes were tried; I think it was only at the trial of the billetwood that the Minister was present.

79. In your opinion the cause of the want of complete success in the firewood trial was owing to the extreme length of the wood? Yes; it bound a little, and there was not sufficient fall for it to get

80. What was the difference of level between the railway and the roadway where the trial took place? 3 inches only.

W. V. Read, 81. Mr. Chapman.] Under whose superintendence did the trials take place? Under the locomotive engineer.

82. What is his name? Mr. Midelton was acting at the time.

26 Aug., 1884. 83. Mr. Midelton, then, will be able to give us the information we require as to these trials. You seem to be doubtful about it? I think it was under the locomotive engineer. I had nothing to do with the

84. You spoke of weighing these long trucks one end at a time—weighing one end and then the other? We have to weigh them that way, and I see no reason why the weight should not be correct to a pound if the line is level.

85. Have you any idea when the dump-cars were ordered in the first instance. You admitted you were consulted about them? I have already said that all my reports on the dump-cars are in the printed papers, and my opinions were formed after reading the reports of different railway men in America which were highly favourable; and I stated that it would be advisable to try a few of them. That was all I had to say

86. And the few were not tried before a large number were ordered? Only one was tried.

87. Was it approved of generally? In what way do you mean? 88. You had a sample one, and it was tried and approved of so much that two hundred others were

ordered? I know nothing about the ordering of the others.

89. Were they ordered before the sample one was fairly tested and approved of? No other test was made than those I have spoken of. This sample one had been in the Colony some months when Mr. Morris told me they were not such a success in America as we had supposed; and then I asked the Commissioner to have the one we had in stock put into work, in order that we might see if there were any defects in it.

90. Was that done? It has not yet been done.
91. And the others were ordered? The others had been ordered, and were then on the way. Some of them had arrived when Mr. Morris spoke to me. 92. Had they all arrived? I do not know.

93. Where are they? I believe they are at Darling Harbour.
94. What is being done to them? I believe they are being fitted.

95. You do not know that of your own knowledge? No, I have nothing to do with them. 96. Who would be able to tell us about that? Mr. Scott.

97. Mr. Suttor.] Are we to understand that this sample car has never been fitted? It has not been fitted yet.

98. And beyond making two or three tests the Department had very little knowledge how to work it?

They had also the reports of railway men in America.

99. You said that, comparing this dump-car with the cars now in use, there is a saving of 25 per cent. in

the weight of the car? Yes, this car carries a very heavy load in proportion to its weight.

100. Would it last as long as the ordinary cars? I am not in a position to say.

101. The saving of weight might be at the expense of the length of service of the car? It might.

102. Under the present system the trucks discharge direct into the dray? Yes.

103. The dump-car would discharge on to the ground, and the load would have to be lifted into the dray? Yes.

104. That would involve great labour to the consignee? Yes, unless the discharging place were made a little higher than the roadway.

105. That would involve considerable alteration in all the platforms? Yes.

106. You would have to raise the railway 4 or 5 feet or lower the roadway? Yes; that is the way it is done in England.

107. Do you think the advantage to be derived from the use of this dump-car would justify the alteration?

Only in places where there was heavy traffic, 108. Could these alterations be made without interference with existing arrangements? Yes, in many

places.

109. In what way would you make the alteration—by raising the siding? By raising the siding or taking advantage of the land being lower at the side of the line.

110. Mr. Sutherland.] Is it not on your recommendation that all rolling stock required for the traffic is ordered? Not entirely.

111. On whose recommendation is the rolling stock used by the Traffic Department ordered? I furnish estimates of the probable requirements of the year to the Commissioner, and they are either acted on wholly by him, or augmented, or decreased.

112. But the only recommendation the Commissioner gets is yours, upon ordering this class of rolling

stock? I fancy the locomotive engineer also reports.

113. Do I understand that the locomotive engineer reports upon the number of the various classes of vehicles required for your traffic as well as you? I believe my reports are submitted to him. I have only reported once in my present position in respect of a large contract, but there have been other reports when vehicles were specially required. The present contract is for five years. In my report I state the probable number of the different kinds of vehicles I shall require.

114. And they are ordered for a five years contract? Yes.

115. Was the five years contract ordered before these dump-cars were ordered? I believe it was, but I

do not know the date on which these dump-cars were ordered.

116. Had you made any allowances then for the use of these dump-cars to prevent you requiring so many of the other classes of cars or trucks; 200 of these dump-cars is a very large number. What I wish to know is, have you made any calculation of the number of the other classes of trucks that would not be required if these were ordered and used? I do not think any alteration has been made in my estimate.

117. Then from what I understand you to say the order has been given for the five years' contract upon your estimate? I believe it has.

118. And no deduction has been made from that order on account of these 200 new class cars; being

ordered? I am not aware that any alteration has been made.

119. You have stated that you have already recommended that at many suburban stations the sidings should

should be raised to suit this class of car;—did I understand you to say that? No; I should recommend W. V. Read,

120. Then you have recommended the use of staiths for coal purposes? Yes.

121. And what other purposes besides? Coal chiefly.

122. At what stations have you recommended that staiths should be erected for the coal traffic? I have 26 Aug., 1884.

recommended them generally, but Newtown is the station I have chiefly in view.

123. That is for what we term mountain coal, I presume? Any coal.

124. Is it not the mountain coal that is at present coming to Newtown?

125. Are you aware that the Illawarra line will alter the whole of the coal traffic, as soon as that line once gets to the coal properties that are on the line? I have no doubt the suburbs will be nearly altogether supplied with Illawarra coal as soon as the railway is open to the mines.

126. Do you think that one truck of coal will come to that station from the Illawarra line? Yes, certainly

127. In what way will the trucks be brought to the Newtown station from the Illawarra line? They will be brought round by Macdonald Town from the junction.

128. Then they will come into the Sydney yard and go back to Newtown? No.
129. Where will you get them to cross the line—in the Eveleigh yard; the Illawarra line comes right into the Eveleigh yard, and at a lower level, I believe, than the Newtown yard? No; the Illawarra line

is on a level with the Eveleigh yard.

130. They would come through the Eveleigh yard and be shunted across the line to be delivered at Newtown or any other station further on? They would be shunted on to the sidings at Eveleigh, and then

taken out to the suburban stations.

131. Has there been any other report that you know of with reference to erecting staiths for the delivery of coal or other produce of that kind? None that I know of but my own report.

132. Do I understand that you had in view, when you made this report, that staiths were to be erected at all these places for the delivery of goods that were to be carried by this class of trucks? I had it in view that it would be better for the Department to get possession of their trucks quickly, to have staiths at all places where quantities of coal were unloaded, and that if we had these staiths these trucks could then be well and profitably used.

133. Then I see from your report, and from your evidence now, that all this depends upon certain things being done? Of course, as I have shown in my report, it is only under certain circumstances that these

trucks can be fully utilized.

134. And so far as you know now this truck has never been attempted to be used anywhere except these two or three trials, where the parties that sold and the parties that were the buyers were present? It has never to my knowledge been used for traffic purposes; it has only had these trials.

135. Have you not lying in the Eveleigh yard now some hundreds of trucks ordered for coal purposes, and for the permanent way people in repairing, that have never been used? I think not.

136. Have you any personal knowledge that there are some hundreds—I counted 150 myself when I was coming down in the train a fortnight ago—I do not know that they are in the yard now, but I made inquiries, and I was informed that they were there and never had been used? If such is the case I am not aware of it: I do not think it is so. not aware of it; I do not think it is so

not aware of it; I do not think it is so.

137. Is it within your power, as Traffic Manager, to know what rolling stock you have for your use, or is it not your duty to know and see what rolling stock you have in use, and that which is not in use? Of course I do see that all the trucks that I have are kept fully employed, and that they run as much as possible. I fancy the trucks you speak of must be trucks marked off for repairs.

138. These trucks I refer to have never been used; they are new trucks that have never been used? I have made for the patent coupler trucks which were made for the

do not know whether the trucks you refer to are the patent coupler trucks which were made for the permanent way department. Some of these may be idle for a few days, when the permanent way men are not at work, but I have no knowledge of them.

are not at work, but I have no knowledge of them.

139. What do you refer to as the patent coupler trucks? There is a number of trucks with patent couplings, or a new kind of coupling that will not connect with the ordinary trucks, and they are being used by the permanent way branch; it may be these that you have seen standing at Eveleigh.

140. Do you say the patent couplings will not work with the other rolling stock that you have? Not where they will not couple on to the other trucks; they must have a special coupling.

141. Have you not some hundreds of them, so that you could send dozens of trains into Sydney with them alone? You cannot keep all of a particular kind of truck together; in different consignments they must get mixed up with the other trucks generally in use. We tried to work these with our other trucks, but we found we could not well do it. but we found we could not well do it.

142. Have you not tried to work them alone and were unable to do it—that is, unable to do it with safety to the public;—have you not worked these trucks without mixing them with other trucks, and found it was unsafe? No, we have never had any accident, or anything, with any of these trucks.

143. I do not ask whether you have had any accident; I ask whether you felt it unsafe to work them for traffic purposes? No, I have not found it unsafe.

trainc purposes? No, I have not found it unsate.

144. Do you recollect having them working in train loads by themselves without mixing them—keeping them going to certain stations? Yes, I had a train load of them working; when we were short of trucks I got them from the engineering branch, and we worked them between Emu Plains and Sydney.

145. Have you had any report from the men who were working them that they were unsafe? They reported that at Emu Plains, on the curve going into the siding, the couplings came off.

146. And did you work them for traffic purposes after that? I worked them on straight lines—on the level lines

level lines.

147. Have you ever sent any of them over the mountains for traffic purposes, or for any purposes? The

permanent way branch have used them over the mountains.

148. Have you ever had them going regularly to South Creek, a train load of them, loading with firewood and hay from that station? I had a few of them running between Sydney and the wood stations, but found, on account of the difficulty in getting people to load them for Sydney only, that we had to

discontinue using them in this way.

149. You think you only worked them to Sydney—a train load of them by themselves? We worked them in with other trucks, but the truck with which they were coupled to the ordinary trucks had to have a special coupling.

26 Aug., 1884.

6

W. V. Read, 150. What was the special coupling you refer to, that you had to use to unite these two different kinds of trucks? The special coupling had to have a link on it, the same as the others, so as to couple it to the ordinary truck.

151. Did you at any time recommend the construction of 200 of these trucks with the special coupling?

No, I think not.

152. Is it usual, or ever done, to order any number of trucks without your recommendation? Yes; trucks for permanent way purposes are ordered by the Engineer for Existing Lines, and those for locomotive purposes by the Locomotive Engineer.

153. They were not intended for traffic purposes at all? I believe not. 154. We are speaking of the patent coupler trucks? Yes.

155. Do you know how many of these trucks are now in use and ordered, with the patent couplings? I think 250 were ordered for locomotive and permanent way purposes, and about 200 of these have been

supplied.

156. And you believe they were ordered by the Engineer for Existing Lines for use on the lines? I do not mean to say that the Locomotive or Permanent Way Engineers ordered trucks with the special All I do know is that the Locomotive Engineer and the Engineer for Existing Lines asked for couplers. trucks for their special use.

157. Who constructed these trucks? Hudson Brothers.
158. Ohairman.] You stated just now that you did not think it advisable to run different classes of trucks together—that you thought it better to keep the new class of trucks together? Yes, on account of the couplings.

159. Is it not a fact that auction sales of wood are held daily at Darling Harbour? Yes.

160. Do you not think it would greatly interfere with the competition if the auctioneers were unable to submit less than 20 tons for competition? It is a matter of opinion. In Victoria they will not allow any sales on the railway premises.

161. You have always allowed the system here? Yes.

162. Do you not think it would greatly interfere with small buyers if they were compelled to come down to the harbour and purchase 20 tons. Would it not put the monopoly into the hands of the large dealers? to the harbour and purchase 20 tons. I think a great many buy 20 tons now.

163. Is it not a fact that many private people come and buy? Yes.
164. Do you think they would be able to buy if they had to buy 20 tons? There might be a difficulty

165. You admit that as far as the Department is concerned it gains nothing by throwing out the billetwood, except the speedy use of the trucks? Yes.

166. All the unloading is supposed to be done by the consignees? It is supposed to be, but when we are pushed for trucks we have to unload ourselves.

167. The regulation is that if they do not unload within a certain time they are liable for demurrage?

168. You stated in reply to a question that it would be only in certain places that you could erect staiths for using these dump-cars? Yes.

169. Could you erect them at Darling Harbour? Not where the sales are at present held.

170. Is it not a fact that all the wood now comes to Darling Harbour? Yes, the wood for Sydney is all

consigned to Darling Harbour at present.

171. Auction sales are held at Newtown? Yes.
172. So I presume the same objection would apply there with regard to small buyers as would apply to

Darling Harbour? Whatever applied to Darling Harbour would apply to Newtown.

173. Mr. Suttor.] What is the greatest weight carried in any of the trucks now in use? 15 tons. have long trucks which we put 15 tons on.

174. Chairman.] What is the weight carried in the usual trucks? About $6\frac{1}{2}$ or 7 tons.

175. Mr. Suttor.] On how many wheels? Two pairs.

176. How many are there to these special dump-cars? Four pairs.

177. Do you think you would be able to run trucks like that on any of our lines? Yes; they are no

longer than the American cars, and the wheels are on the same principle..

178. Mr. Poole.] What is the weight of the ordinary 15-ton trucks? About 11 tons.

179. Mr. Suttor.] You say some of these trucks with special couplings have been ordered by the permanent way department? No, I do not say that. The permanent way department ordered trucks, but not, so far as I am aware, with patent couplers.

180. The couplings are a patent? Yes.

181. Who are the patentees? Hudson Brothers, I understand.

182. I understood you to say that on the Emu Plains siding you found these couplings became detached? Yes.

183. Who were the inventors of these couplings? Mr. Cowdery and Mr. Thomas I believe.

184. Hudson Brothers are now in possession of the patent? Yes, I think so.

185. Did Mr. Cowdery order these trucks? The locomotive engineer and the permanent way engineer ordered trucks, but not, so far as I am aware, with the special couplings.

186. In what Department is Mr. Thomas? Mr. Thomas, I believe, is in the Engineer-in-Chief's branch.

187. He would have nothing to do with ordering the trucks? No.

188. The recommendation would reside with the permanent way department? As I before observed, the locomotive and permanent way departments required and ordered trucks for their special use, but I am not aware that they ordered them with the patent couplers.

189. I understand you to say that in running on to the siding at Emu Plains the couplings became detached? Yes, round a very sharp curve.

190. What is the radius? I believe it is sharper than any other on the line.

191. What is the radius? And this couplings became a company of the mountains? 8 chains.

192. And this curve is somewhat sharper? Yes, I believe it is.
193. Are they still running these trucks on the mountains? No, I do not say they are running them on the mountains.

194. For your traffic you did not run them on the lines where the sharp curves are? No.

Mr. W. Scott

27 Aug., 1884.

ON THE PURCHASE OF RAILWAY ROLLING STOCK.

195. Is the permanent way department running them on the mountains where there are sharp curves? W. Y. Read, I do not know whether they have any working on the mountains.

1 do not know whether they have any working on the mountains.

196. Mr. Sutherland.] Is it not a fact that they have uncoupled in the Sydney yard in shunting, and that your men have refused any responsibility in putting them out with any goods? No report of that kind has been made to me, and I have not heard of it; I ought to know of it if it were so.

197. Mr. Poole.] With reference to the sharpness of the curve, the trucks will go round safely;—does not that depend upon the wheel base? Yes, the closer the wheels are together the sharper the curve may be.

198. That is the reason why bogic carriages are used for long trucks? Yes.

WEDNESDAY, 27 AUGUST, 1884.

Aresent :--

Mr. CHAPMAN,

Mr. POOLE,

Mr. TEECE.

SYDNEY SMITH, Esq., IN THE CHAIR.

Mr. William Scott called in and examined:

199. Chairman What position do you occupy in the Railway Department? Locomotive Engineer. 200. What are your duties principally? The supervision of the whole of the rolling stock and the whole of the men connected with the Locomotive Department.

201. Have you seen the dump-cars? Yes; on Monday I went down to Darling Harbour and saw the

cars being put together.

202. On what date did you first see the first dump-car imported? Shortly after my return to the Colony after leave of absence-somewhere about June, 1883.

203. Were you called upon to report regarding the suitability or otherwise of cars of this description? No.

204. Had you anything to do with the ordering of these dump-cars? No; it is no part of my duty to give the orders for vehicles—the Commissioner always does this.

205. Were you in charge at the time the trials were made? I saw some of the trials.

206. What was the car loaded with when tried? With ashes when I saw it.

207. Were you called upon to report after the trial? I think I was asked some questions; I was asked for a specification.

208. Do you consider the result of the trial satisfactory? For certain purposes it would be satisfactory; not for general traffic.
209. Did you consider the trial with ashes satisfactory? Yes, for dumping over a bank.

210. At the particular spot where it was tried did you consider it satisfactory at the time? Partly. It had every chance; it was on the edge of the embankment, and there was nothing in the way; it was at Darling Harbour, just on the edge of the bank. 211. Did the car empty itself? Not quite.

212. Do you know of any other trials being made? There may have been other trials, but I was not

present.

213. What do you think of the workmanship of the cars? The workmanship is fair, but not to be compared with our Colonial work—not so good as our Colonial work.

214. Do you think these cars would be perfectly safe to work over the mountains? No, not as the first

215. Has any alteration been made in those imported which would make them suitable for the mountains?

Yes, the alterations to be made make them much safer.

216. Do you think they will be perfectly safe to run over the mountains? I do not see any objection to them now, when the bogies are coupled with links.

217. Do you think the workmanship is perfectly safe—that there is no fear of them turning over in transit? I do not think there is.

218. Do they interfere with any of the platforms? No; they will clear all our platforms; I made out a sketch to confine them to width.

219. Mr. Poole.] Not to exceed 9 feet?

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m Yes}.$

220. Do you think the workmanship of these cars as imported is equal to our Colonial work? No.

221. If cars were made with the same workmanship in this Colony, do you think you would accept them? We are to accept them subject to inspection when erected.

222. Would you accept them if made here? Yes, if the work was sound.
223. You say the work is not so good as Colonial work. What I want to know is, whether, supposing cars were made similar to this pattern, which these were made by—that is, the one in Sydney—supposing there was an order given to any Colonial firm to make 200 cars for our lines, would you accept the workmanship;—do you think the workmanship would be accepted if it were no better than this? No, I should not; but in the specification I have the power of rejecting any work I do not consider safe in the 200 dump cars.

224. If the cars imported are of the same workmanship as the pattern car, will you be bound to accept them under the agreement? No; there is a clause in the specification which deals with that.

225. Do you think these cars can be used unless the line is raised above the platform? They will suit our coal-shoots at Eveleigh, and there is another very suitable place at Eskbank.

226. Are there any other places? Those are the only places that I recollect now.

227. What quantity do you estimate you are using at Eveleigh? I could hardly answer that question.

228. How many tons a day? I really could not answer that question just now.

229. That is with regard to the coaling of the engines? Yes.

230. Do you think that for general purposes—for general traffic, such as wood and coal—that these cars could be used (say) at Darling Harbour, on the ordinary lines? Really I could not say; that is a matter more for the Traffic Department.

231. You cannot give an opinion as regards the other traffic? No; the Traffic Manager would answer that.

Mr. W. Scott. 232. On the 16th of January you state in a minute :—" Under these circumstances I cannot recommend 27 Aug., 1884. that it be used, as the contractors who have tendered to build this pattern might make it cause of complaint." That refers to the one now in use? That had a central draw-bar, and of course the frames would have to be re-arranged for side-buffers.

233. I should conclude from that minute that you did not wish to have any alterations made in the pattern, except side buffers and chains? That one remains there as the pattern waggon to be worked to-

the first one, with the alterations to be made to enable them to work with our other stock.

234. They are to be made according to that pattern? Yes, with the exception of the tracing that was sent, to have side buffers and draw chains.

235. What kind of wheels are there on this car? Chilled cast-iron.

236. Would you recommend that sort of wheels for the mountain traffic? No, it is not advisable in my opinion.

237. Are the wheels for the 200 dump-cars that are being imported made of chilled cast-iron, the same as

Yes, they are.

238. What kind of wheels is used on the rolling-stock generally? Wrought-iron centres with steel tires. 239. Do you not consider that they are far safer? Yes, they are safer and more durable; but I do not want to convey that these cast-iron wheels are unsafe; they are merely shorter-lived than those with steel

tires;—sure to live for a certain time.
240. Would you recommend these wheels for our purposes? No; I would recommend the wrought-iron

centres and steel tires in preference.

241. Had you been called upon to report prior to the order for 200 dump-cars being sent, would you have recommended that the order should be given for cars with these wheels? No, I would not. But wrought-iron wheels are much more expensive than chilled cast-iron wheels.

242. Have you ever recommended chilled wheels for any of our stock recently? No. We have had the

same wheels imported with our American carriages.

243. Mr. Poole. Chilled cast-iron wheels? Yes; and they have run considerable mileage. 244. Chairman. You think the others are more durable? Yes.

245. Do you think the increased cost for English wheels—the wheels under our ordinary rolling stock—is repaid by increased durability? Yes, 246. Is it not more than repaid? Yes, it is an everlasting wheel. 247. You can renew the tires at any time? Yes.

248. Can you renew these chilled cast-iron wheels in any way? No; we pull them off when they are

worn out, and have done with them.

249. If there is anything wrong with them what do you do with them? Put them on one side and break them up. The others will stand turning up five or six times; then the tire can be removed and a new tire put on; the wheel is practically everlasting.

250. For general traffic, do you think the Government will be able to weigh these trucks on their small weighbridges? Not on the small weighbridges. They could weigh one end at a time, which would suit

all practical purposes.

251. Do you think that is an accurate way of weighing? No, not quite, but nearly so. 252. To weigh correctly you think it will be necessary to have larger weighbridges put up? Yes; I believe there is a large weighbridge in store now that will take a long car.

253. Have any been put up on the line? No, none that I know of; but if the necessity arose no doubt

they would.

254. You think that before they can weigh accurately they will have to have these large weighbridges put up at different places? Yes, to weigh accurately and with dispatch, because it takes much longer to weigh one end at a time. However I do not think that is material as regards those dump-cars, for we are making long waggons of another pattern now.

255. We have some of these large trucks in use now? Yes, G trucks—a number of them; 28 ft. 6 in.

long in the body I think.

256. What are they used for principally? General traffic. They are very handy trucks for many purposes.

257. Could you use these dump-cars for general purposes? I do not see what is to prevent it.

258. With the dumping principle I mean general traffic for dumping? I do not think they will be found

259. Have you seen Mr. Carson Woods' letter of the 6th August, page 6, number 14, of the printed papers. The particular part of it I refer to is the sixth paragraph:—"The Department, I understand, papers. The particular part of it I refer to is the sixth paragraph:—"The Department, I understand, wants rolling stock, and no better or finer car for any freight purpose can be had than the patent screw lever dump-car." What is your opinion about that;—do you think the representations made by Mr. Woods are correct? No, I do not. Of course the Traffic Manager is in the best position to answer that question; but I do not think, myself, that they are answerable for general purposes—that is, for dumping purposes; but they would, no doubt, make a useful traffic car, as they carry a large load with a very small tare.

260. I forget whether I asked you whether you were called upon to report before this order was given for 200 dump-cars? No; I think the papers show that.

261. Is it not usual, when ordering rolling stock, for you to be referred to? It is in some cases: in most

cases in fact, but not all.

262. Have you ever known it to be departed from; that is, for a large order to be given without referring to you beforehand—an order amounting to something like £38,000 for a new idea? No; but others would be quite as capable of judging of the merits of the car for traffic purposes as I would.

263. Mr. Poole. In reference to the workmanship of the cars, will you be good enough to explain to the Committee wherein the inferiority consists, as compared with ordinary Colonial or English work? The iron work is your light, and your poughly get up.

ron work is very light, and very roughly got up.

264. Do the Committee understand from you, as locomotive engineer, that work of a similar quality to that in the pattern car, by which these other 200 are to be made, if made by a Colonial firm, would be rejected? I do not know how to answer that question.

265. I will put it a little plainer. Is the workmanship in this pattern car—not only the workmanship but the size and strength of material generally—up to the standard of what you require from Colonial

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266. The wheels of these cars are block wheels? Yes, cast-iron chilled wheels.
267. What is about the length of this dump-car? Somewhere about 28 feet; I could not say to a few

268. And the length of our new G cars is about the same? They are 28 feet 6 inches.
269. Irrespective of the dumping business, looking at these cars as a whole, do you consider them as well suited for ordinary traffic as our new G waggons? They are made of lighter timber and lighter struts than ours, but they will carry the same weight.

270. I was speaking more particularly with respect to the safety of travelling. Suppose they are loaded with any kind of merchandise that would have to be unloaded by hand under any circumstances, are they as well fitted for that kind of traffic as our new G waggons? No.

271. Do you think, taking our mountain line as a test, that they are as safe for running purposes, loaded in the ordinary manner with ordinary mcrchandise? I do not say they are unsafe.

272. Do you think they are as safe—have they the same maximum amount of safety as our own stock?

No.

273. How many of the long weighbridges that you have alluded to are in stock? There is one, I know. 274. Is it of English make? No, American make.

275. Was it imported with these cars? No.

Was it imported as necessary with a view to using these cars? No.

276. Was it imported as necessary with a view to using these cars? No.
277. The Chairman has asked you whether, owing to your position, you are as a rule called upon to report upon all supplies required for your department? Yes, rolling stock in particular.

278. And in this particular case, where the Government or the Commissioner thought it right to make a departure from the standard stock used, you were not asked to report? No, not until the matter was arranged; but precaution was taken that I should have the power of accepting or rejecting the cars if not up to standard.

279. Can you give the Committee any idea what it will cost to remodel this pattern car, and make it suitable for our traffic purposes? Perhaps £25.

280. You have noticed the bogie frames on the wheels? Ycs.
281. Do you consider them strong enough—the iron bogie frames? They are not so strong as we should make them, but for a load of 9 tons I think they should be able to carry it.

282. That is a total weight of 18 tons upon the two sets of bogie frames?

283. What is about the difference in percentage of strength between the bogic frames of the pattern car and our own bogic frames? I have not measured them, but I should say they are 50 per cent. lighter than our new bogie waggon frames; but at the same time I think ours are stronger than what is really necessary; but it is better to err on the side of safety.

284. Then you are simply carrying dead weight that is of no use? We think of reducing the weight.

285. With respect to their dumping properties, I think you stated, in answer to the Chairman, that the trial you saw was made when the car was required to discharge a load of ashes at the head of Darling

Harbour bank? Yes. 286. And in that case it did not discharge the whole of the load? No; it had to be shovelled out, part

287. And there are two positions—at Eveleigh and Eskbank—where you think these cars could be used?

 \mathbf{Y} es. 288. Taking the position at Eveleigh where you think the dump-car could be used to advantage, what would be the difference between the lower coaling road and the main line siding in level vertically, in order to work and allow your coal-staith to come in and make the dump-car fairly useful? I think it is

11 feet we require for our tenders to load coal from small trucks into our tenders. 289. 11 feet between the lower road level and the top of the coal-staith, and then from the top of the coal-staith to the main line siding level, how much do you require? I think 3 feet ought to do, but more

if we could get it.

290. As far as you have seen of the dump-cars now landing, out of which these 200 cars are to be made up, it is of no better class in point of workmanship than the sample car? No; in fact there is some of

it there I will have to reject—some of the iron work.

291. Altogether, in summing the whole matter up, to your mind it will not be so satisfactory to the Department, taking these cars in the way they are now imported, as if they had been made in the country?

No. Of course we could supervise the work better here.

292. Mr. Chapman.] Whose duty was it to superintend the unloading of this car and to report upon the adaptability of it? I was not there.
293. Have you any idea whose duty it ought to be? That was a question which Mr. Carson Woods himself answered. The waggon did not exactly belong to us then.

294. Prior to the ordering of these 200 cars, was this dump-car tested by any of our Government employés? I really could not say whether there was an official test. Mr. Carson Woods invited a few persons to be present.

295. And without a test of its adaptability for our use on the railways 200 cars were ordered? I think the Minister for Works and the Colonial Treasurer were present themselves. I was not present.

296. Under ordinary circumstances would it not be your duty to report upon the adaptability of a dump-car or any other vehicle to be used on our railways? Yes, if I was asked to do so. The car did not belong to us; it was the property of Carson Woods & Co. at the time.

297. But you were about ordering 200 of them? I was not aware of it.

298. You are not aware that anybody was ever called upon to report as to the adaptability of this car for our railway purposes? I am not, but they may have been.
299. If a report were required, are you not the party that would be called upon? It may have been done during my absence. This trial was made before I resumed my duties after returning from leave of absènce

300. Who was acting for you? Mr. Midelton.
301. These dump-cars are being put together in the Government sheds? On Government land at Darling Harbour.

302.

MINUTES OF EVIDENCE TAKEN BEFORE THE SELECT COMMITTEE

Mr. W. Scott. 302. Was that arrangement a portion of the specification, that the Government should supply the contractors with workshops? I know nothing about the arrangements-nothing more than what is in the 27 Aug., 1884.

papers.
303. If a gentleman, a manufacturer in Queensland or New Zealand, were to attempt to supply cars according to our specification, would he be allowed to put them together in the Government sheds? By making an arrangement with the Commissioner he might; the Commissioner would have the power to grant that; but I presume rent would be charged, and it would be better than having the shed idle.

304. It is no portion of the specification that they should be allowed that advantage? Not to my knowledge.

305. Does it come under your province to arrange couplings and so forth? Yes, to a certain extent 306. Do you know anything about a new coupling that has been patented, and a large number of them supplied to the Government? Do you mean what is called the Cowdery-Thomas coupling?

307. Yes. Was that approved of by you? No, I never did concur in that coupling.
308. Are those couplings being used now? Yes, we have a number of them in use in coal trains from Darling Harbour to Redfern yard, and a number on a ballast train.

309. Are there any complaints with reference to them? There have been several complaints of the difficulty of coupling them up with the ordinary stock.

310. Has it ever occurred that they have uncoupled themselves when not required to do so? It has been

reported that they have done so, but I have not seen it myself.
311. Chairman.] These dump-cars are being put together at a place called the Atlas Company's Works? Yes.

312. Does that belong to the Atlas Company now? No; I understand it belongs to the Government; it has been resumed for railway purposes.

313. Did you not understand that these dump-cars were to be manufactured in the Colony? That was my impression.

314. Was that not part of the agreement? I understood so. My impression at the time they were ordered was that they were to be built in the Colony.

315. Do you know why that agreement has been departed from? I do not.

316. You say all the cars are now being imported? Yes.
317. What use can you apply the sample car to? We will have to alter it; we cannot use it in its present

state; it wants side buffers.

318. It is too wide, is it not? Yes; we will have to make it narrower, and put side buffers and centre

319. Mr. Poole.] I suppose you got your impression that the cars were to be made here from Mr. Carson Woods' letter to the Commissioner, of the 17th August, 1883, No. 18 of the printed papers? Yes.

320. But the whole of the work is being done out of the Colony? Yes, except the fitting together.
321. Do you know who are the patentees for the patent couplings we have been speaking of? The

Cowdery-Thomas Coupling is the name it goes by. 322. Is Mr. Cowdery in the Government service? Yes.
323. In what position? Engineer for Existing Lines.
324. These couplings are used on some ballast waggons? Yes.
325. Who built those waggons? Hudson Brothers.

326. Fitted with these patent couplings? Yes.

327. Have Hudson Brothers any interest in the patent? I could not say.

328. And these ballast waggons are used solely under the direction of Mr. Cowdery himself? Yes. 329. Is Mr. Thomas a Government officer? Yes, I believe he is.

330. Do you know in what capacity? I do not.

330. Do you know in what capacity? I do not.

331. The couplings, irrespective of who makes them, or who is the patentee, are, in your opinion, not suitable to our purposes? There is a difficulty in coupling them with the ordinary stock.

332. Supposing the whole of our stock was fitted with these couplings, would you consider that an advantage? I do not think it would be any advantage.

333. Is the cost of the patent coupling greater or less than the ordinary coupling? I should say it is more.

334. And in your opinion not so effective? No.

335. Chairman.] Mr. Midelton was in charge of your duties during your absence from the Colony? Yes. 336. Mr. Midelton says:—"As for coaling engines with the dump-car, I could not possibly agree to that, as I think it very little, if any, better than our present system with the D waggons. Should it be decided to order any of these cars, I beg to suggest that dimensions of axles, buffers, &c., be sent, to save alterations when they arrive in Sydney." He alludes to our present coal stages.

337. What would it cost to make these alterations all over the lines in the coal stages? That is a question I could not answer. Unless the ground is suitable to it it would be almost impossible to do it. If the ground is suitable, as at Eveleigh, it could be done.

338. At any other place the expense would be very great? Yes; in fact I do not know that it would be practicable.

Mr. Edward John Bourn called in and examined:-

Mr. 339. What position do you occupy? I am Inspector of Rolling Stock.

E. J. Bourn. 340. What are your duties? To superintend the manufacturing of carriages and waggons; to superintend all new work outside, and all general repairs inside.

341. How long have you been in the Government service? Nearly twenty-nine years. 342. You have seen the dump-car—the sample one? Yes.

342. You have seen the dump-car—the sample one: 1es.
343. Were you called upon to report as regards the workmanship? No.
344. On the 29th December, 1883, you wrote:—"I beg to report that previous to the dump-car being allowed to be used by the Traffic Department, it is necessary that it should be taken to pieces and reconstructed, as at present it is too wide and will not pass the platforms; it also requires to be fitted with buffers and draw-gear to suit the present rolling stock now in use." Did you write that minute? Yes. When they talked about taking it upon the line, in my position I found it was too wide. That was not reporting upon the workmanship.

was put together in the yard under my supervision.

346. What do you think about the workmanship? It is rough.

Only when having it put together; it

E. J. Bourn. 27Aug., 1884.

345. Have you examined this dump-car—the one at Redfern?

347. Is it equal to the rolling stock manufactured in the Colony? No, I do not consider it is.

348. Would you pass similar work to that, if you were called upon, for work made in the Colony?

349. Do you think it is a safe truck to use? I have my doubts about the safety of it in many points. I do not think it is safe with the provision that is made for preventing it from dumping over in transit; it is likely to drop over if anything gets out of order.

350. Do you consider it dangerous? No; I do not consider it safe.

351. Do you think there is any fear of its dumping over in transit? Yes, if any of the leverage gets out of order a little.

352. What do you think would be the result if that car were to tip over in transit? It would cause an

obstruction on the line, and if a train was passing at the time it would cause a serious accident.

353. Are the cars now being imported made on the same principle? I think there is some alteration, but I not in a position to say, not having examined them. I only got notice yesterday to superintend the putting of them together.

354. You have not seen those imported then? I have seen part of them; I was there the day before yesterday.

355. What do you think of the workmanship of those that have been imported;—do you think they are any better than the sample? Not a bit; they are very rough.
356. What do you think of the wood work? The wood work is rough.
357. Is it equal in any respect to our Colonial-made work? The timber is better in some cases than our

hardwood, where strength is not required and lightness is desirable.

358. I am speaking of the workmanship? I do not think it is equal to what we make here.
359. What weights are these dump-cars supposed to carry? To the best of my memory it is 20 tons.
360. Do you not think that, considering the extra weight this car is supposed to carry, it should be stronger than it is? No, I think it is strong enough; only that the dumping arrangement is not sufficiently safe to travel on account of its liability to jump over.

361. You do not think it is safe to travel? No.
362. It is your duty, I understand, to report upon all rolling stock, is it not? When I get orders to do so.
363. I mean before being used? Yes.

364. Were you called upon for a report previous to the order for 200 dump-cars being given to Carson Woods and Company? I have no recollection of doing any more than writing this minute.

365. Is it usual, when a new class of stock is tried for you to be asked for an opinion? Yes.
366. Has any new class of stock ever been adopted here, and a large order sent home, say for £38,000 worth, without your being asked for an opinion? I am not aware of it.

367. Do you remember any case similar to this, where a new description of car has been tried, and a large order given on the test, where you have not been called upon to report—any case excepting this? No, I do not recollect any. Nothing has been imported but these cars since I have been down in Sydney. I knew nothing about this, only that I heard verbally that 200 of these cars were ordered; I never saw any papers nor had anything in writing to inform me they were going to do it.
368. Before adopting a new class of rolling stock is it not usual to ask the opinion of the officers? Yes.

369. You say it has not been done, as far as you are concerned, in this case? No, it has not. 370. Did you understand that these cars were to be made in the Colony? I understood verbally that Carson Woods & Co. were going to deliver 200 of these cars, but that they were to be made in the

371. Mr. Poole. From whom did you understand that? I could not say who it was, but I heard it up in the Engineer's office.

372. That was simply your impression? That is all.

373. Chairman.] Do you know whether they are being made in the Colony? No, they are being imported.

374. Have any arrived? About fifty of them, I fancy, from the amount of materials lying there.
375. Where are they being made up? At Darling Harbour,
376. In what place? The old works of the Atlas Company.
377. Who do the Atlas Company's Works belong to now? I fancy that ground belongs to the Govern-

ment; I could not say.

378. Were you present at any of the trials of this dump-car? I was at one when it was tried with ashes.

379. What was the result? They tried to dump it down at Darling Harbour at one siding, and I suppose one-third of the ashes fell out; then they brought it up to another siding, and tried it down a bank, and they got about one-third out again; then the ashes ran under the wheels and had to be dug out before the car could be removed.

380. How long did it take to unload it? We did not take the time particularly.

Were there many men employed? One man and a guard. 381.

382. Was the car disabled in any way after this test?
383. There was another test? Yes, with billet-wood.

383. There was another test? Yes, with billet-wood.
384. What was the result? I think six pieces fell out when the car was dumped over.
385. How many pieces were loaded on it? It was loaded full. None went out of the It was loaded full. None went out of the doors.

Yes, off the top. 386. About six pieces fell off?

387. How did you get the remaining portion out? We got it up and left the Traffic Department to unload it afterwards

388. How many billets do you think there would be in that truck? I daresay there was about 18 tons of wood in it.

389. And it threw out about 3 cwt.? Yes.

390. Which way was the billef-wood stacked in the car—crosswise or lengthwise? Some one way and some the other.

391. Was it a fair load, as it would be loaded at a station? Yes.
392. Was the truck disabled in any way on that occasion? The doors or gates as they call them were slightly strained—not to a very great extent.

393.

·E. J. Bourn.

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393. You considered that the tests, as far as you could gather, were not satisfactory? I reckon the test was a total failure.

394. You were not called upon to report? No.
395. Do you know whose duty it was to report? I think that was done through the Traffic Department.
396. Mr. Poole.] Are you sure about it? No, it did not come with us.
397. Who was present at the test? The Commissioner, Mr. Wright (the Minister for Works), and

Mr. Dibbs

398. Were they present at both tests? They were present at the test with billet-wood-the Traffic Manager (Mr. Read), Mr. Midelton, and several others

399. There were no further tests made of that car? Not that I am aware of I did not see any others. I believe it was once loaded with gravel, but I am not aware that it was ever tested for dumping with that.

400. You know the machinery, the canting levers, to cause the car to cant over? Yes. 401. If these levers were locked when the cars were in a horizontal position, could the car cant over? No. 402. Then, in order to obviate the danger of the car canting over while in transit, all that it would be necessary to do would be to lock the levers? Yes, lock the levers down to keep them tight. 403. Is that your principal objection to them—the liability to cant in transit? Yes, that is the principal

one.

404. Irrespective of the dumping, do you think they would be safe while travelling? Yes, if you make them so that there is no liability to go over while in transit.

405. Of course you have examined the mode in which the car is canted over? Yes.

406. To your mind the danger in using these cars, as at present constructed, is that the oscillation in transit might cause blocks that hold the car in position to shift and allow it to cant over? Yes.

407. Do you object to these cars on any other ground for use in general traffic? They would be difficult to unload because of the way the doors are hung.

408. You object to them for ordinary purposes because the side doors are top hung instead of bottom hung; and therefore heavy packages could not be slid out or in, but would have to be handled with a crane? Yes.

409. Chairman.] And the workmanship is not equal to that made in the Colony? I do not think it is.
410. Have you examined the quality of the iron-work? No, I have not examined the quality of the iron. 411. Is there any danger of the body of the car jumping off the bogie frames? It is very likely to do so in a little rough shunting. There is no king-bolt to connect them together; you cannot put a bolt in. 412. Suppose the car were going up one of our steep inclines, and there is a sudden jerk, is there a likelihood of the fastening coming out? Yes.

413. What would be the result? It would be very serious.

414. Is any of our rolling-stock constructed in the same way? No.

415. Have you examined the wheels? They are cast-iron chilled wheels.

416. What do you think about these cast-iron chilled wheels? I do not think much of them. We have the same wheels on our American cars; the wheel must be thrown away when it is worn out. It cannot be fitted with new tires like the ordinary wheels.

417. With the ordinary wheels you can renew the tires time after time? Yes; and they last for years.
418. Would you recommend the use of chilled cast-iron wheels for our own stock? No, I do not believe in them; I believe in the wrought-iron wheels.

419. Then you think the whole construction of this car is faulty? Yes.

420. It is not what you would recommend? No.

FRIDAY, 29 AUGUST, 1884.

Bresent: —

MR. CHAPMAN, Mr. POOLE,

MR. SUTHERLAND, MR. TEECE.

SYDNEY SMITH, Esq., IN THE CHAIR.

Mr. Thomas Midelton called in and examined :-

Mr. T. Mideltor. :29 Aug., 1884.

421. Chairman.] What position do you occupy? Locomotive Overseer.
422. What are your duties? The general supervision of rolling-stock—engines, tenders, waggons, and so on-all rolling-stock.

423. Have you seen the printed papers in reference to the dump-cars? Yes, I have a copy here. 424. Do you remember receiving a minute from the Commissioner on the 6th April, 1883, asking you to report regarding the dump-cars? Yes, I see the minute here.

report regarding the dump-cars? Yes, I see the minute here.

425. You were called upon to report regarding the sample car? Yes.

426. Did you recommend it? No. My minute is here, and I still hold the same opinion as is here expressed. I have said here:—"Theoretically this dump-car looks very satisfactory and promises well, but when I fully consider the matter in its various manners of application, I really cannot see much in it to recommend." That is virtually opposed to the recommendation of the use of the thing.

427. What was your position when you made that report? I was Acting Locomotive Engineer then.

428. And as such it was your duty to report upon all rolling stock ordered by the Government?

at that time I was responsible for everything.
429. You condemned this car then? Virtually I did condemn it; I do not see how it can be profitably 429. You condemned this car then? Virtually I did condemn it; I do not see now it can be prolitably used on our railways. I do not see much in the thing myself, or how it can be used to advantage. For instance, take wool: if a car is loaded with wool up the country, and you bring it to Sydney, I do not see any particular virtue in being able to dump it all on to the ground; and I do not see how it could be dumped on to a staith unless you had an elevated road to dump it off the car on to the platform. If it could be dumped from the car into a lighter or a ship's hold, of course there would be an advantage; but with our present appliances I do not see how it can be done. The same with coal. It was suggested that

Mr. T.

they would be very useful for coal and for ballast. I do profess to know something about coaling engines, but I do not see how the car can be used economically for that purpose even. If the waggon was loaded at the colliery and brought to the locomotive depôt it could not be unloaded except on the ground; and I do not see any particular advantage in dumping it on the ground. It would be better to shovel it on to a tender direct. In fact it is a disadvantage. But if you had an elevated road there might be a little advantage in that case. But that is not the most economical mode of coaling an engine.

430. If it were dumped on to the ground it would have to be thrown up on to the coal stage? Yes, it

would certainly; but it would be too high to be thrown on to the tender—9 feet high.

431. Is there any place where you could utilise it at the present time? Supposing we loaded ashes or refuse from the locomotives the ashes would have to be shovelled into the car, taken then on to the line, and dumped on to the side of the road for the ballest men to use; that means on the 6 foot; you ould not dump it on the side of the road; that means really that the car would have to be hauled at the same time as it is tipped, it would have to be kept moving so as to distribute the ashes on the 6 foot; otherwise the ashes would get under the wheels and clog the passing trains. Unless distributed nicely it would be rather an awkward thing for passing vehicles. Then again, on a single road it means dumping the ashes on the side of the road, and in that case we should have to move the wagoon along the road to make it distribute the ashes for use; otherwise it would go down the bank, and if it were in a cutting it would block the cutting up.

432. Mr. Poole.] The stuff would be thrown back under the wheels? Yes. As I have said in my minute here, I should prefer a ballast waggon or a coal waggon. The usual tip waggon used by contractors is a small narrow thing that will throw the dirt and other things close to where it is wanted, on account of

being so much narrower, but this is about 9 feet 6 inches wide over all.

433. Chairman.] Have you had long experience in connection with rolling stock? I have done nothing

else all my life since I left school.

434. What is your opinion about the workmanship of these cars? It is fair. I do not see anything to specially mention as being extraordinarily good, and I do not see that there is anything to complain of in the specimen car. I have not seen any of the others.
435. What description of wheels have they? They are cast-iron chilled wheels on the specimen car, and

the same on those that are now being unloaded at Darling Harbour.

436. What is your opinion of these wheels? I prefer wrought iron wheels with steel tires. But on a car like that, running as a ballast-car or coal-car, there is a risk, as all statistics from America show, of great accidents from the use of cast-iron wheels. I should not like to be the man to recommend their introduction here.

437. You would not recommend them on our mountain line? No, not in any country.
438. Have you examined the way in which the body of the car is fixed on to the bogie? Yes.

439. What is your opinion about that? I think that on sharp curves of 8 or 10 chains radius the car would be apt to dump itself at a fair speed when it is not required. It might do that, but I do not say it would. It is subject to that danger I think.

440. What would be the result if that happened? It might throw the train off the road, or it might not; but it would be more likely to throw it off than not.

441. Supposing that occurred on a double line? It would interfere with another train passing then, of

442. Is there any danger of the body of the car separating from the bogie wheels? Yes; the dumping arrangement might get out of gear. There is a vertical plug of iron, about 9 inches long, which stands on either side of the centre of the bogie, and if that should happen to be pushed out of gear there is nothing to prevent the car going over. That is the weak point in the dumping gear. I pointed that out in the first car, and I see evidence in the bogies now being imported of that being remedied—they have put a link and breaket on it. link and bracket on it.

443. What is your opinion about the workmanship in regard to the iron used in the construction of these cars? It is what I should call rough workmanship; it is not neat; it may be strong enough; it is fairly well proportioned, and the general gear is good. The draw-gear is not what I should like; it is a central buffer and draw-bar combined, which will not couple with any of our rolling-stock.

444. Mr. Poole.] That applies simply to the specimen car? Yes; the others have been made to a drawing, showing the width of the car, the height the buffers and the width apart, and the draw-gear to range with

showing the width of the car, the height, the buffers and the width apart, and the draw-gear to range with our other stock.

445. That drawing was supplied by you? Yes.

445. That drawing was supplied by you? Ies.

446. Chairman.] Was any reference made to the danger of dumping? No; it was a diagram to show the contractor what was required to make the cars gear with our present cars.

447. Was any specification made? No; my opinion was that it was best to adhere to the pattern car. If I had made a specification I should have taken all the responsibility of the design, and I preferred pointing out what was necessary, supplying a diagram to make them match our stock, and leaving all the rest to the inventor. Otherwise, if anything went wrong I should be expected to explain.

448. Were you asked for a report before these 200 cars were ordered? No: this is the only report I

448. Were you asked for a report before these 200 cars were ordered? No; this is the only report I

supplied.

449. Which is against them? Yes. I say here:—"As for coaling engines with the dump-car, I could not possibly agree to that, as I think it very little, if any, better than our present system with the D waggons." It was suggested to me that they should be used for that purpose, and that is my reply.

waggons." It was suggested to me that they should be used for that purpose, and that is my reply.

450. How did you first become aware of this order having been sent for 200 cars? If I remember correctly, Mr. Woods, the contractor for the cars, called and told me he had the order. I am only

speaking from memory; I may have had official notification of it.
451. Did anybody else call upon you in reference to it? No, I think not. I have not seen the papers since that minute was written. I think my last minute was 7/7/83—about that date—within a day or two

452. Do you remember any trials being made? Yes, I remember a trial being made on the Botany road

453. What was the car loaded with? It was ballast from Penrith River gravel. I forget whether it was loaded or not on that occasion; if I remember right it was empty; the trial just showed the tilting motion; but I know it was loaded down at Darling Harbour. 454

Mr. T. Midelton.

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454. Were you present at the test with gravel? I was present when the test was made at the Botany road; but whether it was filled and dumped I do not remember; I saw it filled, but whether it was dumped in my presence I do not remember; but I do remember its being dumped with ashes at Darling

455. What was the result of that? I do not think it was satisfactory; I think there was about 25 per

cent. of the load left in the car when dumped, and that portion had to be shovelled out.

456. Who was present at that trial? I think Mr. Woods only; Mr. Heaton was at the Botany Road trial; I really forget now who was present, but I know Mr. Heaton was at one trial; Mr. Dibbs, the present Colonial Treasurer, was also at a trial, and Mr. Wright (the Minister for Works), and the Commissioner; but I really cannot positively remember which gentlemen were present at the respective trials; I know I saw these gentlemen at one of the three trials.

457. Were you present at the third test at Darling Harbour with wood? Yes.

458. Was that the last test? Yes, I think it was.
459. Was it an official test? I think it was at the request of Mr. Woods. I had instructions to be

present.

460. What was the result of that? I think the same as with the ashes—not quite satisfactory; it did not all come out, but that might be accounted for by the doors swinging from the top, and the tip choking. Of course there is not the same opportunity with wood as with coal or ashes; the upper portion of the load, on an average 5 feet 6 inches high on the top of the car, slid off the top over the doors, but what was left inside jammed against the door.

461. Were you asked to report regarding these tests? No, I do not remember being asked for any

reports.

462. Was it after that the cars were ordered? Yes, I think so.
463. Were you made aware of the order being given? Yes. I do not know whether I saw the papers or not, but I heard of the cars being ordered, I think, through Mr. Woods.

464. Were you asked officially to report whether you thought it advisable to order these 200 cars? 465. Is it not usual to ask an officer in your position to give reports on any new idea in regard to rolling stock before ordering such a large number? Yes, it is usual to ask either Mr. Scott or me our opinion about the design of rolling stock before anything is done in the department over which we have control.

466. Do you remember any other orders for any rolling stock having been given without consulting you in your position while you were Acting Locomotive Engineer? There was nothing ordered without

reference to me when I was Acting Locomotive Engineer.

467. Did you understand that these cars were to be made in the Colony? Yes, certainly, that was a clear understanding, that they should be made in the country, as far as I understand the language of the

468. Are you aware whether this is being done? I saw some bogies imported, and that is I think contrary to the common-sense view of the meaning of the contract or understanding; it does not seem to

me like building them in the country if they are imported.

469. Have you read Mr. Wood's letter, page 6, No. 14, in which he says:—"The Department, I understand, wants rolling-stock, and no better or finer car for any freight purpose can be had than the patent scand, wants forming-scook, and no better of inner car for any freight purpose can be had than the patent screw-lever dump-car"—Did you ever see that before? No, I never saw that till I saw it in print.

470. What is your opinion with regard to his contention? I certainly disagree with it.

471. Did the Department require freight cars at that time? We always want more stock; that is the

usual expression.

472. How long previous to that were you called upon to report regarding the quantity of rolling stock the Department was likely to require? I cannot tell you from memory. I was asked or expected to report what was required in view of the making of a five years' contract, I think.

473. Is it not customary to obtain an estimate, from an officer in your position, of the requirements of the Department for the next year or three years? That principally refers to engines and not to other stock. Here the Traffic Manager, I think, is generally looked to as the officer who intimates to the Chief what stock is required.

474. Do you think the workmanship in these cars is anything like equal to Colonial work? pattern car it seems to me equal, as far as I could see from the casual look I had of it; I think the work

in the pattern car is as good as the Colonial work.

475. You said just now it was rough? Some of the iron-work is rough; it has not a nice finish, but there

may be strength enough in it.

476. Have you tested the strength? No. I thought of using the car once or twice for a purpose I had in view, but it was too wide for the Darling Harbour wharf, and therefore I could not use it. It looked weak as regards strength; when it was loaded it sagged in the middle—when loaded with about 18 or 20 tons of ballast from Penrith. I have never gone into any calculations of the strength of it.

477. Were you asked to go into any calculations as to its strength? No.

478. Has the new car been altered to provide for additional strength? No, it has not been altered in

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479. Do I understand that, as far as you could gather from the test with the gravel, it did not appear to be strong enough? I would not quite go that far, to say it was not strong enough; the fact of its having given down when the weight was in shows it is not trussed properly; the truss-rods might want screwing up; it depends upon the size of the truss-rods whether it is strong enough or not; but looking at it, I should say it was strong enough.

480. Does any of your rolling stock act in a similar manner? We have not much of that class of stock except the G waggons. This car (the dump) sags; the other (the G) hogs. It may be trussed too tight;

the sagging is not an evidence of weakness altogether.

481. Do you think it is a safe car to run over our mountains? It is risky to run a car fitted with that

481. Do you think it is a safe car to run over our mountains? It is risky to run a car fitted with that gear over the mountain line—over the curves especially. I should not mind on the straight line.

482. In your minute, dated 16/10/83, page 10, you seem to have some doubt:—"I saw Mr. Berner to-day re specification, as I thought he had slightly misunderstood the matter. As these cars are to be made to the sample vehicle now in our possession (except as regards buffer and draw-gear, a drawing of which we have sent to Mr. Carson Woods), we hardly want a specification. I think if we specify anything more than we have, it will amount to making working drawings of the car, and a specification to suit

suit, and as there will be a difficulty (with our double buffers, &c.) in introducing the dumping gear or mechanism, I think we should leave the matter to the manufacturers." What difficulties did you refer to with regard to the double buffers? With the continuous draw-gear it is necessary to take the daw-bar up the centre of the truck, and the dumping could not occupy the same place. In the specimen 29 Aug., 1884. car the dumping-gear is in the centre of the truck, and if we introduced the continuous draw-bar that gear would have to go somewhere else. That was the reason I preferred adhering to the pattern car rather than make a drawing; I thought it better for the inventor to do that, instead of me having all the trouble and scheming to do it.

483. You did not care to have anything to do with it? No; that was what I thought at the time. If I make a drawing of this with the continuous draw-gear it means a rearrangement of the dumping gear. It was their duty to introduce the draw-gear and buffers that we required into their car with their dumping

484. You did not care about taking the responsibility? Certainly not. If I had been ordered to do it,

of course I should have done it. As I have said, it means a great deal of scheming.

485. Had the order been given when you were called upon to make that statement? No; apparently it was about to be given. That was the matter on which I saw Mr. Berner; I explained to him what I am

486. I would like you to read No. 25, page 8, minute of the Secretary for Public Works:—"Mr. Woods' offer to build 200 dump-cars in the Colony at a price, delivered complete, of £190 each, may be accepted, subject to the following conditions:—That the cars are equal in all respects to the one now in the possession of the department; that they do not exceed the weight of the same; and that after delivery is complete the Government are to have the patent right for New South Wales for all cars they may build or have built by private firms." That is dated 28/8/38. Your minute to which I have just referred is dated 16/10/83, over two months subsequent to that. So that when you were asked for these drawings the order had been given, that is very evident? I think not. Mr. Wright says, "Mr. Woods' offer," it is only an offer. That minute, I take it, means that they may be ordered subject to a certain condition which has been ultimately settled.

487. Is it not usual, when asking an officer to report, to send all the papers referring to the matter? Yes; but you see between the commencement of this and the order being given Mr. Scott came into office

I commenced the business and Mr. Scott finished it.

488. What was your position at the time you wrote that minute of 16/10/83? I was then "Acting Locomotive Engineer." Afterwards Mr. Scott resumed duty.

Locomotive Engineer." Afterwards Mr. Scott resumed duty.
489. At what date did Mr. Scott resume duty? It was in July, 1883, I think—the latter end of June or the commencement of July.

490. What has been done with the sample car? Nothing. It has simply stood there as a sample car from

the beginning.

491. Why has it not been put in use? We could not couple it to anything else, because the draw-gear

is different. It is lower, and of a different kind. 492. Is it too wide? Yes, it is also too wide; but we might have used it for coaling engines if the draw-

gear had been suitable.
493. With what coaling engines? With my own scheme for coaling engines.

494. Mr. Poole. You have noticed the manner in which the body of the car is attached to the bogie-frame? Yes.

495. Will you be good enough to describe to the Committee the mode in which the body of the car is attached to the bogie-frame? There are two castings—an upper and a lower casting. The upper casting has what may be called a dowel in the centre, and, I think, a couple of teeth—one on each side. The lower casting has corresponding recesses in it to allow the dowel and the teeth to enter; the centre dowel, of course, is round, and the other teeth are rectangular in the usual manner. The chain which operates the dumping gear passes over pulleys, and these castings, which are segments of a circle, roll on one another, and the dowel and teeth keep it from sliding laterally. But I should say it is not a safe plan by any means, because a good sharp shunt would knock the bogic right out from under the car.

496. That is the weak point—that is your deliberate opinion—that with any rough shunting—? Any

rough usage

497. With rough usage there might be danger of the body of the car being dislocated from the bogie-frame? Yes, I think such a thing could happen with the specimen car.

498. So far as regards the liability of the car to dump over in transit, could that be got over by locking the dumping levers? Yes. In my opinion the lugs I referred to just now are too close together; I think they should not be less than 5 feet apart.

499. What is the distance from the centre of the dowel to the point where these lugs or studs are placed-

about 3 feet; that practically will be the base the car has to rest upon? Yes. 500. What distance are these studs from the centre of the dowel? I think the first tooth is about $2\frac{1}{2}$ inches, and then there is a second tooth about $4\frac{1}{2}$ inches from that. (The witness here explained by

501. Do you consider the side-rods of the bogie-frames sufficiently strong for the work to be done by the car—the outside coupling of the bogie-frame itself? Yes, I think that is strong enough, but the bar

might be a little thicker with advantage.

502. Speaking generally of the ironwork, you think it is fairly good, only rough, and fairly proportioned to the work to be done? Yes, taken generally. The truss-rods in the side doors look rather tender, and one or two little things about the corners are tender also, but I dare say you might prick the same holes in almost anything.

503. Then, taking a general view of the workmanship of the dump car as a whole, is it equal to the style of workmanship you require from our contractors? Yes, I think it is as good, taken as a whole, as what I have seen done in the Colony. I have not looked into the thing very critically, to find fault with it; it

seemed a fair reasonable job, as regards workmanship. The finish is not good.

504. If the Committee have been informed that the workmanship, as a whole, is considerably below the standard of that hitherto attained by the Department in Colonial work, that would not coincide with your opinion as to this work? No, I would not say that, except that the general finish of the ironwork is rough and cheap, but it is good fair work. The bogies do not seem to be kept altogether square. There

16

Mr. T. Midelton. are only two transverse beams to hold the bogie square; but as regards the weight of the car I think it

Midelton: is quite strong enough to carry it.

505. With respect to the use of these cars for general ballasting purposes, from your knowledge of what is required you could not recommend a car of this description? No, certainly not. If I were a con-

tractor I should not buy any, and therefore I should not recommend them to anybody else. 506. Mr. Poole.] Is it not the practice with contractors' ballast waggons, that they are fitted in the bottom with a series of small traps, some to deliver in the four-foot and some to deliver outside of the wheel-bose? Yes.

507. Is not an arrangement of that kind much more economical in the delivery of the stuff than it is possible to get by dumping a load, whether great or small, in one place? Certainly; because it is put where it is wanted without having to shovel it.

508. Mr. Chopman.] At the time of the trial you spoke of were you acting Locomotive Engineer? There were three trials, and I cannot speak now exactly as to the dates. On 2nd April, 1883, I was acting

Locomotive Engineer.
509. I am speaking of the trial at the time Mr. Woods introduced this car here? If I remember rightly,

Mr. Scott had returned when the first trial on the Botany Road was made. 510. Then you would not have been called upon to report? No, I was not.

511. The Locomotive Engineer, I presume, is the person who would be supposed to report upon the adaptability of the sample car? Yes, certainly; nobody would have such weight in such a matter as the Locomotive Engineer.

512. At a subsequent trial you were Locomotive Engineer? No; I was not Locomotive Engineer at

any trial.

513. Consequently you would not be called upon to report? No. When the first trial, and the other two that followed it, took place, Mr. Scott was in office; therefore if any report had been asked for he would have been applied to; that would have been the usual course.

514. The trials you speak of were prior to the ordering of £38,000 worth of these cars?

515. When Mr. Woods told you afterwards he had got an order, it was after these trials?

516. When you wrote your first minute you were acting Locomotive Engineer? Yes.
517. After that you ascertained that 200 cars had been ordered? Yes. It was after I had ceased

to be acting Locomotive Engineer that I learnt through Mr. Woods that the order had been given for more.

518. In opposition to your report? Certainly; I do not agree with the car; I have a better car of my own. 519. You do not know very much about the cars now being put up at the Government sheds? have only seen about twenty of the bogies.

520. You have given suggestions as to improvements that were to be made in them? Yes, I think the improvement which has been made was my suggestion; that the vertical support should be done away with, and something better should be substituted; I did not say what.

521. Are you aware that that has been carried out? I am aware an improvement has been made, one-half of which I have seen on the bogies; I do not know what the other half or upper part is like; as far nair of which I have seen on the bogies; I do not know what the other half or upper part is like; as far as I can judge from the appearance of the bogies it appears to be an improvement, but I cannot judge until I have seen the whole of it; it may be worse than the original.

522. Mr. Teece.] You will observe at page 6, number 15, a letter from Mr. Henry Hudson to you. Did you make an inquiry of Mr. Hudson? Apparently I wrote him a letter which is not here. As near as I remember I wrote him a letter asking him the question.

523. How came you to write him that letter? It was after hearing that some had been ordered.

524. You were of opinion that an order had been given nearly three weeks before the offer was accepted? I think it was put this way to me, that it was proposed to order more cars, and I think I was asked what

I think it was put this way to me, that it was proposed to order more cars, and I think I was asked what my valuation of the specimen car was, and also whether the cars could be made in the country for the same price. I think it was a suggestion of my own to ask Mr. Hudson what the firm would build a car for, and this is the reply.

525. Mr. Hudson's reply looks very much like the tender that was accepted three weeks after-£190?

Yes, £180 for the car, as per sample, and £10 for extra buffers.
526. Chairman.] What position does Mr. Bourn occupy? He is foreman of the carriage department and

inspector of new rolling stock constructed in the Colony.

527. Has he been long long in the Service? Yes, a great many years; over 25 years I think.

528. Is he considered a good judge of workmanship in rolling stock? Yes, I believe that is the general opinion; I think him a fair judge.

529. Will you examine the workmanship of the specimen dump-car, and be prepared at some future day to give the Committee an opinion on it? Yes.

530. Have you seen the new patent couplings that have been placed on some of our rolling stock, the Cowdery-Thomas' Patent, I believe it is called? Yes, I have seen that. Cowdery-Thomas' Patent, I believe it is called? Yes, I have seen that.

531. How many trucks are these couplings on? I think 200 were ordered, and I should suppose 90 per

cent. of them have been delivered.

532. Are these trucks being used? No, not generally; we are using a few. I am using a few from Darling Harbour to Sydney for coaling purposes. Newcastle coal is delivered into these waggons, and we use them to and fro between Sydney and Darling Harbour.

533. What has been done with the remainder? They are standing about in places.

534. How many do you think are standing about not in use? Roughly speaking I should think there

were over 130 at Eveleigh now.

were over 150 at Eveleigh now.
535. How long is it since they were delivered? It is over three months.
536. Why are they not used? I can hardly tell why. Mr. Richardson, the Traffic Inspector, who is in England now, once asked me my opinion about them, and I said, "Well, you can use them if you like, but you have not my authority"; and I presume on that conversation they have not been used.
537. What do you think of this patent coupling? I do not like it; I do not think it safe.
538. In what way do you not consider it safe? I think it is likely to uncouple with a heavy pull, and it does not seem to me a good mechanical ich as regards the design; it is not a coupling I should recommend

does not seem to me a good mechanical job as regards the design; it is not a coupling I should recommend or support; on the contrary, I have from the first opposed it; I do not think it is safe.

539. Were you asked for an opinion on it? No, I have never been asked for an official opinion on it

540.

540. You say you opposed it? I mean in my own mind; if I had been discussing the matter with anybody I should have opposed it; if anybody had supported it I should have taken the opposite view.

Midelton.

541. Has any accident occurred with this coupling? There was an accident to a train, and these waggons were in the train; that was not the cause of it I do not suppose; but it is a question for consideration what influence the according had in the accident and in the suppose. what influence the coupling had in the accident, and in what took place after the accident. There was an accident at Rookwood some time ago, and there were several of these waggons in the train, and it looked a remarkable thing to me that so many left the road; I do not think that with the ordinary chain coupling so many would have gone off the road. It stands to reason that that which will couple automatically will disconnect easily.

542. Have you ever reported about these trucks not being used? Yes, I have called attention to it in minutes about waggons, when we have been short of waggons; I have referred to our not having sufficient waggons: I have not specially referred to these waggons, because that would look as if I was trying to point to them directly. Some are used in some of the ballast trains, and I use a few in coaling; but

the others are standing still.

543. Mr. Poole.] Are the waggons you refer to at Eveleigh the ordinary waggons? They are the ordinary D waggons, with the Cowdery-Thomas coupling.

544. Mr. Chapman.] They cannot be used with any other coupling? No, not with ordinary couplings. 545. Is it a fact that the trucks were greatly damaged by this accident at Rookwood? Yes; they were

badly damaged, all the waggons. Some of them were out in the paddock close by.

546. How many waggons were there? I think sixteen, if I remember correctly.

547. What do you think the loss was in that accident? I suppose the repairs would cost £50 a waggon. I do not see that you could estimate them at much less. The axles have to be straightened and the

springs repaired, and all that sort of thing.

548. Mr. Poole.] You would almost have to make a new waggon? I would rather make a new waggon.

549. Was any damage done to the road? Not a heavy damage; that was done principally by the engine,

which ran off at the points, not by the D waggons.

550. Was anybody injured? No; they were empty waggons, fortunately.

551. Mr. Chapman.] Would the accident have occurred if the waggons had been loaded? So many of them would not have gone so far away from the road; if they had been loaded the chances are they would not have scattered about so much, but the accident would have taken place because the engine was crossing over at the points and ran into a train that was passing.

552. If they had been ordinary waggons would they have been damaged in the same way? Perhaps not

so many of them.
553. Mr. Poole.] The others would not have uncoupled so easily? No, they uncoupled and went in

Mr. George Bingham called in and examined:-

554. Chairman.] What position do you occupy? Foreman of the carriage and waggon department.
555. Have you seen the specimen dump-car? Yes.
556. What is your opinion about the workmanship? As far as the workmanship goes the timber is very rough, and likewise the iron work is inferior; the iron work is very rough too, so is the wood work.

557. Is it equal to the workmanship in the rolling-stock made in the Colony? No, I consider it is not.

558. Were you present at any of the trials? Yes, I believe at two trials.
559. What was the car loaded with at the first? I could not be positive on the first occasion whether it was askes or billet-wood. I was at two trials. We tried one with askes in June, 1883.
560. What was the result? It was taken down to the far end of Darling Harbour and dumped into the rubbish hole. About one-third came out and blocked the wheels—fell underneath the wheels instead of falling away clear—consequently we had to dig the ashes away from the wheels before we could move the car. After that it was brought up to the cattle siding near Parramatta and dumped again there. That was on the other side of the line. We dumped it again there, and before we could get it square we had to put a jack underneath it, and put it straight again. Then we brought it to the Sydney yard and left it there.

561. Was any damage done to it? No.

562. Did these trials take place over a bank? On the second time of dumping it it was on a bank. They, were filling up alongside the Parramatta bridge—what we call the cattle siding. There is a bit of a bank there. It was late in the evening when we went down there-about half-past 4-Mr. Midelton, Mr.

Bourn, myself, and a driver, and a guard.

563. Was there any other trial? Yes, there was another trial with billet-wood at Darling Harbour.

564. What was the result of that? It was dumped over, and I suppose there may have been from ten

to twelve pieces of wood fell from the top.

565. What weight was in the truck? I suppose from 18 to 20 tons.

566. What weight was thrown out? I do not suppose more than about 3 cwt. was thrown out; some fell out of the doors at the last of it and jammed the doors; but that was through the eye-bolt that holds the chain breaking; it went all at once—the eye-bolt that holds the chain that you dump it with,—it went over suddenly and thereby caused the door to jam; the wood got in between the doors and jammed it, and one of the doors was strained at the time.

567. Has the car been used since? I believe it has been loaded since then with gravel.
568. Were you present at that? Yes.
569. What was the result? We only got about one-third of it out with the dumping; that was on level

ground near Botany Road; on that occasion we had to get the jack to it o jack it back again.

570. Did you have to go through the same process as before to move the truck? No. Mr. Carson Woods and the reporters of the Evening News and Town and Country Journal were there on that occasion; it was done for them to see, and we left it there for that time, and I believe the permanent way men had to dig the gravel from underneath before they could move it.

571. Do you consider it a safe car to use? No, I do not consider it safe to run on the road.
572. In what way do you consider it unsafe? In the first place the block that keeps it from dumping, which you have to pull out of gear before you can dump it, if one of these happened to get away it would 1043—C

Mr. T. Midelton.

Mr. G. Bingham.

29 Aug., 1884.

Mr. G. Bingham. 20 Aug., 1884.

get out of gear; in the next place it has no king-bolt, but only two cambs—a camb on each side and a boss in the centre. If the bogic should happen to get off the road there would be nothing to prevent the body leaving the bogic, or the bogic leaving the body; it is only 3 inches deep where the socket enters the cap.

573. Do you think there is any danger of the car becoming detached from the bogie through any sharp shunt, or through going round a curve? In sharp shunting I believe it would.
574. Is there any other defect in the system that you have noticed? No, only in the way it is constructed. If it was put on our ordinary outside buffers I do not believe it would stand the shunting or knocking.

575. Even when it has the buffers? No.

576. Are you aware that the new ones are being made with side buffers? Yes.

577. Do you think that with the alterations that have been made there will be any more success than with the pattern car? No.

WEDNESDAY, 3 SEPTEMBER, 1884.

Wresent:—

MR. CHAPMAN, MR. FLETCHER,

MR. GARRARD, MR. POOLE,

MR. SUTHERLAND.

SYDNEY SMITH, Esq., IN THE CHAIR.

Charles Augustus Goodchap, Esquire, Commissioner for Railways, called in and examined:—

Çhas. A Goodchap, Esq.

3 Sept., 1884.

578. Chairman.] Do you remember writing a minute of the 2nd April, 1883, with regard to dump-cars? \mathbf{Y} es.

579. You say in that minute: "I have received from America some papers on the newly patented dumpcars in use there." Can you inform the Committee from whom you received those papers? I rather fancy this (paper produced) is the paper I received.

580. Who is it from? Well, I really could not tell you who it is from.

581. Can you inform the Committee who brought the matter under your notice first? I rather think it was Mr. Carson Woods.

582. Do you know Mr. Carson Woods' agent there? I do not.
583. Will you kindly look at number two of the printed papers—a letter from Mr. J. C. Dibbs in regard to these dump-cars? Yes, he writes as agent for the patentee, I see.
584. Who is the patentee? I do not know who the patentee is. There is a paper signed by Albert F. Sayers, general agent for the United States Car Company, and he says he is the agent—I presume the agent for the patentee.

agent for the patentee.
585. I find that Mr. J. C. Dibbs has written several letters in regard to this dump-car;—did you consider him the agent? I did; he signed himself as agent.
586. But you cannot say whether he first directed your attention to the dump-cars? No, I do not think he did. Either the papers came to me without any letter, or else Carson Woods brought the matter under my attention. I know he was bringing a lot of things under my attention at that time. He said he had travelled in America with the object of bringing under the attention of railway managers in Australia several inventions which he thought would be useful to the traffic on our lines; but I cannot be positive that he brought these cars under my notice.

be positive that he brought these cars under my notice.

587. The reason I ask you is that Mr. Dibbs' letter is dated the 2nd of April, and your minute is dated the 2nd of April? I see this is a letter of the 2nd April, 1883, forwarding "plans, photographs, and particulars of the latest improvement in America for the economical working of Railways in the United States Company's Screw Lever Dump and Coal Car." I should think I received these papers in that way

from Mr. Dibbs.

From Mr. Didds.

588. You think it must have been Mr. Didds, as agent for the patentee, who first brought this car under your attention? I really cannot say positively. It is evident he did by his letter of the 2nd April, bring this car under my attention, and that on the 2nd April I sent off some papers "on the newly patented dump-cars" to the Traffic Manager; whether they are the same I could not tell you, but I think very likely they are. It would be in accordance with my custom, if I got such a letter, to write across it, "Refer to traffic manager." In this case I should have probably written across the letter in that way; so that I force I might have get them from some other source. that I fancy I might have got them from some other source.

589. Did you refer these papers to the Traffic Manager for report? Yes.
590. What did you wish the Traffic Manager to report particularly on, with regard to these dump-cars?

Whether he could make effective use of them. 591. In working the traffic? In working the In working the traffic. I should do that pro forma, forming my own

judgment as to the value of these cars. 592. It is usual, of course, to forward all such papers to the Traffic Manager? Yes, to get his views

and opinions about them.
593. Do you look upon him as the officer responsible for letting you know what rolling stock is required?

594. Did you consider his report satisfactory? The report seemed to me to indicate that a profitable use

594. Did you consider his report satisfactory? The report seemed to me to indicate that a profitable use could be made of such cars; and so far it confirmed my own opinion upon the matter. If I may be permitted to make this suggestion, I should like my examination not to be restricted altogether to replies to interrogatories; but that I may be permitted to offer explanations in addition.
595. We are only too glad to receive any information on the subject? I should like to say, in connection with this matter, that the question of the tare and carrying capacity of our rolling stock had for several years prior to this received the greatest attention at my hands. I had from time to time brought the matter under the attention of the Minister, and pointed out how necessary it was that, when lines were constructed as our lines were, the greatest attention should be paid to the necessity of obtaining rolling stock which, while it would be strong and durable, would embrace the great desideratum of light tare

tare with full carrying power. Mr. Sutherland, when Minister for Works, devoted considerable attention to the matter, and impressed upon me from time to time the necessity of seeing that it was effectively carried out. I called several times upon the officers, whose duty it was to design rolling stock, with that view, and in my instructions to Mr. Scott, when visiting England and America—instructions issued on the 3 Sept., 1884. 15th June, 1882, fully six months before this particular truck was brought under my attention—I made use of these words:—"The importance in the economical working of railways, of the reduction of the tare of vehicles, and the increase of their carrying capacity, cannot be over estimated, and I wish Mr. Scott to direct his inquiries into this matter, especially in America, where the subject has received and is receiving so much attention. There has been recently patented there a design for carrying grain in cylinders, which are made to run on the rails without any framing; the heads of the cylinders are flanged and used as wheels. In view of the prospective increase of grain cultivation in this Colony for home consumption, and even for exportation, it is essential that every means should be sought to give cheap carriage to the seaport; and one of the greatest aids to this object will be to obtain rolling stock which embraces large carrying capacity with comparatively light tare." Well, that being my aim and my constant care, I was well pleased to find that in this car, which had been brought under my attention, there was a vehicle which, while it possessed the qualifications I had insisted upon, seemed in every way durable and strong. engineer officers who reported upon it took no exception to it on the latter score; and I found that, while it weighed only some 9 tons 17 cwt., it carried 20 tons. Alongside of that car, when I went to visit it at Darling Harbour, was another car, designed by the engineer officers of the Railway Department. Notwithstanding the repeated applications I had made to these gentlemen to give attention to this matter, in designing cars, I found that this G car, which seemed to be, mutatis mutandis, the counterpart of the dump-car, weighed 12 tons, and was designed to carry only 10 tons. I had to write then a rather severe minute to these officers, pointing out the utter disregard they seemed to have paid to my directions in

596. Have you a copy of that minute? I will furnish a copy to the Committee, if desired. Well, it seemed to me that a car of that description, without reference to its dumping appliances, although that seemed to me a very useful arrangement, and one that could be brought into operation when the necessary provision had been made for using it, would be of great service. At that time there was considerable public outcry respecting the inconvenience which producers and others in the country—people sending gravel from Penrith, coal from Lithgow, firewood consignors—suffered from the great want of trucks; gravel from Penrith, coal from Lithgow, nrewood consignors—sunered from the great wall of and in reply to my inquiries as to how it was so many trucks were required for locomotive purposes—for there were some two or three hundred devoted to this purpose—I found they were really being used as goal stages, because there was so much delay in getting them unloaded on to the stages. I then thought coal stages, because there was so much delay in getting them unloaded on to the stages. I then thought that apart from their merit as large carrying vehicles these dump-cars would be specially suitable for carrying the locomotive coal; and in pursuance of that idea I determined—subject, of course, to the higher approval which I always seek, the approval of the Minister,—to have the coal stages of the new works at Eveleigh, and the coal stages at Lithgow, so constructed as to be available for this special purpose of unloading coal by means of the dump-car. I asked, in view of my coming before this Committee, to have a plan drawn of the proposed coal stage at Eveleigh, showing in what way the coal truck would come up on the high level, discharge its coal on to the lower level, for the supply of the engines by means of smaller trucks. (Sketch handed in. See separate Appendix 1.). I would like to point out to the Committee how important it is to the effective management of railways that attention should be given to this subject of light tare and large capacity. A train of I would like to point out to the Committee how important it is to the effective management of railways that attention should be given to this subject of light tare and large capacity. A train of fourteen D waggons is considered sufficient for an engine to haul on our mountain grades and curves. The weight of a D waggon is 4 tons 13 cwt., and it will carry 6 tons of coal, which gives a gross weight in a train load of 149 tons 2 cwt., and allowing the tare 65 tons 2 cwt., gives an actual weight of 84 tons of coal. It will thus take (say) eleven trains of D waggons to haul 1,000 tons of coal, at a cost of £24 16s. per train, for the journey between Penrith and Lithgow. 70,000 tons of coal are annually required, and to bring this down 770 trains are necessary, and this represents a total cost of £19,096. With a train of dump-cars seven vehicles can be hauled, and these seven vehicles will carry 140 tons, or say seven trains for each 1 000 tons of coal. say seven trains for each 1,000 tons of coal. 490 trains will therefore be required to haul 70,000 tons, say seven trains for each 1,000 tons of coal. 490 trains will therefore be required to haul 70,000 tons, and, at £24 16s. per train, will cost £12,152, as against £19,096 in D waggons, thus showing a saving of £6,944. The weight of a D truck is 4 tons 13 cwt. = 4 65, and this divided by 6 tons, the weight of coal in a waggon, gives 0.775 the weight of waggon for every ton of coal hauled. For 1 ton of coal the gross load is therefore 1.775. The weight of a dump-car is 9 tons 17 cwt. = 9 85, and this divided by 20 tons, the weight of coal in it, gives 0.492 as the weight of waggon for every ton of coal hauled. For 1 ton of coal the gross load is therefore 1.492. With 70,000 tons of coal to be hauled in the year, we have with D waggons a gross haulage of 124,250 tons. With the use of dump-cars the gross haulage would only amount to 104,440, or an absolute saving of 19,810 tons, and this 19,810 tons represents a saving of no fewer than 132 trains of D waggons in the year. The wear and tear on the permanent way is no inconsiderable. than 132 trains of D waggons in the year. The wear and tear on the permanent way is no inconsiderable item in this matter. A train load of 84 tons of coal in D waggons represents the rolling of twenty-eight pairs of wheels, whereas the number of wheels over which 84 tons will roll in dump-cars is only sixteen pairs. There must consequently be very much less friction on the rails, and the saving in wear and tear must be a large item. It has also to be taken into account that there is less frictional resistance presented by the bogic form of carriage in the dump-cars, which reduces the power to be exerted by the engines in working on our sharp curves as compared with the same load in D trucks, which are without bogics. There will be a considerable saving in the numbers of waggon stock on the lines, because to haul the 70,000 tons of coal 11,666 D waggons would be occupied, while the same weight could be carried in 2,500 rehicles of the damp pattern. 70,000 tons of coal II,666 D waggons would be occupied, while the same weight could be carried in 3,500 vehicles of the dump pattern. A very material point is the difference in the expenditure of capital in rolling stock. The cost of seven D waggons, which will convey no more than two dump-cars, is £819, as against £380, the cost of two dump-cars. Then I should like to draw the attention of the Committee to the economy in the working of such trucks, besides the benefit they give in bringing a larger quantity of coal in fewer trains. The rails are not run over to the same extent, there are not so many wheels, there is not so much friction on the line, the whole rolling-stock is eased considerably, and the permanent way is not used to the same extent. Economy, by the adoption of such a system as that comes in on every side. A railway manager looking to the railway the adoption of such a system as that, comes in on every side. A railway manager, looking to the railway as a public benefit, does not alone think of the saving which will be effected to the Department; he has to look wider than that—to the saving which can be effected to the public who use the railways; for if the coal and the grain of the country, as I have said in my instructions to Mr. Scott-if all these things can

Chas. A. Goodchap, Esq. 3 Sept., 1884.

be brought to market at a cheaper rate, the country will get the benefit—(if the interests of the country can be separated from those of the Department)—the producers themselves will get the benefit of it. could see, at the time that these light cars with large carrying capacity were brought under our attention, that we had at last secured, apparently, a vehicle which was specially suitable to the requirements of our heavily-graded lines—that the principle contained in their design was a principle which I had long sought for, and which I knew a Minister of the Crown, who had taken an interest in these matters, had long looked for as a solution of the difficulty the Department had experienced in giving low rates of traffic to the public. I see in the report of a Committee on the carrying capacity of freight-cars, which is addressed to the members of the Master Carbuilders' Association in America, they say:—"The following are considered a few of the most important advantages that may be derived in transporting any given amount of tonnage:—Less cost of cars; less cost of repairs; less number of way-bills to make; shorter trains; shorter side-tracks; less coupling and uncoupling of cars; less damage to draw-bars and fixtures; less number of brakes to operate; less number of journal-boxes to oil; less number of springs, couplings &c.; less number of wheels to inspect; less train-men; and many other smaller advantages." It was considerations of this character which induced me to recommend the Government to order 200 of these dump-cars for use on our lines. I wished in every way to conserve the interests of the Colony, and I stipulated that the ironwork at least, as to which there could be no difference in weight, should be made in the Colony; it mattered very little, as regards weight, whether the ironwork was made in the Colony or made elsewhere; it would not weigh more in one place than in the other; but with the timber it was different. The specific gravity of the timber of this Colony is very much greater than that of the timber used in America. I did not stipulate that the timber of these trucks should be Colonial timber; for I feared that we might, by the increase of the scantling, owing to the comparative want of toughness of the Colonial timber, effect what I was desirous of avoiding, the increase of the tare of the vehicle. I should like to say that this question of a dumping-car was not brought] under my attention for the first time by the production of this model car. Years before, when there was such an outcry about the impossibility of quickly discharging the trucks at Newtown, owing to the want of siding accommodation there I made a suggestion that the lang hards which was by the side of the Newtown Station should be there, I made a suggestion that the long bank which runs by the side of the Newtown Station should be utilized for coal cellars. There was some difficulty in getting the Corporation of Newtown to close the road that ran alongside the bank, but I considered that if they would not close that road I could utilize it as an approach to these cellars; I asked Mr. Mason to design me a dump-car—I did not call it a dump-car myself, but at any rate the design was the same—to get rid, by some mechanism, of the load at once, and shoot it into these cellars, providing of course trimming plates, so that it should not suddenly descend to too great a depth, but that the coal should go at proper angles into the cellars. If dump-cars of this design had been brought under my attention, when I was endeavouring to find the means of providing greater accommodation at Newtown, I should have jumped at the proposal to take them, because, in addition to the large saving they would effect in the carrying of loads, they would have aided the Department considerably in meeting the demand for additional trucks by the speedy manner in which they would have been unloaded and returned again for use. In addressing you, sir, on this subject I am aware that I am addressing one within whoes personal knowledge these things occurred, and who is no doubt acquainted with all the circumstances. You will doubtless recollect that there was at that time a great demand for shale from the country, and a utilized for coal cellars. There was some difficulty in getting the Corporation of Newtown to close the You will doubtless recollect that there was at that time a great demand for shale from the country, and a large transaction was entered into for the export of this shale, but it came to a sudden termination owing to the difficulty of getting the shale from the trucks over the wharf at Darling Harbour into the punt and the difficulty the exporter of this shale had in getting ships of adequate size to come through the bridge at Pyrmont. At that very time, prior to these dump-cars being brought under our attention, a scheme was entered into for taking the land at Darling Harbour and for extending the wharf right away round to Goodlet and Smith's place, and the design then made for shipping shale and shipping coal, which was also spoken of as an immediately probable prospect, was so arranged that the cars could run upon a line of this character. I had always stipulated that the hopper waggon used on the Great Northern Railway by the coal companies should not be used over our mountains, as the mechanism was not of a character to be used with safety; but I had in view, as I explained to Mr. Mason, a truck which, while it did away with that disadvantage, would carry a design for emptying the trucks into the ships' holds, either coal or shale or anything of that sort. The design now made for wharves, if they should be carried out by the Government, on the opposite side of the Pyrmont Bridge, will be found to meet that purpose. It seems, though controlled in some degree by the rise and fall of the tides, that coal and shale and such material could be with greater advantage dumped into the holds of vessels than it would be either by hydraulic lifts or ordinary steam cranes.

597. On the 6th April you asked Mr. Midelton to report regarding these dump-cars? Yes. 598. What position did Mr. Midelton then occupy? I presume from my asking Mr. Midelton the was then in charge of the Department. If Mr. Scott had been here I should be the state of the department. I presume from my asking Mr. Midelton to report If Mr. Scott had been here I should have asked him.

599. Mr. Midelton was acting Locomotive Engineer? Yes.
600. As such do you hold him responsible for ordering new cars of that description—that is, as
to whether they are suitable for our lines? No; I hold Mr. Midelton responsible for seeing that the
rolling stock we have is strong and perfectly safe, and I also hold him responsible for designing cars to

carry into effect the wishes or the instructions of the Department.
601. Who do you refer to with regard to any design as to whether it is safe to run over the mountains? That is a point which I refer to the mechanical engineer—the Locomotive Engineer. The Engineer for Rolling Stock has to report whether they would be safe. That is the reason I referred this to The Engineer for Rolling Stock has to report whether they would be safe. That is the reason I referred this to Mr. Midelton. I see that in his report on the subject he says nothing whatever about the want of

602. Did you consider his report satisfactory, as regards the use to which the dump-car could be applied? Mr. Midelton stated that it looked satisfactory and promised well, but that it wanted some other appliance to make it complete. Well, I was quite aware of that; and, as I have explained to the Committee, it was the intention of the Department to provide these other appliances. They had already been applied in some instances, because at several places the bank at Darling Harbour had been made available for shooting coal down the side, as well as metal and other stuff; but the trucks were unloaded up to this time by the laborious method of shovelling the coal out of the trucks down the bank. I should like to refer the Committee to what is said in America on this subject:—"We submit an extract from a letter ON THE PURCHASE OF RAILWAY ROLLING STOCK.

written by the master car-builder of one of the oldest and best managed roads in the country, and who is considered a standard authority in the matter of cars:-

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'In answer to your question as to what is my opinion, as a practical car-builder, of the merits of the dump and coal car of the United States Car Company, I would reply as follows:—I have given the matter the fullest examination, and have proved its practicability for such purposes as it is designed, and in my opinion, it is certain to come into use rapidly, on account of its simplicity and positive merit. There is no complication about it which prevents its being easily worked by an ordinary person (brakenian), and requires only one man to operate it. At a recent trial of the car, one man dumped 25 tons of gravel from one car in less than 2 minutes, and in another instance two car-loads of coal in 3 minutes, and had the cars ready to return. Second: The construction of the car is so near like any ordinary car that those already built may be changed, and the patents applied at a small cost. In my opinion the car cannot be surpassed for the easy handling of coke, gravel, sand, ashes, logs, railroad ties, stone, and railroad iron, or anything of like nature, and in construction or repairs, ballasting, filling of tressel-work and the like. In my opinion, in the very near future, we shall rarely see the kind of cars now in use, for these cars will be substituted on account of the immense saving in the cost of labour. The principle is that of the common horse coal and dump cart applied to railroad uses; and it would seem as reasonable to expect coal-dealers to ask their men to return to the day of the control of the interest and it would seem as reasonable to expect coal-dealers to ask their men to return to the old method of shovelling out their load as it will in the future to expect coal and railroad companies to unload their cars in the present expensive way. It will give me pleasure to show and explain the working of the car at any time we may have one here, or give any information I may be able at any time you may call upon me.'"

603. Was any test made with this car? Yes, on one occasion I was down there when some sand* was put into this car and tested. It seemed to me to operate exceedingly well. It did not all tip out at once; but that was explained at the time to be owing to the sand being very wet when put in, and it hung together a bit; but there was no difficulty, I understood, in getting it out as soon as the parts could be separated.

604. From whom did you understand that there would be no difficulty? I think all those who were present at the time-Mr. Midelton, Mr. Read, and other gentlemen-said that seemed to be the reason

why it did not fall so rapidly as was expected.

605. Were they asked for reports regarding the test? No, I am not aware that they were; my object in

going down was to see it myself.
606. Did you consider the test satisfactory? Yes, I considered it very satisfactory. I could see for myself it would be a most advantageous way of working these trucks.

607. Is it not a fact that a great deal of the sand had to be moved away before the truck could be shifted? The place where it was unloaded was not at all adapted for such a purpose; the fall was not nearly enough. Of course in practical use there should be a slight elevation in order to make room for the gravel or the load to fall, and I have explained in that plan which I have submitted the method in which it is to be done.

608. Is it true a screw-jack had to be used to lift this car? I never heard so.

609. There was another test made with this car, I believe? Yes. 610. Were you there? I was only at one.

No. 611. You were not at the other two tests?

612. Were they considered official tests? No, I think not; I think they were for the convenience or satisfaction of some persons from other railways, if my memory serves me. I think I directed that the method of operating the car should be shown to these gentlemen. I believe that on one occasion some long firewood was put in, and it was reported to me that, owing to the flaps of the car getting wedged in with one or two of the pieces of wood, it did not run quite so freely as it should; and I pointed out to the Traffic Manager that it was not adapted in any way for wood of that kind. The dump-car for wood is a dump-car without sides like this (exhibiting sketch.)

613. Do you remember any test being made with ashes? No, I do not think I do.
614. Was any report asked for after the test from any of the officers? No, I had received all the reports that I required. I had Mr. Midelton's report, which showed me that these cars would be specially suitable for the purpose for which I intended them, with the exception that he said he could not agree with Mr. Read that they were available for locomotive coal traffic. I was aware that Mr. Midelton had some scheme of his own for the coal traffic, depositing the coal on the ground and picking it up by means of a crane and putting it on the tender—a scheme which met with the approval of neither Mr. Cowdery nor Mr. Scott (Mr. Midelton's superior officer); and from inquiry I made it seemed clear to me that the time that would be occupied in such a method of loading the tenders would be altogether too great.

615. Mr. Carson Woods, in his letter of the 6th August, 1883, says he understands the Department wants

rolling stock, and no better or finer car for any freight purpose can be had than the patent screw-lever dump-car. Do you think it could be adapted for general purposes? I should think not; I should think it would be most absurd to attempt to dump ordinary merchandise from a car of that character; I should

think a case of glass, for instance, might come to grief if it were dumped.

616. Before this order for 200 cars was given to Mr. Carson Woods were any officers referred to as to whether this car was safe? That was the object of referring in the first instance to Mr. Midelton. The minute is: "Mr. Midelton for early report." I wished to know from Mr. Midelton whether it was a car that would be suitable as regards its stability and working parts for our traffic and for our lines; and I was particularly careful, in making this contract, to stipulate that the cars supplied should be to the satisfaction of the Locomotive Engineer—that all its details as regards its draw-gear and its buffer arrangement should be in strict accordance with the requirements of our Locomotive Engineer. If it should turn out that this stock has not been supplied to the satisfaction of the engineers—if they have any doubt as to the stability of the draw-gear—it will be their duty to bring it under my attention, and I shall call upon them to show cause why they did not provide for the due stability of all these working

parts.
617. Were the officers concerned made aware of your desire to have 200 of these cars manufactured? am not aware that I specially referred the matter to them. I referred the matter in the first place to the Traffic Manager to know whether he could make use of such trucks; and I then referred the matter to the engineers to let me know whether there was any objection to any of the working parts of such a truck. I formed my own conclusion as to the advisability of getting the trucks, having satisfied myself

from these reports that they could be made of great use to the Department.
618. Mr. Midelton in his report says:—"But when I fully consider the matter in its various manners of application I really cannot see much in it to recommend." Can you tell the Committee in what way he

^{*} Note (on revision):—I have ascertained since giving my evidence that it was other than the "sand" test at which I was present. My recollection of the test must have been derived from the reports made to me at the time.—Ch. A.G., 14/9/84.

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could not-see much in it to recommend? No, I could not. It seems to me that there are several matters in his report which might be criticised adversely. This gentleman says, "If coal could be dumped direct in carts so that it could be hauled away to the coal yards and then dumped again," then he would recom-3 Sept., 1884. mend it. I am rather amazed to find that an engineer should propose to dump 20 tons of coal into a cart on the common road; I do not see how he could consider that an advantage, or indeed how it could be done.

be done.
619. Was he asked to explain? No, I did not ask him to explain it; it did not seem to me to be necessary. As I explained to the Committee I saw where the advantage of these dump-cars would come in. Mr. Midleton says:—"If we could dump kerosene shale from these waggons direct into a ship's hold at Darling Harbour there would be an advantage." That was my proposal, not only kerosene shale but coal; but they commended themselves to me as specially valuable for locomotive purposes.
620. You mentioned that you thought they would be adapted for Eveleigh and Eskbank? Yes.
621. Do you know what quantity of coal is required for loco purposes, both at Eskbank and Eveleigh? I know we use about 70,000 tons of coal from the mines up there, brought down, some of it to Sydney some as far as Granville to go up the Southern line. We use a good deal on the Southern line, and a good deal on the Western line beyond Eskbank. I think the consumption of coal from the district is about 70,000 tons a year altogether: and in estimating the saving from the use of these trucks at

about 70,000 tons a year altogether; and in estimating the saving from the use of these trucks at £6,994, say £7,000, a year, I have adopted that as the quantity of coal to be handled. Of course that is merely a calculation showing the advantage of large carrying capacity in conjunction with light

622. I think you stated that you did not think they would be suitable for the wood traffic? I should not

look upon that particular car as suitable for the wood traffic.
623. Was it not understood that these cars were to be made in the Colony? Yes, unquestionably; that is with some variation as regards the timber to be used in the trucks. The wheels, axles, and those things of course would have to be imported; but I expressly stipulated that the ironwork for the underframing was to be made in the Colony; and that was stated in the instructions to the Crown Solicitor for the

preparation of the bond.
624. Is there any minute with regard to the wood and certain parts of the ironwork not being made in

the Colony? No.

625. Was not Carson Woods' offer accepted on the understanding that the cars were to be manufactured in the Colony? The cars were to be built in the Colony. What was really in my mind at the time was that the cars should be made in the Colony—that the ironwork should be made here—that these people who accepted the contract would have workshops here, and build the cars here—that they might import and they might import the wood of course.

the Colony. I was particular about that, because I wanted them constructed here.

627. Chairman.] Are they carrying out that part of the contract? Well, I have received a report a day or two ago, from the Locomotive Engineer, from which tappears they are not carrying it out.

628. What do you propose to do under such circumstances? I have no objection to tell the Committee that I shall being the matter under the attention of the Minister. It will centainly be my duty to point.

that I shall bring the matter under the attention of the Minister. It will certainly be my duty to point

out to the Minister that there has been a departure from the terms of the contract.

629. Where are these cars being landed? I am not sure, but I think at Darling Harbour.

630. Do you know at what place they are being put together? I believe that Carson Woods has leased from the Public Works Department a portion of the land that was recently taken for wharfage purposes at Darling Harbour—I think the old Atlas Company's Works—where the Atlas Company used to make their locomotives. I know Mr. Carson Woods came to me and asked me if I would lease him that piece of land, and I pointed out that it was not railway land—that the land was taken under a different Act; and that he would have to go to the Under Secretary for Works to assert in whether he could lease it or and that he would have to go to the Under Secretary for Works to ascertain whether he could lease it or

631. You stated in your explanation that you thought it desirable to have a lighter car constructed in order that it might take a larger load. Was it not possible to have such cars constructed in your ordinary class of rolling stock? In giving the orders for the construction of the G waggons I had anticipated that the engineers would have carried out that instruction in the design; but to my amazement they produced a truck that was absolutely worse than the ordinary D waggon; for while the D waggon weighed 4 tons 13 cwt. and carried 6 tons, this car was presented to me on the first occasion, weighing 12 tons and only

carrying 10 tons.

632. Is it true that a greater quantity than 10 tons has been loaded in these G trucks? Since I wrote my minute they have altered the truck; they had put springs under it not at all adapted for goods stock, though admirable for railway carriages, which, though they weigh a good deal, are only called upon to carry some 4 or 5 tons of passengers. They had unwisely put these springs under this G waggon. I pointed out to them at the time the admirable method by which the weight of the dump-car was taken; and Mr. Scott subsequently reported to me that he had made an alteration in the G waggons, by which the weight was decreased some few hundredweight—I think they weigh now 11 tons 18 cwt.—and the carrying capacity increased to 15 tons.

633. Could not a truck be constructed here as light as the dump-car and to carry the same weight? We have not succeeded yet, notwithstanding my repeated expression of my views to the engineers, in constructing a car of that character; and I was glad indeed to get a car which presented such admirable prostrices of light toward reset as a light as the dump-car and to carry the same weight? We

portions of light tare and great carrying capacity as does this dump-car.
634. Would not a car constructed similar to the G waggon carry the same quantity as the dump-car, provided it was made of light material as you suggest? I cannot say exactly. I should think the underframing might be made considerably lighter than the under-frame of the G car. The bogie is heavily constructed in the G waggon.

635. Who designed the G truck? I was so disappointed with it that I did not inquire; because I did

not wish to aim at anybody in particular, but I wrote a very severe minute on the subject. 636. Do we understand that previous to the receipt of this dump-car you had in view the desirability of constructing larger cars to carry more weight than the ordinary D trucks? Yes; the records contain many directions of mine on that subject.

637. Independent of the dumping operations, you had already provided for constructing a car to carry as great a weight as the dump-car, although in your opinion the material was not of so light a description?

The design did not carry out the direction in any way and did not effect the object in view; we have a vehicle in the G truck which weighs considerably more in proportion to its carrying capacity than the D

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638. The difference in the dump-car and the G-car is in the proportion of weight to carrying capacity? 3 Sept., 1882. Yes; the G-truck, as I said before, weighs 12 tons, and carried 10 tons, now 15 tons, and the dump-car

weighs 9 tons 17 cwt., and carries 20 tons. 639. Could not a car of the G class have been made to carry the same quantity as the dump-car? Up to

this time the engineers have failed in giving us such a car. 640. Mr. Garrard.] Has the carrying capacity of the G-car been increased since the arrival of the dump-car? Yes.

641. Chairman.] Can you give the Committee any opinion with regard to the workmanship of these dump-cars—the material, the ironwork, or the woodwork? No; I understood from the report of Mr. Midelton that there was no exception to be taken to it at the time I called for his report, and I stipulated, when the contract was entered into, that in every respect the working parts should be to the satisfaction of the Locomotive Engineer, who was to see that the draw gear and everything connected with it was made in accordance with our own rolling stock. I also drew the attention of Mr. Carson Woods himself to what seemed to me to be a blemish in the truck in regard to the machinery for dumping, it being liable to act automatically, and I thought it better that, instead of the kind of fastening that was used to attach the under frame to the upper frame, a king-bolt would have been more serviceable; and I told him at the time that the Locomotive Engineer would certainly reject these cars if they did not attain safety of this—that there is a king-bolt attachment.

642. What position does Mr. Bourn occupy? He is under Mr. Midelton, as overseer or foreman of rolling stock. working in that respect. I believe that in the cars that have been sent out provision has been made for

643. Does he give general satisfaction? I believe he is a very good man indeed.
644. Is he competent to form an opinion with regard to the workmanship or safety of these cars? I should not look upon him as a man who has a large designing capacity

645. I mean as regards the quality of the work, and whether it would be safe? Yes, I should say he

could offer a valuable opinion as to the working appliances of any vehicle.

646. Is Mr. Midelton able to do likewise? Mr. Midelton is a gentleman who I think allows his prejudices sometimes to warp his judgment. In my experience he has never thought well of any contrivance, any scheme, any design, which did not emanate from himself. If any other engineer in the Departments suggests anything he will pull it to pieces, to show that it has defects; and therefore I should always receive cum grano salis Mr. Midelton's opinion of designs that did not emanate from himself.

With that exception I think Mr. Midelton is a your competent opinion and always receive cum grano salis Mr. Midelton is a your competent opinion and always received the competent of the competent

With that exception I think Mr. Midelton is a very competent engineer and a very valuable officer.
647. He thoroughly understands his business? Yes, I think he understands it theoretically and

practically.
648. Could be give valuable information as to the safety of this car? I am quite certain be could, if he

649. Has he any prejudice in this matter? I never heard him express any views on this subject, but I know generally that is his character; and not only in this Department,—I have heard of it when he was in England and in Tasmania,—that wherever he has been, his great defect has been fault finding with the designs of others. It may be beneficial—good criticism is always beneficial—and may be the means of remedying defects and detecting errors, but

650. Mr. Scott;—is he an officer to be relied on in a matter of this kind? Yes, unquestionably.
651. Mr. Bingham;—what position does he hold? Mr. Bingham is foreman of carriage rolling stock.
652. Is he a reliable man? Yes, I should say very reliable.

653. Quite competent to give this Committee an opinion regarding these cars with reference to their suitability for our lines? As regards the mechanism, yes. I rely upon these officers to see that we do not get cars, whether from local or foreign manufacturers, of a character that will not be suitable for our lines; I specially refer these questions to them for their opinion as to these matters alone, not as to whether in other respects a car will be suitable—I form my own judgment upon that.

654. Were any reports asked for or given regarding the sample dump-car, other than those in the printed papers? I asked Mr. Midelton for that report. Of course I should not obtain the report of any officer subordinate to Mr. Midelton, but I should think he would fortify his opinion by consulting his officers. 655. Did you consider it necessary to ask Mr. Midelton, or any other officer, for any further report con-

cerning these dump-cars after the trial? No.

656. Mr. Bourn, in his minute of 29/12/83, says:—"I beg to report that previous to the dump-car being allowed to be used by the Traffic Department it is necessary that it should be taken to pieces and reconstructed, as at present it is too wide and will not pass the platforms. It also requires to be fitted with buffers and draw-gear, to suit the present rolling stock now in use"? That is quite right; it was quite understood that would be so. It came here with a central buffer, and none of the draw-gear was capable.

Of course everybody knew that would require to be

buffers and draw-gear, to suit the present rolling stock now in use"? That is quite right; it was quite understood that would be so. It came here with a central buffer, and none of the draw-gear was capable of being used with the rest of the rolling stock. Of course everybody knew that would require to be altered. It could be altered at an expense of some £25 or £30, I believe.

657. In a minute of 25/1/84 you said:—"It had better be made to suit the requirements, in order that those to be supplied may be made suitable." Do you know if any action was taken? It was pointed out that it had better not be altered, inasmuch as it was a sample car, and it had better remain there in order to be en évidence of the conformity or otherwise of the cars that were to be made to it. There was no great advantage in using a single car in this way. If there had been sufficient to form a train load, and I could have sent them up to Penrith for the gravel there, I should have been properly dumped use of them. and should have constructed a siding by which the gravel could have been properly dumped use of them, and should have constructed a siding by which the gravel could have been properly dumped

658. Mr. Poole.] You have objected to the use of the hopper coal cars on our mountain line? Yes. 659. Will you state why? Because I do not think the mode of fastening is a safe one; I dare say it is safe in itself if properly fastened, but subjected as we are to carelessness on the part of men in doing these things, I would not have an appliance which might lead to an accident.

660. Will not that very objection hold with greater weight in respect to the dump-car, seeing that the bogic frames are only connected with the body of the car by these two dowels or knuckle joints upon which the dumping is made to hinge? I certainly should think it would be a defect, and pointed it out at

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the time as likely to be a defect; and I stipulated that the mode of fastening the upper frame to the lower frame of the truck should be of a more effective design, but that again I left to the engineers to The objection should have come from them in the first instance, and I am certain they would not receive cars which were made in an unsafe manner.

661. If it should turn out then, when the cars come to be put together, that there is no possibility of providing for the safe connection between the upper and lower frame, except by doing away with the power of dumping, then that, in your opinion, would be a fatal objection to the use of the cars? a fatal objection, because, as I have pointed out to the Committee, the car is a most valuable car even without the dumping arrangement, because of its light tare and great carrying capacity. It is the best car we have on our lines even as a fixed car; but if it should turn out that the mode of attaching the upper to the lower frame is not perfect, I should think our officers would be to blame, for the necessity was impressed upon them, and it was stipulated in the contract, that everything should be done to their

662. But for general purposes the fact of the doors of the car being hung at the top instead of at the bottom would militate against the profitable use of the car in loading and unloading? That could be easily overcome. If it were determined to use these cars as fixed bodies only, a difficulty of that kind could be easily removed.

663. The dump-car is supposed to dump a load of from 18 to 20 tons? Yes.

664. And these smaller waggons shown in that sketch would take the whole of those 20 tons? There

would be sufficient in one of these trucks (referring to sketch) to load one tender.

would be sufficient in one of these trucks (referring to sketch) to load one tender.

665. I gather from your remarks that the prime advantage to the Department is, that you have a far less number of tons of tare or dead weight in relation to the freight or paying weight? Yes, that is one of the great advantages we expect from these cars. I do not say it could not be effected by making the G cars as light, but we had not effected it up to that time; and I should like to draw attention to the fact that while these cars possess this advantage over the G waggon, the G waggon costs £289 7s., and the dump-car £190. There is a saving of (say) £100 per truck, and yet we have a more effective truck, even supposing we do not make use of the dump apparatus.

supposing we do not make use of the dumping apparatus.

666. Independently of the mere quality of workmanship, I think I understood you to say practically that you accept the responsibility of ordering these cars, in relation to their design, and, as you conceive, to their general usefulness in the Department? Yes, as far as recommending I take the responsibility of that, as the officer who is charged with and responsible for the proper administration of the Railway Department; it being, in my opinion, one of his most important duties to see that the traffic is economically worked, not only for the advantage of the Department but for the advantage of the public, who look

for good service at a cheap cost.

667. The officers who have reported to you on the matter were simply asked to give their opinion as to the mechanism and the quality of the workmanship? Mr. Midelton certainly. As to the Traffic Manager, of course I fortify my opinion by his view. If Mr. Read had reported to me that he could not make effective use of these trucks, that they would be of no service to him, I should have considered it necessary to have an interview with Mr. Read upon the subject, and to have pointed out to him that he was in error—that this was the very vehicle we had been looking for for years, and that in our requirements for the future it would be a most admirable vehicle. I do not think that an officer who is charged with the administration of the Department should be influenced altogether by the views of his subordinates.

668. Do I understand that the £7,000 annual saving that you expect to derive from the use of the dump-cars is a saving upon these 200 cars if they are brought into use? No, I have not spoken of it in relation to any particular number of cars. I want 70,000 tons of coal from the Lithgow mines, and I estimate what it will cost us to bring it down in D trucks and to bring it down in these cars, and the

saving is shown in the number of cars required to do the work.

669. The saving would be in dead-weight hauling? Yes. For instance, we should require 11,666 D waggons to carry that amount of coal, and we should only require 3,500 of the dump-cars to carry the same amount of coal. It is easily to be seen where the saving comes in in every respect—a less amount for lubrication, less amount for friction, less amount for keeping in repair the permanent way, fewer wheels running over the line. It is not alone here that this matter is considered important. Associations in America of the best car-builders are always consulting one with the other to get the best supply of vehicles—to reduce the tare and increase the carrying capacity.

670. I suppose it will be necessary to make special provision at at least one of our stations, where you desire to use the dump-cars, to enable them to tip their loads with reasonable facility? Yes. But you will understand that the dumping appliance could not be used generally; there will be only a few terminal stations and ports of shipment where it could be used. It will not be necessary to erect such stations where only a light load is required occasionally.

671. I think the Committee may fairly gather from your answers and general remarks that unless you yourself and your engineer officers are thoroughly satisfied that the connection between the body and the bogie-frame is safe from a running and shunting point of view you will not feel justified in accepting the cars? Our engineer officers ought to have made provision for that. They are to be made to the satisfaction of the engineer; but I should certainly think that the engineer ought to have seen to that prior to the cars being made; and he would have seen to it if my intention had been given effect to, that the rolling stock should be made in the Colony, because he would have had an officer on the spot to watch the

work as it proceeded. 672. I think I understood you to say that prior to the order being given you had pointed out the weakness in this respect and the necessity for having a king-bolt right through the frames? It was a suggestion

amicus curiæ I might say. I did not set myself up as an engineer advising how it should be done, but in conversation with Mr. Woods I said that point would have to be specially considered.

673. Is that embodied in any formal document between the Government and the contractors? No, because it was covered by the general stipulation that in all respects the cars should be supplied to the satisfaction of the engineer.

674. Suppose the contractor considers that he is in no way bound to make this extra work, and declines to do it, what position will you be in then? The engineer will not certify for the proper construction of the car.

675. And outside all this, there is the breach of the general or main condition that the cars were to be made in the Colony? Undoubtedly. I certainly think there is a breach there. If, as I am informed, the ironwork

ironwork is constructed out of the Colony—that nothing has been done within the Colony, and nothing is proposed to be done but simply putting the pieces together—I should certainly consider that a breach

Goodchap, Esq.

676. The wheels under the pattern bogie car are chilled cast-iron wheels, block wheels in fact? 677. Do you consider them as safe for our mountain traffic as the type of wheel you have in general use, solid cylinders with a steel rim? Yes, I think they are as safe; but I do not think sufficient attention is

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paid in America to making the wheels perfectly cylindrical.

678. They are not screwed up properly from the centre of the axle? No; and that is a fault found with these chilled wheels, even in America itself. The attention of manufacturers has been called to the necessity of paying more attention to this point; but the chilled iron is considered to be a good material, a lasting and durable material, and as many miles have been run with chilled iron wheels as have been run with ordinary wheels with steel tires, with this advantage that when the chilled wheel is worn down below the chilling they will admit of a steel tire being put on.

679. Is it not a matter of common observation that once the skin of a chilled wheel is worn through the remainder of the spread of the wheel is thrown away? Yes; but the chill penetrates to the extent of §

of an inch, and it takes a long time to wear that down.

680. Taking a connected view of the whole matter—our mountain roads, the trucks themselves, the grades, the curves, and all these matters combined—do you think the chilled wheels will be perfectly safe wheels to use upon these lines, with heavy weights such as you propose to use on the double bogies? I should certainly prefer the ordinary wheels, but I do not anticipate any danger from the use of the chilled iron wheels. Their durability probably is not so great, because the friction of the iron break upon them will be so great that they will wear rapidly.

681. I think I may take your answer on that point to be that you would rather pay the difference between the cost of the two kinds of wheels for the sake of the greater safety of the wheels ordinarily in use?

Not the greater safety, the greater durability.

682. You anticipate no danger whatever from the use of these trucks, looking at them altogether as we now have them, with a new connection between the truck and the bogie frame, in running round our mountain curves? If our engineers have done their duty there can be no danger whatever.

683. Mr. Fletcher.] I notice that in one of your minutes, number 31, you have made a special stipulation that the whole of the metal work should be manufactured in the Colony;—do you know if that is being done? I have not received any report upon that subject; I know nothing of it officially; but I have been given to understand that all this work has been imported.

684. If it has not been done it will be a clear breach of contract, will it not? Yes; I shall certainly

bring it under the attention of the Minister.

685. In the use of these dump-cars it will be necessary for you to have an elevated road for the cars to

run on? Yes, either an elevated road or a sunk track.
686. Chairman.] You mentioned the difference in price between the G truck and the dump-car;—can you inform the Committee whether the description of work is equal in all respects, as regards safety and quality of workmanship? No, I do not know that I could compare the two. As regards the quality, in the sense I point out, I prefer the quality of the dump-car.
687. Has the bond been signed? I believe not. I was making inquiry about that, and it seems Mr. Woods left for America before the bond was ready.
688. Have you got him bound sufficiently? He will have to sign the bond before he receives any money; he gets nothing on account before he signs the bond.

689. Do you expect to receive a report in regard to whether the dump-cars are made in the Colony?
690. Will you furnish us with that report? I will. (See Appendix.)

FRIDAY, 5 SEPTEMBER, 1884.

Present:-

Mr. CHAPMAN, Mr. GARRARD,

Mr. SUTHERLAND, Mr. SUTTOR,

Mr. POOLE.

SYDNEY SMITH, Esq., IN THE CHAIR.

Henry Hudson, Esq., called in, sworn, and examined :-

691. Chairman.] What is your business? Contractors and general timber merchants. Contractors for H. Hudson. the supply of rolling stock to the Government; that is one branch of our business. 692. Are you contractors at the present time? We are.

693. Do you remember being requested to tender for a supply of 200 dump-cars? I do. 694. Will you inform the Committee of the particulars regarding that request? Well, Mr. Midelton, who was acting Locomotive Engineer at the time, sent for me to his office, and I went there and he said that he wanted me to give him a tender for 200 dump-cars similar to one that was standing on the siding at the time. I went into the matter and gave him a tender, and I pointed out that there would be some alterations required to suit our stock, because they could not couple up. I submitted a price to him for

the supply of 200 cars.
695. What price did you submit? I think it was £190 each.
696. Do you know the result of your tender? I know that we did not get the order; that is all.

Were you spoken to again on the subject by Mr. Midelton or any officer in the Department? but I made some inquiries myself as to whether it was probable that we should get an order, and they said they did not think so.

698. Did you examine the dump-car prior to your giving a tender? I had seen dump-cars in Boston when I was in America three years ago, long before they came here.

699. Will you give the Committee the opinion you formed regarding those cars? I was invited by the inventor to witness a trial of a dump-car a little way out of Boston, on the Boston and Albany railroad. I was asked what I thought of it, and I said that I did not think very much of it. They pointed out that

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H. Hudson, it was going to be of immense value there because portions of Boston lay below the water level; and the consequence was that a portion of the siding was raised 2 feet 6 inches, and these cars were formed ostensibly for removing sand from an adjoining hill and filling up this low portion of Boston. They pointed out that it would save a great deal in cartage, and I said "no doubt"; and they wanted to know if I would use my influence to get them introduced here on what they called the Australian railways. I said that I did not see anything in it, and that I did not see that I could take them up at all. They offered me a share in the profits; but I pointed out that our tracks were boxed up level and that there was no possibility of using them, and that I would not entertain their proposal. was no possibility of using them, and that I would not entertain their proposal.

700. Did they name any sum for a patent? No; I threw cold water on the matter, and I would not entertain their proposal at all. I was invited to witness a further trial, but it did not suit my convenience

to attend as I was just about leaving Boston and I did not see any more about the car.
701. What was your opinion about the car? I thought it was suitable for the purpose there designed, which was for having a track raised above the level and making up the ground to the level of the sleepers, but I do not think it would be useful on a railway where the track and the platforms are all laid out for rolling stock which you have to discharge on a level with the platforms? Of course I could not see that they could be used here at all, because in dumping a load one portion would run on to the middle of the road, not clear of it.

702. Is this car used on the American lines generally? I cannot say; it was not then. The trial I

witnessed was the first or second that was made.

703. At the trial you witnessed did the car throw out all the load? It was loaded with sand and it threw out pretty well all, because the track was raised above the level of the ground.
704. Have you seen the cars now being imported? I have not.
705. Were you present at the test of a dump-car here? Yes, I saw one trial of the sample car about a

year ago.
706. What did you consider the result to be? I thought that it was quite a huge failure. They did not dump all the load—not half the load—the way I saw it.
707. What is your opinion about the patent? I do not think much of it. I would not give anything for it myself. I might have had it if I had liked two or three years ago, but I would not give anything for it.
708. For what sum could you have obtained the patent? I would have required something for taking it up rather than pay anything for it. I was urged to take it up and to try and introduce it here and I would not have anything to do with it.
709. What do you think of the workmanship in the sample car? I do not think very much of it. I

709. What do you think of the workmanship in the sample car? I do not think very much of it. I know we have to do our work a good deal better than that which is shown in that car.
710. Would the Government pass work of that description if you did it? I do not believe the Government would ask us to build anything like that. It is quite different from anything they have built—a different style of work altogether.

711. Mr. Chapman.] Who was it asked you to give a price for building the cars? Mr. Midelton wrote to me asking me to give him a price. He was Acting Locomotive Engineer during Mr. Scott's absence.
712. Did he tell you 200 were required? Yes; I think the tender was for 200. My own impression was that when I tendered they would not have them done.

713. Did you receive a communication verbally or in writing from Mr. Midelton? To the best of my recollection I think it was a memo., asking me to call at his office, as he wanted to see me. The memo. was left at my office some time in the morning; and I did not go home until 1 o'clock, and I went to Mr. Midelton soon after 2 o'clock.

714. Your tender was in writing? Oh yes.
715. Mr. Garrard.] You are of opinion that if an elevated track were provided these cars would have been a success? Yes.

716. With a track elevated to the extent of only 2 feet 6 inches? It would be a success in this respect: that it would not discharge a portion of its load in the centre of the track as it does on a level road; the load would be likely to fall clear of the track. What I thought a failure in the trial was, that a portion of the load that was dumped had to be shovelled away before they could shift the car. That was on the

Botany road siding.
717. The first trial which you witnessed in Boston was on an elevated track of 2 feet 6 inches, and was a

success in your opinion, but the trial you witnessed here was a failure? Yes.

718. Are these cars used in America for any other traffic? I never heard that they were; they certainly were not when I was there. I saw, I think, the second trial of them, and that was done with the first

719. What was the car at Darling Harbour loaded with? Gravel. 720. You did not see a trial with firewood? No, I did not.

721. Do you think that the car would be suitable for carrying and dumping firewood? I should not think so. If you attempted to dump a truckload of firewood you would have the billets running out at all angles; and you can understand how that would lead to blocking.

722. Do you suppose that the centre posts would interfere with the discharge of any long material? Yes.

723. You have not seen the cars that are being imported? No, I have not.

724. As a practical car-builder, what is your opinion of the specimen car, as to its safety in travelling over our lines? My opinion is that it is not safe. It simply rests on a ball and socket joint. Going round the curves a carriage will often oscillate that is supported at each end on elliptic springs. This car is simply retained in position by check chains, and if it is to carry 12 tons, and gets a sway on it, like some of our carriages, I don't think it will be very safe.

725. The price that you gave in for building 200 dump-cars of this pattern was independent of any money that would have to be paid as a royalty to the patentees? I did not consider the subject of royalty.

726. It was merely for the production of the cars? Yes; I did not think the thing was patented here.

727. Was your price for work similar to that in the specimen car? Yes; except that I should have to do them better

728. Would you copy the defects—you would only do that which you were bound to do by the terms of your contract? I said to Mr. Midelton that I did not suppose they would call for tenders, and that they simply wanted to ascertain the value of the car.
729. Was there only one centre buffer? Yes; it was just the American freight-car pattern, in which the

draw-bar acts as a sort of buffer.

730. What is your opinion as to the durability and safety of the bogies under these cars? The general H. Hudson, construction of the bogie is similar to that in the case of all the freight stock used in America; but I never heard of their putting 20 tons on axles of the same size as those under these dump-cars.

731. You think the axles too weak? Yes I do, to carry 20 tons. I do not think the Government Sept., 1884.

would put that weight on them.

732. Have you heard that although the pattern car you saw here was meant only for coal or gravel there are others for wood? I never heard.

733. If your tender had been accepted, would all the work have been done in the Colony? Yes; I would not send outside for what I could get done here.

734. You are aware that tenders have been accepted for 200 dump-cars? Yes.

735. Is the work done in the Colony? I am aware that it is not. I have seen the ships' manifest reported in the papers, and I know that certain portions are being discharged at Darling Harbour.
736. Do you know the difference in the weight of these cars and the weight of the ordinary D car? The

D truck is to carry 6 tons, but we have seen 8 tons in them.

737. What is the weight? They average from 4 tons 6 cwt. to 4 tons 12 cwt.

738. What is the weight of the dump-cars? I think there is painted on them "6,000 lbs."

739. In your opinion has weight been sacrificed to safety? Yes, I think so. If they were to put 20 tons on the car and run it as far as Mount Victoria I believe it would be pretty well strained to pieces.
740. What is your opinion as to the comparison between the timber in the dump-car and our own Colonial

timbers that you use? I should say that our timber is twice as durable; it is much heavier, and pro-

portionately stronger.
741. Did you give your attention to what was done at the trial of the car here? I looked at it at the time of the trial; I was invited to witness the trial, but forgot about it; I happened to be driving past, how-

ever, and seeing a crowd of people I jumped out, and was in time to see the car canted.

742. Have any improvements been made in our rolling stock—the D trucks for instance—so as to secure less weight in a truck and a larger carrying capacity? There have been several attempts to lighten the D truck, but experience has proved to the Department that it was not economical, and they have gone back to the type that was in use twelve years ago.

743. Are there on our lines at present any waggons running on bogies? Yes; there is a type of waggon called the G waggon. The sides are made to fall down so that they can place long logs or long machinery or iron-work on them, and as soon as such loads are discharged they can bring back hay, coal, or any

description of merchandise on the truck.

744. What do they carry? They are marked to carry 15 tons, but as a test they will carry 18 tons.

745. What is the weight of them? I think the weight is about 12 tons.

746. Were there 20 tons on the car which you saw tried at Boston? I do not think so. It was loaded with sand, and it was not quite half full.

747. What was the distance it ran? It was not attached to an engine. It was loaded and was waiting for a party of gentlemen to see it dumped. It had been brought about half a mile.

748. Can you tell us whether, since your visit to Boston, these cars have come into general use on the American lines? No; I have not heard. We take three or four railway papers, and I see from them that the cars are advertised as being used on such lines. They are advertised as being useful for carrying iron ore

749. That is the manufacturer's advertisement? Yes.

750. Not an independent report? No.

751. Mr. Suttor.] Is it usual, when the Government wish to invite tenders, for them to ask to have them submitted privately? It is done in cases of emergency. Two or three persons are asked to submit tenders, with a view to private competition.

752. That was the case here with regard to these dump-cars? I took it to be such. I took it that the Department wanted to obtain information as to the value of the cars.

753. Your impression was that the Department did not require the cars? That was my impression. 754. You heard nothing more? No.

755. Your tender was not accepted, and you have not built the cars? I have not built them.
756. When you sent in your tender, you said you were prepared to build 200 cars, similar in every respect to the sample car, for £180 each. Would they be duplicates of the sample car? Yes; but I did not think I was going to slavely follow the sample car. It was the type of vehicle I considered, and I thought they were worth £180 each.

757. The material and the weight of iron would be the same? We would have used our own hardwood;

We would not have used imported timber for them.

758. You have never constructed cars so badly made? No; and the Government would not take such work from us.

759. You say that if one of these dump-cars went to Mount Victoria, it would not come back again? Not with 20 tons on it—it might take 10 tons; but I do not believe the Government would allow the vehicle to go; the officers of the Department would draw attention to it. With 20 tons on the sized axles, and wheels under it, I do not that it would be safe. The wheels are only cast-iron. We have wrought-iron

wheels and steel tires to our trucks.

760. What amount of weight could you put on these dump-cars? I do not think more than 15 tons.

761. That is the same as you could put on the G trucks? Yes. If I were an officer of the Department I should object to put more than 15 tons on the car. I should have some hesitation in running them

over our lines, even with 15 tons on.

762. It comes to this, that the workmanship is inferior to any car you have ever made? Yes.
763. And that the construction is so unsuitable that they could not safely travel over our lines? That is my impression.

my impression.

764. And from the sort of material used they are not an improvement on what we have? They are not.

765. They are not so suitable generally as the trucks in use? No. With the wear and tear you would get out of them I believe one of our trucks would be good when that would be worn out.

766. Can they be used on our lines? They would certainly have to be altered before they could be used—that is self-evident. To alter them would increase the expense very much. The sides being high, you would have to lift loads very high. With our ordinary D and G waggons, when the sides fall down they are level with the platform but with the dump cars in their present style you have to lift high over the are level with the platform, but with the dump-cars in their present style you have to lift high over the side to load and handle it.

H. Hudson, 767. Do you think that any advantage would be derived if the sidings were altered? The expense of altering the sidings would be considerably more than the value of cars. I would admit this, that in running them to collieries where new sidings have to be made they might construct an elevated road so that they could use them; but for all our station accommodation there is no merit in them at all.

768. If they ran to a colliery they would have to be loaded? Just so.

769. There would be no advantage in unloading? No advantage; certainly not.
770. I understand the weight of these dump-cars to be 6 tons? No; I was wrong; it is 9 tons 16 cwt.; very nearly 10 tons.

771. And our G trucks are 12 tons? Yes.
772. For general purposes the G truck is far superior to the dump-car? I think it is just worth two of

them. You can utilize it for everything.

773. What is the contract price for G trucks? Our contract price was £300.

774. Do you think that the difference in cost would be saved by the difference in the length of the lives

775. Mr. Garrard.] Supposing that you had taken the contract for these dump-cars, would you have placed under them our present G bogies? I would have put a bogie similar to the specimen.

776. What would be the difference in cost? The bogie which we put under the G waggon is worth double;

it costs double.

777. Mr. Suttor.] To make the cars suitable it would cost the same as the G waggon? It would cost that by the time they were made to do the same work as the G wagon.

778. What is the cost of the G bogie? £80 or £90.

John Rae, Esq., called in, sworn, and examined :--

J. Rae, Esq. 779. What is your position? Under Secretary for Works.
780. You have been requested to produce certain documents in reference to the leasing of the old Atlas

5 Sept., 1884. Company's works;—can you do so? I am sorry that I have not any such documents to produce.
781. Can you inform the Committee if the Atlas Works have been leased to the Carson Company? that I can ascertain in connection with the land and premises that we took over from the Atlas Company, which is the place you refer to I suppose, is, that the Atlas Company offered to purchase the old material for £100. The offer was referred by the Railway Department to its officers, who reported that they thought it was a fair one; but before he came to any decision on the matter Mr. Goodchap sent it to our Department to ascertain if we knew whether there was anybody in possession or not. I sent for Mr. Woolcott, who is appointed to collect the rents, and he reported that the place was let at £2 a week on a modely tenerate.

782. By whose authority was it let? I cannot say.
783. Does this land belong to the Government? It does. It was taken under our Department, but Mr. Woolcott has been appointed under the Treasury to collect all the rents and to make all the money

he can for the Government, giving short leases—so that occupants might be turned out at any moment.

784. Has your Department been referred to as to whether it should be leased to Carson Woods & Co.?

No; the matter was reported to Mr. Wright, and that gentleman said, "Let the lease remain as it is."

785. Is it customary to let premises in such a manner? In regard to anything of this kind (a weekly tenancy) it is customary. Mr. Woolcott has been appointed to collect the rents, and to pay them into

the Treasury without coming to us.

786. Is Mr. Woolcott possessed of power to lease any premises without reference to the Department? I am not in a position to explain whether he is or not. He is not appointed by us but by the Treasury. What authority he got from the Treasury I do not know.

787. Over what land or buildings has he control? He was appointed to collect the rents of lands taken under the Land Resumption Act, and having to pay them into the Treasury we thought it was more convenient for him to be under the Treasury altogether.

788. What are Mr. Woolcott's duties? I have always understood that he was appointed merely to collect the rents and get a commission on what he collected. He may have had power from the Treasury

collect the rents and get a commission on what he collected. He may have had power from the Treasury to go further, but as far as I know he has been appointed merely as a collector of rents for the Government.

789. Over what lands or buildings has he control? I do not consider that he has any control except as to collecting rents for lands acquired under the Lands Resumption Act. He would attend to anything

required at a building and would inform us accordingly and get authority to act.

790. You are not in a position to inform the Committee how this land came to be leased to Carson Woods & Co.? No, it was not leased from us, and all that I understand is that it is a weekly tenancy and that they can be turned out at any moment. I do not think Mr. Woolcott would have power to lease without sanction from our Department or from the Treasury. As far as I know we have not granted a

lease. I do not know what the Treasury has done.

791. Mr. Suttor.] Are you aware when this land was leased to Carson Woods & Co.? I cannot tell, but on the 22nd of May Mr. Woolcott replied that it was let and Mr. Wright decided that they should remain as they were for the present.

792. Mr. Chapman.] It is let at £2 a week? That is all—a weekly tenancy.

793. Chairman.] I understand that Mr. Williams, who was leased to Carson Woods & Co.? I cannot tell, but on the 22nd of May Mr. Woolcott replied that it was let and Mr. Wright decided that they should remain as they were for the present.

documents in your hands in regard to dump-cars;—have you them with you? I do not know what they are. (Looks at them.) I now find that they are returns with respect to Carson Woods' contract for the manufacture of 200 dump-cars, and I hand them in on behalf of Mr. Williams.

Mr. William Scott called in and further examined:-

Mr. W. Scott. 794. Chairman.] Since you gave your evidence last week have you examined the dump-cars lately imported?

I have examined them, but whether I did so prior or subsequently to my giving evidence before is a matter 5 Sept., 1884. I am not clear upon. I cannot say the day, but I have seen them.

795. You have received your evidence for correction?

796. Have you corrected it? Yes.

797. Do you wish to make any further statements with regard to the dump-cars? No.

Mr. W. Scott.

798. There is one question which you were unable to reply to at the last meeting of the Committee. I want to know the quantity of coal you use daily, or we will say daily, at Eveleigh for locomotive purposes? 5 Sept., 1884. We use at present 100 tons a day.

799. What would be the quantity at Eskbank for coaling purposes? I could not say the quantity there. 800. Can you give a rough estimate? I should say from 40 to 50 tons.

801. How many dump-cars would you require to do the coaling? It would require about 50 continually running with coal for Sydney alone.

802. What weight are these cars supposed to carry? I think that they will not hold more than about 15 tons of coal.

803. Coal, sand, or firewood? Of sand, 18 or 20 tons.

804. Do you consider it would be perfectly safe to let 18 tons into these cars on a train coming (say) from Bathurst to Sydney, over our sharp curves and steep gradients? I think that 15 tons would be a very

good load. 805. Would it be wise to load any greater quantity? No; I would not like to see more than 15 tons

placed in them.

806. Do you know the weight of the cars imported? 9 tons 16 cwt. 807. What is the weight of a G truck? About 12 tons.

808. What quantity would such a truck carry with safety? They do not put more than 15 tons on them. We have them marked for 15 tons. We consider they are safe for 15 tons.

809. Do you think it would be safe to load a greater quantity on them? No; I would prefer not to do

810. Which do you think would be the safest: To load 18 tons in the G truck, or 18 tons in the dumpcar? I should say it would be safest in the G truck. It is a stronger truck.

811. What class of wheels is under the G truck? Iron centres and steel tires.

812. How many miles will they run without requiring to be re-turned? I can get 100,000 miles out of

813. How many times can you re-turn them? Five or six times.
814. What is the cost of re-turning the wheels under the G truck? About 15s. per pair.
815. What class of wheels is under the dump-car? Cast-iron chilled wheels.
816. How many miles will they run? About 50,000 miles. We have had 50,000 and upwards out of

817. How many miles do you think the wheels under the dump-car will run? From 50,000 to 100,000

miles; they vary.

818. And what is done with them then; can you do anything with them? No; you have to take them off the axle and put fresh ones on.

819. What is your experience in regard to the life and quality of the English wheels as compared with the American? The English wheels will last a life-time by re-tiring them.

820. What about the American? You must replace them by new ones.

821. After how long? After travelling from 50,000 to 100,000 miles.

822. Have you discovered any breakage or defects in the American wheels? We have had no waggon wheels break to my knowledge.

823. I mean American wheels generally? No waggon wheels. 824. Or engine wheels? Yes, we have had several of the bosses split.

825. You said you had none on the trucks;—do you import many trucks from America? No. This is the first I think with the exception of the meat car and the sleeping cars.

826. No cattle waggon? I believe there is a cattle waggon. Yes—the one cattle waggon. 827. Were they sample waggons? Yes.

827. Were they sample waggons? Yes.
828. Then am I right in assuming that the reason why you have never had any breakage in the American rolling stock is because you have not imported any? Yes.
829. This is the first dump-car, and it is not running, and the others were merely sample cars? Yes.

830. What has been done with the meat van? It is in the siding at Eveleigh.

831. How long has it been there? Some months.
832. Has it been in use? Not much.
833. Why? I do not know; but I believe it is unsuitable for the traffic.

834. You said that you received a sample cattle waggon? Yes.
835. How long ago? I cannot say the exact date, but it may have been twelve months, more or less.
836. What was the cost of it? That I could not say.
837. Has it been paid for by your Department? I believe so.
838. To what use has it been applied? It has not been used at all. I believe the Traffic Manager says that it is not switchly for cettle. that it is not suitable for cattle.

839. Is it to be reconstructed? Yes; we have instructions to re-construct it and to make a sheep van of it.

840. Is there any more rolling stock that you have imported from America? No, with the exception of the sleeping cars.

841. Have you tested their wheels? We have made provision to supply them with our own wheels and axles. There were none ordered for them.

axles. There were none ordered for them.

842. Why was not that provision made in regard to the dump-cars? I do not know.

843. I presume that the reason why you arranged for your own class of wheels to be placed under the sleeping cars was that you considered they were more serviceable and better adapted to our traffic than the others;—is that so? Yes.

844. You cannot inform the Committee why the same wise provision was not made in regard to the dump-With regard to the dump-cars the arrangement was made to supply them according to cars, can you?

pattern.

845. Did you consider it necessary to alter the pattern in any way? We had instructions to alter it for

846. Did you suppose you were to report on the design, the class of material, and the workmanship, and whether the class of wheels would be suitable or not? I think not.

:847.

Mr. W. Scott. 847. What did you consider you were supposed to report upon? A vehicle that would be suitable to interchange with our ordinary rolling stock as regards buffers and drawbars, and the arrangement was 5 Sept., 1884. made that it was to be according to a pattern-waggon.

848. Were you asked to give any opinion regarding the workmanship, material, design, &c.? No, I think not. 849. If you had been asked to do so before this order for 200 dump-cars had been sent would you have done so? Yes; if I had been requested to do.

850. Were you in charge of the Locomotive Branch at the time the order was given—that is about the 28th August? Yes; I must have been in charge then.

851. And you were never asked to give any report regarding the suitability or otherwise of this car. Were you present at the test? I saw them tipped on two occasions with Carson Woods.

Were you present at the test? I saw them tip 852. Were you present at the first test? No.

853. You mentioned just now that you never found any of the wheels on the trucks imported from America break; and from evidence given since then it transpires that the only classes of railway stock imported have been the cattle wagons and the meat vans;—is that so? Previous to them there were two

sleeping cars—three carriages in all with these wheels.

854. That is the extent of your experience? Yes, with regard to cast-iron chilled wheels from America.

855. Have you noticed any defects in any of the engine wheels imported from America? The only defect has been that we have had three or four split in the bosses.

856. Is that not a serious matter? Yes; but still when it is detected the wheel has been taken off and replaced by enother.

replaced by another.

857. Have you had any accidents from breakage in the wheels? No. 858. None of the trains broken down? No; not from the breakage of any of the wheels.

859. What has been your experience with regard to English-made wheels of engines? As a rule they

are very durably made of wrought iron throughout.

860. Is there the same liability to breakage as there is with the American importations? No.

861. Were you ever asked to report with regard to the advisability of providing a lighter class of truck which would be capable of carrying greater weight than the ordinary D trucks? Yes, I believe I have.
862. What report did you give? I do not recollect any report; but we have been asked to reduce the weight of our rolling stock

863. How long is that ago? It may have been since I returned, but for a number of years previous, in

Mr. Russell's contract, we had a number of light trucks made.

864. What is your experience of them? They were of light kauri timber, and we have had to renew nearly the whole of them since.

865. Since then have you made any other arrangements? We are always going into the matter. We are having plans made so that by the introduction of wrought iron frames we may reduce the weight.

866. Who recommended the G class of truck? I cannot recollect whether it was myself or not, or

whether it was the Traffic Manager. It was recommended previous to my leaving for England three

years ago. 867. Was any objection taken to that truck when it was made? It was considered to be too heavy, I

believe.

868. By whom? I think it was the Traffic Department.

869. Do you yourself consider it as too heavy? Not for carrying 18 tons. I think however that the bogie frame might be lightened a little, and this we are now doing.

870. I mean as regards the woodwork? I do not think it is too strong for the weight it has to carry.

871. Could you reduce it in weight and yet permit it to carry the same quantity over our steep inclines?

If we reduced its weight it would not be so durable. 872. Would it be safe to reduce the weight? It would be safe for a certain time; but it would not be

873. Mr. Poole.] I understand you to say, in answer to the Chairman, that if you reduced the total weight of the trucks they would not be so durable;—is that so? Yes.

of the trucks they would not be so durable;—is that so? Ies.
874. But to your mind as a practical locomotive engineer can these trucks be reduced in weight with perfect safety to their travelling for a limited number of years? That is possible.
875. Is it practicable? Yes, I believe it is, by using lighter timber and lighter ironwork.
876. Well then, following that view, would it, in your opinion, be a saving to the Department to use a lighter truck, carrying the same weight as the present one, but which would wear out in a shorter period than our present truck;—would that be a saving to the Department over a series of years for haulage alone?

That would be a metter of calculation That would be a matter of calculation.

877. Speaking generally, could the trucks be lightened without lessening the factor of safety? To a certain degree.

certain degree.

878. 25 per cent.? No. They might be reduced from 5 to 10 per cent.

879. Not more? No. I do not think it.

880. That would be at the cost of how many years' work or durability—what, in short, would it lessen the life of the trucks? A few years; it would depend upon the usage they get, of course.

881. I think the Committee may gather from your answers that, taking the thing altogether, you do not see that much improvement could be made by lessening the weight of our rolling stock? No.

882. Mr. Garrand 1 During your visit to A merica did you have an opportunity of witnessing the working

882. Mr. Garrard.] During your visit to America did you have an opportunity of witnessing the working of these dump-cars? No, I never saw them at all in America.

883. You are not aware whether they are in actual use there or not? No, I am not.

884. You are certainly of opinion that the cast iron chilled wheels are not near so safe or so economical as the wrought iron wheels with steel tires? No, they are not.

885. What is the difference between the cost of the English bogie and one of these American dump-car

885. What is the difference between the cost of the English bogie and one of these American dump-car bogies? Approximately the American bogie frame would be 10 or 15 per cent. cheaper.

886. You said you had no accidents to waggons with these wheels, but that there had been certain breakages in the engine wheels? Four, to my knowledge.

887. What did you replace them with? American wheels again.

888. Although you had experience of the fact that the previous one had burst? Yes.

889. Who was the designer of the G truck? I think that it was designed in Mr. Burnett's time.

890. You think it is not safe to carry more than 15 tons in this dump-car? That is a good load for it.

891. Are the axles of these cars the same as the axles in the G truck? I have not measured them, but they appear to me to be about the same size. they appear to me to be about the same size.

Mr. W. Scott.

892. The axles in the G truck will carry 15 tons? Yes; they are steel axles.

893. Are the axles in the dump-cars steel? I believe not.

894. Do you think that it would be perfectly safe to work these dump-cars over our mountain lines with 5 Sept.; 1884. a load (say) of 18 tons? I would not recommend it.

895. Are you or is any officer of your Department watching the putting together of these cars? Yes, Mr. Bourn, the Inspector of Rolling Stock.

896. Is he always on the premises? No. 897. Is there an officer of the Department always on the premises? No.

898. Is it not a rule, in the case of any Colonial firm tendering, for an officer of the Government to be

very frequently if not always on their works? Frequently, but not always.

899. In the case of a contract let to Mr. Thomas Wearne, was there not an officer always on his works? I could not say, as the work was not done under the supervision of my branch.

900. Going back to your own Department, how often did your inspecting officers visit Mr. Vale's place? Daily.

901. And he remained there for the greater part of the day? Yes, at the present time. 902. How often does Mr. Bourn visit the works at Darling Harbour? I cannot sa I cannot sav. only just beginning to be put together.

903. Who has charge of the Darling Harbour line? The Traffic Manager.

904. You do not know whether permission has been given to any one to use any of the lines or railway premises there? No, I do not.

905. Mr. Suttor.] You said the dump-cars were in general use? No, I did not say that.

906. Suppose you have a steel axle and an iron axle of the same dimensions, what is the difference in the carrying capacity of the two? A good steel axle is about 10 per cent. more than an iron one; but if you get an inferior steel one it will not carry so much as an iron one will.

907. I understand you to say that the axles of the dump-cars are similar to those in the D trucks, except that the axles in the D trucks are of steel? Yes.

908. Then it would carry 10 per cent. more than the dump-car? It has a greater factor of safety.
909. On the G car you do not carry more that 15 tons? Of coal you would not be able to get more on. 910. Considering that one axle is steel and the other iron, yet both are the same diameter, you would carry 10 per cent less on the dump-car than you would on the truck? Yes; but there is a large margin of safety on these steel axles.

911. Do you consider there is a great difference in the lives of the cars and the trucks? The G-truck is

a longer lived truck than the dump-car.

912. To what extent? I cannot say, for I have not yet had any practical experience of the dump-cars.

913. Then with regard to dump-cars you are working to some extent in the dark? Yes.

914. You do not know what the experience in America has been? No.

915. Do you think the workmanship in the dump-cars is equal to that in the Colonial trucks? I think it is about the same, with the exception of the bogic frames, which are lighter.

916. Do I understand you to say that it would not be safe to run the dump-cars as originally designed over the mountains?

1 would not like to risk them.

917. Do you consider them as safe now? I cannot say I do. I would like to see them over the mountains

on our 8-chain curves

918. You would not like to say they were safe until you saw them tried? No.

919. From your present knowledge of the dump-cars would you certify as to their safety? No, not until I have tested them.

920. Can you tell me the difference in the weights of the G truck and the dump-car? About 2 tons; the G truck is the heaviest.

921. Would that difference in weight be very much against the use of the G truck as against the dump-

cars in regard to haulage? No; I do not see it; 2 tons additional dead weight.

922. Mr. Poole.] What is your standard difference as regards strength and durability between steel and iron axles of the same diameter? I should say about 10 per cent. 923. Not more? No; I do not think so.

924. Is not the theoretical difference nearer 25 per cent. in favour of steel? Of course there is a great difference in steel. A good steel axle is 10 per cent. at all events more than an iron one, but in theory it may be worked out more.

925. If you consider it necessary to have a specific margin for safety in your G trucks with steel axles is it not also necessary to have the same margin of safety in connection with the dump-car axles? It would be better, no doubt; but I do not know what diameter the axles in the dump-cars are; I have not

926. Whatever margin of safety you give in the case of trucks designed and made here in view of the exigencies of our traffic and the peculiarity of our railroads, should you not insist upon the same margin of safety in connection with cars which are imported from abroad? It would, no doubt, be better to have the same margin of safety.

927. You do not consider that the dump-car axles and bogie frames give the same margin of safety as

your own G trucks? No; I do not.

928. Chairman.] In reply to Mr. Suttor you said that the workmanship in the dump-car was equal to that in the Colonial made truck. When you were before the Committee on the last occasion you were asked what you thought of the workmanship, and you said it was fair but not so good as your Colonial work. Have you any reason for altering the statement which you made on that occasion? The American class of work is lighter than the Colonial or English.

929. Is the workmanship as good as in your own articles? No; it is a rougher class of work.
930. Is it not usual to have tests made before using new rolling stock? No, I think not.
931. In the case of engines? We specify the material they are to be made of, the size of the cylinder, the length of stroke, &c.

932. If it is a new type of engine what do you have to guide you in regard to the workmanship, and to inform you whether it will do the work required in this Colony? We make out a specification.
933. Is it not necessary to have some test made as to whether the engine will bear out the specification?

There is an inspector to see everything carried out according to the drawings and specifications.

934.

MINUTES OF EVIDENCE TAKEN BEFORE THE SELECT COMMITTEE 32 Mr. W. Scott. 934. In South Australia it is customary to have a test made when importing engines: have you had similar tests here? No; I do not see what you would gain by them. We run 2,000 miles before we 5 Sept., 1884. sign the final certificate for an engine; 10 per cent. of the cost is kept back until the engine has run that distance to my satisfaction. 935. Who designed the American cattle waggon? I cannot say. 936. Were you in charge at the time it was imported? I was in charge at the time it was delivered. I knew nothing of it until it did arrive. 937. When was it imported? Shortly after I came back,—I think some twelve months ago; I have not got the exact date.

938. Since you returned from England? Yes. 939. Do you know when the order was sent for it? No.
940. Have you tried it? No; it has not been out.
941. Do you know why? I think the Manager thought it was unsuitable for cattle.
942. Have you examined it at all? Yes. 943. Have you reported on it? I really forget whether I have reported on it or not. There is a plan made out for altering it into a sheep van.

944. What will that alteration cost? That I could not say. 945. Was that car patented? I could not say.
946. Do you know by whom it was ordered? No.
947. Do you know the agents? I think that it was imported through Towns & Co.
948. Do you know the cost of it? No; I have not got the cost just now.
949. Has it been paid for by the Department? I think that it has. 950. Is it true that more than one cattle waggon was ordered? I am not aware.
951. Have you seen the papers? Yes; they must have gone through my office with the account before it was certified to 952. Did you certify to the account? I believe I did, but I am not quite clear; if it was paid I must have done so. 953. Do you know under what conditions it was accepted? No, I cannot say, unless I had the papers before me. 954. It was imported with the view of carrying cattle, was it not? Yes, I believe so—for carrying them with greater safety; there was a separate stall for each bullock.
955. Do you think it could be utilized on our lines? Not for cattle, unless you got stalled cattle; it would not do for wild cattle. 956. You referred also to the meat van? Yes. 957. When was that imported? About the same time as the sleeping cars. 958. What was the cost of it? That I could not say. 959. What was the cost of it? I not I could not say.
959. What year was it imported? I could not be sure of that, but it was about four or five years ago.
960. Who imported it? I could not say.
961. Has it been paid for? I could not say; it did not come before me.
962. Does it belong to your department? Yes.
963. Would you have charge of it unless the Government had paid for it? We could not consider it our property unless it was paid for.

964. Do you know whether it has been used? I do not.

965. Is it suitable? Not for what it was intended for.

966. Can other use be made of it? Yes, I think so. 967. Can you tell me why it has not been used? I do not know why the Traffic Manager does not use it. 968. Is there any objection to the design or the workmanship or the class of material? No, it is a light No, it is a light -very light. 969. Could it be safely used on our mountain lines? I have not examined it for two years or more.

970. Who imported it? I could not say.

971. Who is the agent? That I could not say.

972. In reply to a question I put to you some time ago, you stated the difference in the lives of a chilled cast-iron wheel and an English-made wheel? Yes. van-973. What time does it take for American or English wheels in the ordinary way to run 50,000 miles? It may take from nine to twelve months.

974. Do I understand from that that these dump-cars would run only twelve months when new wheels would have to be supplied to them? No; I should say about two years.

975. At the end of two years what would you do with them? If they were worn flat in any places we should take the wheels off and put others on.

976. Of the same type? We have put our own English type on.

977. In your opinion, after these cars have been running for two years they would have to have new wheels of the English type put on? The sleeping cars had a brake on all wheels, and these have not. We have had no experience of the life of the wheels on these dump-cars.

978. Do you believe that it would take two years for them to run 50,000 miles? Yes, if the car was not in continual daily use.

979. At the end of that time you think the wheels would be of no use? No; except as old material for melting up again.
980. How long would the English wheel last? It is everlasting by having the tire renewed; and the

tire will last five or six years.

1981 Would the tire cost as much as an American chilled wheel? Yes I think it would.

981. Would the tire cost as much as an American chilled wheel? Yes, I think it would. 982. What would it cost to re-turn? About 15s. a pair.

983. Would they be as good as ever afterwards? Yes.

Mr. Thomas Midelton sworn and further examined:—

Mr. T. 984. Chairman.] What is your occupation, Mr. Midelton? Locomotive Overseer.

Midelton. 985. When you were before this Committee last week, you were asked to examine the new cars which have been imported and to let us know what your opinion was with regard to the workmanship in them. If you

you have done so will you kindly favour the Committee with full particulars regarding the same? sir. I examined three new cars yesterday and also the pattern car. I found the head-stock in the pattern car fractured almost in two—very badly. It has been loaded with about 20 tons of rails and apparently something has gone against it very smartly, and the buffer which caught the head-stock has fractured it sept., 1884 right through. I also noticed that what is called the bolster beam of one of the bogies has deflected about $\frac{2}{3}$ of an inch with the weight of this iron. The beam is not strong enough or it is not trussed sufficiently. I looked at the work and I still hold the same opinion about the general build of the car, that it is very passable work as regards putting the car together, but it is not what is called finished work. There is no polish about it; but there are good joints, as there are also in the cars which are being put together to order. The ironwork is decidedly rough, and I could not pass a great deal of it—the hooks, chains, and axles especially. The axles are very bad indeed. I would not pass any I saw yesterday. I inspected the axles very closely, and I should not like to take the responsibility of allowing them to go on traffic before they are tested. Taken as a whole the woodwork, the bogies, and the body of the car seem fairly put together. The surfaces are not nicely smoothed down, but it is a good passable waggon job as regards the manufacture. It wants a coat of paint et-cetera, but I dare say that will be done. The timber is very good. The new cars have the same defect as the pattern car in regard to the buffer plank or head-stock. It will break in two the same as the others. It wants a strut to resist the thrust. I or head-stock. It will break in two the same as the others. It wants a strut to resist the thrust. I have called Mr. Scott's attention to the axles this morning so that he might go and look at them himself. I did not go to see these cars until I got a summons to be here to-day, and then I went after dinner yesterday to inspect them as I thought I had authority to. I wrote a memo to Mr. Scott, and I asked him if he would like to go with me before coming here. I drew his attention to the axles especially in the new cars as being defective. I thought also that if there had been time we would have gone this morning and had a look at them. I dare say we will go round this afternoon and have a look.

986 Are the cars as good as the pattern car? The work is as good as in the pattern car but I would. 986. Are the cars as good as the pattern car.? The work is as good as in the pattern car, but I would not like to be responsible for them in any shape or form.

987. Why? I do not approve of the wheels, and I do not approve of the axles.
988. In what way do you not approve of the wheels? It is a question of cost. Some people think first cost is everything. You may buy a cast-iron wheel at half the cost of another, and it may break in two and cost you more than 100 wrought-iron wheels; and therefore I would not support the introduction of cast-iron wheels—the American cast-iron chilled wheels I mean. They are used to a large extent in America, but with bad results, and they are going to use wrought iron wheels and steel tires there now. 989. Are you aware of any accidents there? Yes. I could refer you to the Railroad Gazette, where you can learn the general nature of the accidents. There is a summary there giving all the accidents. Something like the Board of Trade returns—a slight summary of the accidents every month. It is published in the Railroad Gazette and is open to every one. lished in the Railroad Gazette and is open to every one.

990. Do they attribute the accidents to this class of wheel? They are getting to the opinion that castiron wheels are the dearest in the end, and therefore they are going to steel tires as fast as possiblevery fast in my opinion, considering they have been such strong advocates for chilled cast-iron wheels.

991. Do you think it would be unsafe to run these cars with the present appliances over the mountains? I think it would be unsafe as regards the axles. We might get 200,000 miles out of the wheels without a mishap, but not a quarter of that distance out of the axles. They are the worst axles I have ever

992. Do you think there would be danger from them? Yes sir; they are the worst part of the car.

993. What is the difference between the car now being put together and the G truck. The axles look to me to be slighter in the middle. There may be about a for an inch difference in diameter. Our axle is 34-inch in the centre and tapers to 5 inches near the wheels; but these axles are made a different shape and not a better shape by any means. I consider our present steel axle a very good one; that is the English imported axle. They are a nice shape, but I do not consider these American axles a nice shape; the change from the centre to the inside of the bosses is too sudden. It wants a nice gentle change from the small to the big diameter.

994. After careful consideration you are of opinion that it would be unsafe to use them on our lines? Certainly; I would not pass one out of the whole lot I have seen. Even after a test I should be very doubtful of them.

995. Why would you be doubtful then? Because there might be a hidden fracture which we could not find out, unless we tested all, and we could not do that; we can only take a view generally.

996. Have you considered the manner of attaching the frame to the bogie? Yes; I think now I have

996. Have you considered the manner of attaching the frame to the bogie? Yes; I think now I have seen the whole that it is worse than in the original car.

997. In what respect? The bogie will twist on a curve and a link will tend to release itself from the bracket on the bogie, and the other will get further into gear, but I think it is possible for both to get out of gear, and the car dump itself. They are not far enough apart; they should be the width of the gauge, but they are inside considerably.

998. Is there any king bolt? Yes; there is a pin with a joint which goes through a dowel, but it is rather weak. I daresay it might answer the purpose of preventing the car jumping out of the bogie seat, but I would not call it a firm and secure thing now.

but I would not call it a firm and secure thing now. 999. With your large experience would you consider it safe to travel on our mountains with a king bolt of that description? I should not consider it safe.

1000. Are you still of opinion that with a sharp shunt there would be a liability of this king bolt breaking, and the body of the car detaching itself from the bogic frame? I should think it a very likely thing to occur. 1001. Do we understand clearly that after careful examination of this car as regards the wheels, the axles, the dumping apparatus, and the manner in which the body is attached to the frame, you have no reason to alter the opinion you have previously expressed that it would be unsafe to run the car'on our lines? You might run it all right but it is a risk.

1002. Do you think it wise to run such a risk? No, certainly not; I would not do it. I would not take

the responsibility.

1003. You told the Committee that you were connected with the Railway works since you were a boy?

1004. Have you had many opportunities of judging as to the safety of rolling stock, et-cetera? think I have had as good experience as any man you could name.

1043—E

1005.

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Mr. T. Midelton. 5 Sept., 1884.

1005. Where did you gain it? I served my time on the Great Western Railway, and I have worked at Beyers and Peacock's as a mechanic and as a draughtsman; also as draughtsman at the Vulcan Foundry, Newtonly Willows, Lancashire. I also worked as a mechanic on the Great Eastern Railway and rose to the position of a foreman, and there I sent out 132 engines a day. I had the sole responsibility of the 132 engines and their tenders, and I never had a mishap of any note that I am aware of. From that place I was offered a very good position as engineer to the Smith Vacuum Brake Company. The inventor offered his invention to my superintendent, Mr. Adams, and asked permission to put it on a train, and Mr. Adams sent Mr. Smith to me, and I had carte-blanche to put it on as I thought proper. Mr. Smith explained his idea to me, and he said, "I will leave it in your hands," and I believe it is running now. Mr. Smith offered me £500 a year to go with him to fit it on other lines in England. I was with him eighteen months, and I fitted it on the Great Northern Railway, the North-Eastern Railway, the Manchester, Sheffield, and Lincolnshire on the Great Northern Railway, the North-Eastern Railway, the Manchester, Sheffield, and Lincolnshire Line, and the Monmouthshire Railway, and there were one or two other lines which I almost forget. The Brake Company got into financial difficulties, and I did not receive my salary, and I thought it prudent to look out for something else. I was offered a position on a railway in the Isle of Man. I went to look at it, and it happened that one of the directors was chairman of the Tasmanian Railway, and he said, "We want you to go there." I said that I did not want to go there, and he said that if I did not take that he did not think I would have the other; so I thought a few years in Australia would not hurt me, and I came to Tasmania in 1876 as Engineer and Loco. Superintendent of the main line railway. My strict orders from the chairman were to put things to rights there, because everything was upside down. I was to have full authority and power to put things right in Tasmania. Everything was upside down there, and the rolling stock was anything but what it ought to have been. In fact he told me that it was all wrong. I came here and I effected all that I was sent to do. I was in Tasmania from July, 1876, to about May, 1878, when I left the Company's service. The general manager of that line was very friendly indeed for the first twelve months, until I commenced to make improvements, when he got a little cross. I said that I could not alter my tactics and submit to your control. I will submit to your control if the Board directs me to, but the responsibility of the mechanical department lies with me. I held that posi-Board directs me to, but the responsibility of the mechanical department lies with me. I held that position for two years and effected what I was sent out to do.

1006. How long is it since you entered the service of the Government of New South Wales? I started in August, 1880.

1007. By whom were you appointed? Mr. Burnett gave me a position as draughtsman in his office.

1008. Since then you have worked up to your present position, of course? Yes, sir.

1009. Have you examined the buffers of these dump-cars? Yes, sir.

1010. What do you think of the workmanship in them? I am afraid that the outer edges will break off.

They are cast-iron. It is not what is shown on the drawing; it is wrought-iron there.

1011. But were there any cast-iron buffers previously? Yes; on American stock, on passenger cars; cast-iron heads and wrought-iron spindles; but they are not subject to same sort of strain.

1012. On our waggons? Not in my time. I do not remember seeing any.

1013. Have you ever been asked to report with regard to the advisability of providing rolling stock of a

lighter description, yet capable of carrying extra weight? Yes, repeatedly, and I have done it.

1014. How long is it since you were asked to do so? From the commencement; and my own bent has been that way. I want to reduce the dead weight as low as I can. That is my forte. I have made I have made drawings, but I have not carried them into effect, except in the case of carriages. I have nineteen running out of twenty-four of these designed and built to my design. The Traffic Manager recommended twentyfour, and I designed them. I have also proposed additions to the waggon stock which have not been

four, and I designed them. I have also properly finished, but the drawings have been made.

1015. Have the drawings been approved? They have not been submitted yet. When I started I was Locomotive Engineer, and I could then do what I cannot do now; but the drawings are made and the Locomotive Engineer, and I could then do what I cannot do now; but the drawings are made and the Locomotive Engineer it was done when Mr. Scott was away. The design I referred to in the paper ideas approved of because it was done when Mr. Scott was away. The design I referred to in the paper has been approved of.

The additions to the waggon stock which I proposed were:4-wheeled waggons and double-bogie waggons.

The waggon I refer to specially is what is called a platform waggon, with a flange

round the edges, which I call a coal waggon, or a wool waggon.

round the edges, which I call a coal waggon, or a wool waggon.

1016. What is the weight of it? 8 tons 10 cwt.

1017. What weight will it carry? 25 tons. It will carry 20 tons with perfect safety. I would not hesitate to put 27 tons on as a test load.

1018. What class is it? It is a double bogic wagon, like this dump-car. It is longer and quite as wide.

1019. Has the design been approved of? Yes, the rough outline, with my papers making the recommendation, has been approved of; but the finished drawings have not been submitted; but I apprehend that they will be approved of.

1020. By whom was the design approved of? The Commissioner. I wrote a paper and submitted a tracing to him.
1021. Was your recommendation made previous to the dump-car being imported? Yes; I think before

I heard of the dump-car. 1022. Regarding the class of truck to carry a greater quantity with less weight provision has long since been made to carry that into effect? Yes, certainly. The drawings can be produced if you wish to see

them. 1023. You also mentioned about the four-wheeled waggons you designed? Yes. 1024. What is the weight of the four-wheeled waggon? 4 tons 5 cwt.

1025. What weight will it carry? Seven and a half tons of coal, or anything else like that, or ballast.

1025. What weight will it carry? Seven and a half tons of coal, or anything else like that, or ballast. 1026. You also mentioned to the Committee that you constructed a number of carriages? Yes. 1027. What was the weight of those carriages? The first class was 12 tons 16 cwt. empty. There were six compartments, and a capacity for holding seventy-two passengers. That would be a crowded car; but taking an average of four aside that would be forty-eight passengers. The weight is 12 tons 16 cwt. without the gas apparatus, but with that and the brake it would be 13 tons 6 cwt. I do not know exactly any class of car that would compete with that except the Cleminson car. The Cleminson car, however, is considerable heavier in every respect. The American car is 16 tons 10 cwt., and my carriage will carry as many as that. It is the lightest, simplest, and strongest car we have in my opinion. I do not know of any car there to equal it. It is a very useful car. There are plenty of its type running in the suburban trains, and

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ON THE PURCHASE OF RAILWAY ROLLING STOCK.

and in express trains, and there are some in the yard. I have the same type of car in the second-class with seven compartments that would carry eighty-four passengers for the same weight. I have also a Mr. T. Midelton. composite carriage of the same size, length, and width, so that you can have any class of accommodation, first-class smoking and non-smoking, and second-class smoking and non-smoking. Those are the cars I sept., 1884. have built; and the waggons which I have referred to may with them be fairly and justly considered to answer the question of reducing dead weight and increasing the carrying capacity, considering that I

have been in office only a little over two years. 1028. How long were you acting as Locomotive Engineer? Mr. Scott went away in June, 1882, and he came back in July, 1883. In round numbers he was away thirteen months. He did not resume duty for three weeks after his return, as he was ill.

1029. Were you in communication with the Commissioner? I saw him several times a week and we agreed upon the desirableness of reducing the dead weight and increasing the dividends.

1030. You think this new waggon of yours will answer that purpose? Oh, yes sir.

1031. You see here a sketch showing the way in which it is proposed to coal engines with the dump-cars, will you furnish the Committee with your opinion on the system? It is not the best system by a long

1032. Why do you think that it is not suitable? Because the coal is handled twice more than it need be, and you require an exceptional spot to utilize this mode. You cannot in all cases have the two elevations with one so much above the other. This is proposed for Eveleigh. Well, I am totally opposed to it. It is expensive and not the best and most expeditions way of doing it. The portions of the stage It is expensive and not the best and most expeditious way of doing it. The portions of the stage occupied by the coal would be about one-third of its width. To remove that coal from where it is dumped to the tender it necessarily must be shovelled into the small four-wheeled waggon shown on the sketch, and wheeled across the stage the other two-thirds, and then tipped by hand into the tender. That moves the coal twice unnecessarily, and deteriorates it unnecessarily. I could accomplish the process of coaling without handling the coal at all.

1033. In what way do you propose to do that? Well, there would be the platform waggon I have referred to—the 8-ton 10-cwt. waggon, or the four-wheeled waggon, made perfectly flush, with only iron round the edges. In that waggon I would have thirty boxes, each of which would hold 10 cwt. of coal. The boxes would fit close together, and they would be very cheap. What would pay for that stage would pay for my boxes. These boxes are made to fit as close together as bricks, and the plates come close together also; and these waggons go to the mines and are filled like an ordinary waggon. They are never touched until they come to the locomotive depôt, and then they stand on a road by themselves. Next to that road would be an old locomotive with a small crane fixed to it, and near that, within 10 feet, would be the engine to be coaled. The operation then is for the crane man to swing the chain round to one of these boxes; he takes this up and swings it round to the engine, and he hauls in a chain and tips the contents of the box down. That, however, is only half of my system. You must get rid of the ashes in the pit. In my case I drop an empty box into the pit, and the man under the engine rakes the ashes into the box and with the same crane you can dump the ashes into a ballast waggon and they can be taken away and utilized on the road. The coal is weighed and measured on the crane and it is not handled

or deteriorated in any shape or form and every man knows what he takes on.

1034. Has the system been in force? Yes, I tried to use the pattern dump-car for the purpose with Newcastle coal to dump it on to the engine, but the car was too wide and I could not get it in by about 4

inches. Mine is acknowledged to be the best system of coaling engines and I am the inventor of it.

1035. Who acknowledges that it is the best? Everyone who has seen it: the introducer of the dump-car, Mr. Carson Woods; and it has also been approved of by the Commissioner.

1036. Has the Commissioner approved of it? I furnished drawings of it over twelve months ago. The system has been approved of and I have had instructions to construct it throughout the lines, and the Commissioner gave instructions that I was to be assisted in carrying it out, and that I have done as far as I can under the circumstances. I have been removed now from the position of Locomotive Engineer to my own position as Locomotive Overseer.

1037. Has any objection been made to your system by any of the officers? Yes, I had objections to meet

generally throughout.

1038. By whom were the objections made? I think the Traffic Manager, and I think Mr. Cowdery objected, but the Commissioner certainly supported the system. In fact he wrote a very handsome minute on the papers instructing me to carry it out. We argued the thing fairly. It was sent to the officers and it was sent to me, and I replied, and I gained the day.

1039. Are the statements of the officers in writing? Yes; the papers show the whole transaction.

1039. Are the statements of the officers in writing? Yes; the papers show the whole transaction.
1040. Will you produce the papers? I can ask for them in an official way, and I have no doubt they will be produced in the usual way. I may mention that I am well on with the scheme at Goulburn. The yard be produced in the usual way. I may mention that I am well on with the scheme at Goulburn. The yard is laid out to my design and the shed also, and time will tell whether I am right or not; but I know I am

right, and I am quite willing to let time speak for itself as to whether I am right or not. It is partly working now in the Sydney yard. But at Goulburn it will be exactly as I want it.

1041. You say that the system is speaking for itself at Sydney. Do you allude to a saving? Yes, a saving. I am coaling more engines with fewer men.

1042. What do you assume the saving to be? I should say 3d. or 3½d. a ton; and it will be more when

the ashes are considered.

1043. Will the dump-cars be required for your scheme of coaling? No; and I can use the waggons for wool during the wool season.

1044. Have you been asked to report as to whether this system of coaling by the dump-car would be better than yours? No; I have been asked for nothing since the original minute on the first page of the papers was written. Mr. Scott favours this scheme, but I claim that my scheme is the best. Mr. Carson papers was written. Mr. Scott favours this scheme, but I claim that my scheme is the best. Mr. Carson Woods has admitted mine to be the best, and he has been through America. I know the places in England where the coaling is done, and I am getting letters from home asking me for leave to use my

system.

1045. Have you patented it? It has been patented. Some friends of mine have paid the money, for I could not afford it. I am satisfied to see it work satisfactorily.

1046. What is the weight of each of your boxes? About $3\frac{1}{2}$ cwt.

1047. How many are there in the truck? Thirty in the double bogie, and fifteen in the four-wheeled waggon. They are both iron waggons, and the wheels and axles are stronger than any we have, and are also made to my design with a new tire-fastening.

Mr. T. Midelton. 5 Sept., 1884. 1048. I want to find out the weight of your new design of bogie waggon that will carry 20 tons? That is

1049. And with the boxes? Thirty times $3\frac{1}{4}$ cwt. more. The inside dimensions of the dump-car are 27 feet 6 inches. My waggon is 31 feet, and the four-wheeled waggon is 15 feet $5\frac{1}{4}$ inches. The width of the American car is 8 feet 3 inches against my 9 feet 3 inches. The depth of the dump-car is 2 feet against my 2 feet 3 inches. The depth of the dump-car is 2 feet against my 2 feet 6 inches. The weight of the American dump-car empty is 9 tons 16 cwt. 2 qrs.; the weight of mine is 8 tons 7 cwt. 1 qr. 15 lbs. Mine is iron, and that is wood. The American car with boxes would be 12 tons 14 cwt.; mine would be 13 tons 3 cwt. The weight of coal carried would be 20 tons in the dump-car, and 15 tons in mine. The weight of the dump-car loaded with coal would be 29 tons 4 cwt., and the weight of mine 28 tons 3 cwt. We could each carry 20 tons of rails. The weight of the dump-car with 20 tons of rails would be 29 tons, and the weight of mine 28 tons 7 cwt.

weight of the dump-car with 20 tons of rails would be 29 tons, and the weight of mine 28 tons 7 cwt. My car being wider and longer will carry more wool of course than the dump-car. 1050. You say yours is wider? Yes, my waggon is 9 feet $3\frac{3}{4}$ inches wide, and that will clear everything; but the original dump-car is 9 feet 6 inches, and that will not clear everything. 1051. Have you given us particulars of the smaller waggon? The total length of that is 15 feet 5 inches, the width 9 feet 3 inches, the depth 2 feet 6 inches with boxes. The number of coal-boxes would be fifteen, and the weight of them 2 tons 8 cwt. The weight of the waggon loaded with empty boxes would be 6 tons 10 cwt.; the weight of coal carried 7 tons 10 cwt. The weight of the waggon loaded with coal would be 14 tons. That is $7\frac{1}{2}$ tons load, and we do not carry more than 7 tons at the present time. I guarantee the strength of the waggon to be greater and the life of it longer; if they are not I would be glad if somebody would show me where that is not the fact.

1052. I understand you to say that it has been criticised, and that your design has been approved of? The Commissioner has approved of it; but the officers generally disapprove of it. Probably they think the dump-car is the best. Mr. Read advocates the dump-car for coaling engines, and I especially went against that.

1053. Are there any other papers with regard to this dump-car that are not in the papers before the Committee? I can hardly say; but there is my letter to Mr. Hudson in my letter-book, and a copy of that I can get. It was written after a conversation with the Commissioner, who asked me what I valued the dump-car at, and asked Messrs. Hudson Brothers what they would build a number for. I wrote to them the same afternoon, and got a reply. My letter I have in my book, and the reply you have. I will

get you a copy of my letter.

1054. Mr. Chapman.] There is one portion of your evidence which appears to me the most alarming of the whole lot. You state that the axles of the dump-cars are the worst you ever saw? That is a fact, sir.

It may hurt my reputation to say it, but I still insist upon it. It is my honest opinion.

1055. If an accident were to occur from these very bad axles ought not the Commissioner to be held highly culpable for using them? He would if I reported them to him. I apprised Mr. Scott of what I saw, and I presume he would send that report on or send a paper to the Commissioner himself. I think it is a mistake to not the order the redsider. it is a mistake to put the axles under the vehicles.

1056. Was the system of coaling that you speak of and explained to the Committee introduced by you before the ordering of these dump-cars? Yes, and approved of by the Commissioner.

1057. You also said that by the using of your coaling waggons you would save $3\frac{1}{4}$ d. or $3\frac{1}{2}$ d. a ton without depreciating the coal or handling it. How many tons are you supposed to use in a year? We use 105 tons a day at Sydney.

1058. Will you give us the approximate quantity of coal likely to be used on the south and west? Oh,

yes; I can give you that approximately.

1059. Mr. Sutherland.] You have stated that your truck that you have invented for coaling will carry 20 tons of rails, and you say that the dump-car will carry 20 tons of rails? That is stipulated on the car; but judging from the load on it I would like to reduce it to 15 tons to be safe. It is printed on the side of the car that it will carry 40,000 lbs., that is, 20 American tons; but I think 15 tons is sufficient

1060. What do you say yours will carry? I guarantee to carry 20 tons, under all conditions of railway

traffic, of anything that can be put on it that will ride on a platform waggon.

1061. What do you say will be the difference in the life of your car and the life of this dump-car? I would say that mine would last twice as long, as mine is iron and that is wood. Mine is scientifically constructed, and I do not care who examines the design. I do not hesitate to submit the designs to any man, a locomotive engineer, and competent to judge.

Mr. Edward John Bourn called in and further examined:-

Mr. E. J. Bourn. 5 Sept., 1884 1062. Chairman.] The Committee asked you to examine the dump-cars now being put together, and to give us your opinion concerning them;—have you done so? Two or three times.

1063. Have you any reason to alter your opinion concerning them? They are making a little better pro-

vision to keep the dumping arrangements from slipping out.

1064. Do you think the arrangement they have made is a safe one? I can hardly say that it is. I am afraid there is not sufficient precaution to keep the car safe in a sharp curve.

1065. You think there is danger? I have a doubt. 1066. Would they be safe going over the mountains? I would like to see one go over first before I pronounced an opinion on that point.

1067. Have you examined the king-bolt? They have a very good arrangement. The pin allows it to dump

1068. Is there any danger of that jumping out? No; for it is keyed.

1069. Is there any danger of its being broken by a sharp shunt? I think it would take a sharp shunt to break it.

1.070. Do you think it would be broken in a sharp shunt? It might be broken at the knuckle or joint. 1071. If the king-bolt broke in the way you say would the frame be likely to become detached? The would be a liability in that case, but with the king-bolt perfect there would not. 1073.

1072. Supposing the king-bolt broke? They are only cast.

Mr. E. J. Bourn.

5 Sept., 1884.

1073. Would you recommend a car of that description for running over our mountains? I should like to see it tested first with regard to the dumping apparatus.

1074. Have you examined the buffers? Yes.

1075. What is your opinion about them? They are cast-iron.

1076. Do you think they are suitable for our lines? I do not like them as well as our own.

1077. What is your opinion as regards the workmanship, the design, and the materials used in connection with the dump-car? The timber is of good quality and it is well put together; but there is nothing particularly smooth in it. In the framing there is not sufficient strut put to resist a blow or to prevent the buffer being knocked right through the head-stock.

the buffer being knocked right through the near-stock.

1078. Have you examined the wheels? I have not had time to go over the wheels.

1079. Have you examined the axles? No, not yet. The ironwork is very rough.

1080. Is it a car that you would pass? Not in its present state.

1081. Independent of the axles and wheels? Yes, independent of the axles and wheels. The first head-stock would have the whole weight of a train upon it and would be very likely to be pulled out in the case of there being twenty cars or so attached to it. There is no continuous draw gear, and a piece of $4\frac{1}{2}$ wood has to bear the weight of the whole.

TUESDAY, 16 SEPTEMBER, 1884.

Bresent :-

Mr. CHAPMAN,

Mr. GARRARD,

MR. SUTHERLAND.

SYDNEY SMITH, Esq., IN THE CHAIR.

The Hon. Geoffrey Eagar, called in and examined:-

1082. Chairman.] You are Under Secretary for Finance and Trade? Yes.

1082. Chairman.] You are Under Secretary for Finance and Trade? Yes.
1083. Have you brought any papers with you with regard to the leasing of the old Atlas Company's works to Messrs. Carson Woods and Company? No.
1084. Do you know anything in regard to the leasing of the premises? All I can say is that the property to which you refer was resumed some time ago by the Works Department for public purposes; and on a particular date Mr. Woolcott was appointed to collect certain rents, subject, I infer, to the approval of the Minister. Then the matter came under the cognizance of the Treasury, as we had to look after the revenue; on a particular date we wrote to Mr. Woolcott, pointing out to him his duties, and asking him to furnish the necessary bond and make the necessary declaration, and instructing him to lodge his collections daily in the Bank, to furnish monthly attested accounts to the Auditor-General, and to furnish us with a list of the tenements on the resumed land at Pyrmont, and the particulars of the rents payable upon them. (The letter was read by witness and handed in. See Appendix marked B.) Beyond that upon them. (The letter was read by witness and handed in. See Appendix marked B.) Beyond that letter I know nothing of the transaction.

1085. Had Mr. Woolcott any authority to lease the premises? We had nothing to do with that. It was notified to the Treasury by the Public Works Department that Mr. Woolcott had been appointed to collect the rents of the property. The relation we had with him was this, that he was under the Audit Act a public accountant, he was under certain liabilities and obligations, and the object of the letter I have just handed in was to bring him in contact with us as a public accountant. I only knew him as a revenue officer, accountable to the Treasury.

officer, accountable to the Treasury.

1086. Have you any papers in your Department showing the amounts of rent to be paid? No, we waived that, but kept a careful check upon his receipts. We did not press for the list of tenements.

1087. How did he ascertain the names of the tenants? He had his own leases, I presume.

1088. Who furnishes him with a list? That I cannot say. Our instruction to him was to give us the list of tenants, and we did not press for it on the understanding that he was to furnish the Auditor-General with particulars; I do not know who are the tenants of the property; all I know is that we look after the revenue and we leave the Auditor-General to look after the accounts.

1089. You cannot say who pays the money? No. we keep no check on the accounts: we have nothing

after the revenue and we leave the Auditor-General to look after the accounts.

1089. You cannot say who pays the money? No, we keep no check on the accounts; we have nothing to do with the management of the property, nor have we power to interfere.

1090. You are able to say who Mr. Woolcott got his instructions from respecting the rent to be collected at Darling Harbour? He received instructions from us to pay it into the Treasury.

1091. But regarding the amount of rent to be collected? I do not quite understand.

1092. We understand that the premises at Darling Harbour have been leased to Carson Woods & Co. at a certain rental, and we want to know by whose instructions this rent was collected? That I cannot tell; I can only say that it was not by any instructions from the Treasury, beyond those contained in the letter a certain rental, and we want to know by whose instructions this rent was collected? That I cannot tell; I can only say that it was not by any instructions from the Treasury, beyond those contained in the letter of general instructions. For up to this moment we do not know who is the lessee, or what he pays. 1093. Mr. Chapman.] You are not aware whose duty it is to arrange the amount of rent to be paid weekly or monthly, as the case may be? I imagine that the property was placed in Mr. Woolcott's hands by the Works Department, and that he was to let subject to the approval of the Minister, and to account for the rents to the Treasury. He manages different properties for us; he manages that property for the Works Department; he manages some property for us distinct from the Works Department; what he does is to let subject to the approval of the Minister; he looks after repairs, pays all the rates and taxes; he has, in fact, the fullest control, subject to the approval of the Minister.

1094. What we want to get at is this: For instance, there is property at the corner of Market and Eliza-

1094. What we want to get at is this: For instance, there is property at the corner of Market and Elizabeth Streets;—who arranges the rent of that? Mr. Woolcott, of course.

1095. It is all left to Mr. Woolcott? I presume so; he is looked to to find tenants; he then submits his proposal, and we accept; he does so in regard to all properties in which the Treasury is concerned, and I properties in the same in regard to all properties approached with the Works Department. presume it is the same in regard to all properties connected with the Works Department.

William Prout Woolcott, Esq., called in and examined:

W.P. Woolcott, . Esq. 16 Sept., 1884.

1096. Chairman.] What position do you occupy under the Government? Collector of rents for resumed

1097. Have you anything to do with arranging the rents, the amount of rent to be paid for any Government property? I have.

1098. Do you remember making any arrangement in regard to the leasing of the old Atlas Company's Works to Carson Woods and Company? I do.

1099. Did you arrange that? I did.

1100. Subject to the approval of the Commissioner of Railways or the Government? Not as to rent.

1101. Have you full power to lease Government property without referring the matter to the Minister? In temporary matters such as this was; simply because I thought it was a matter in which there could be no doubt as to the rent we are getting for it under the circumstances, the tenancy being a short one.

1102. Who made application to you for the lease? Mr. Woods.
1103. For what purpose, did he say? For the purpose, he told me, of putting together trucks.
1104. What kind of trucks? Railway trucks, I believe; in fact I have been over there once or twice

since, and have seen them putting together trucks.

1105. Was the Minister for Works, or any member of the Government, made acquainted with your letting these buildings? I may say, first of all, that I am an officer of the Treasury; these properties are letting these buildings? I may say, first of all, that I am an officer of the Treasury; these properties are sent to me to deal with as soon as they are resumed; and when I get this notice I am supposed to find tenants for them; where the properties are vacant I get them occupied; as a rule the rents are fixed by previous tenants; but where valuations have to be made I have to consult Mr. Byrnes and Mr. Mills. But I may say that I have not had more than half-a-dozen instances of valuations where such a course was necessary, where the rent was not fixed by the previous tenant. Then, I being an officer of the Treasury, these properties are put under the control of the Treasury, so that they can have more control over me and the revenue derived from the properties. I am, as an officer of the Treasury, directly accountable to the Treasury to give any information at any moment for anything I.do. The properties that have been placed in my hands in this way to manage are under several Departments. For instance this Pyrmont property to which you refer is under the Works Department; some of it is under the control of Mr. Goodchap, and some of it under Mr. Moriarty. If I were dealing with the part connected with the water I should have to consult Mr. Moriarty; if dealing with the land I should have to consult Mr. Goodchap, as to how far I was justified in letting the place. I can speak as to this property specially. 1106. I wish you would do so? This special property was occupied by the Atlas Works, and was occupied by them from the first; they have not paid rent, inasmuch as they were exempt under the conditions of arbitration, so that the property has really never been let for a tenancy. When it was taken by the Government it was a question to arrive at the value to be paid to the owners; that value was arrived at by arbitration in Court; by that arbitration the owners were allowed to occupy the land free; so that until Mr. Woods went there no other tenant was ever in possession of it. When Davy and Company until Mr. Woods went there no other tenant was ever in possession of it. When Davy and Company occupied it the Government took possession of some portions of it, and took the property as they wanted it. The only portion left consisted of some sheds now occupied by Carson Woods and Company. It was my duty to inquire from Mr. Goodchap and Mr. Moriarty, when Messrs. Davy & Co. left, how I might deal with the property for the purpose of getting a revenue in the shape of rent. I was informed that it was not desirable to deal with it, because they could not give any length of -nothing that would induce any person to take it.

1107. Did you consult Mr. Goodchap or any other Government officer regarding the amount of rent to be paid? No, I did not; because I had a certain license to let the property for a short tenancy for what I considered to be a reasonable rent for the Government under the circumstances. For instance, Mr. Woods is a weekly tenant, and I should not think it necessary to consult any one; I should not know who to go to; who would know better than myself what would be a reasonable rent under the circumstances. I dealt with it the same as I should deal with my own private property, if I had to deal with it for a weekly tenancy. I had to catch the first I could as a tenant, and to get the best rent I could. But I did not inagine I should get a tenant at a weekly tenancy, who would put goods there subject to be turned out at a week's notice. This gentleman, Mr. Woods, who would put goods there subject to be turned out at a week's notice. This gentleman, Mr. Woods, who was a stranger to me, applied for the premises, and I was only too glad to get a small rent under the circumstances. The place was idle, and I immediately advised the Commissioner that it should be let at a weekly tenancy; when I had let it I advised the Railway Department of what I had done, and my

action was confirmed.

1108. Who did you write to? Mr. Goodchap.
1109. Do you remember the date? At the date of the agreement, a copy of which I now hand in.
(Agreement to let premises handed in and marked Appendix C.)
1110. Did you receive any communication from the Government when you had advised them in regard to the matter? I saw Mr. Goodchap, who said the arrangement could remain until the Government wanted

the property.

1111. Mr. Chapman.] It was a verbal communication? I gave him a memorandum of the letting.

1112. Did he give you one in return? No.

1113. Are you empowered to give short leases? No, not without special application and consent; I can act in regard to a weekly tenancy such as this was, subject to confirmation, rather than let it remain idle. It was only this man's necessities that induced him to take it; he had his stuff here and was prepared to take the risk of being turned off at a week's notice; in fact, since he was there the Government intimated that they intended to make a road through the place. I gave him to understand that I would let him the place, but that if the Government required him to clear out at any time he must go; he said he would clear out at a few hours notice if necessary.

clear out at a few hours notice if necessary.

11.14. You have not in any one instance, on your own account, granted a lease? Never.

11.15. For any of the Government properties? Never; in only one case here that I know of has a lease been granted. Rent is no object to the Government if they require the property for public purposes. The difficulty is to get persons to go in as tenants with the risk of being turned out on short notice. It is only the tenants already occupying the property who are likely to remain. Rent is no object to the Government if they require the property for the purposes for which it was resumed. I am not authorised to give a lease of any sort; but in regard to a weekly tenancy I am, subject to approval, empowered to let. I knew that this property was not likely to be required for a week, and I knew also that the tenant would be prepared to go out at any moment. that the tenant would be prepared to go out at any moment.

Mr. E. J. Bourn recalled and examined:

1116. Chairman.] When you were being examined previously before this Committee, I asked you if you had examined the wheels of the cars which have been recently imported;—have you since had an oppor-

tunity of examining them? I have.

1117. Will you kindly state the result of your examination to the Committee? On Saturday, the 6th instant, I went down to Darling Harbour, in company with Mr. Scott, the Locomotive Engineer. We examined fifty-four of the bogies standing on the Government line, outside of the works. in the axles of sixty-nine of them the iron was very bad; it had not been properly welded; it was fagged; there were holes in some, extending from one boss of the wheels to the other; in some others the iron half way across was very bad. In other cases we found the iron laminated very much, on account of the axles not having been worked well together. In fact, out of the sixty-nine bogies we examined, I did not consider there was one of them that ought to be put under a carriage. On Monday, the 8th instant, I went down and examined ninety-six bogies standing in the works of Messrs. Carson Woods & Co. I found that 101 axles out of the ninety-six bogies I examined were in a similar state to those I had examined on Saturday. I then gauged the diameter of the axles in the centre and found they varied from 33 inches to 37 inches, whereas those in the pattern car were 4 inches.

whereas those in the pattern car were 4 inches.

1118. Have you anything further to add in regard to the bogies and the ironwork? Nothing fresh from what I have already stated. The ironwork on all was very rough.

1119. Do I understand from your evidence that most of the bogies and axles are unsafe? There were 69 under 57 bogies; those 69 out of 114 were, I consider, not fit to be put in. That was on Saturday. Then I got 101 out of 192 in the other. They were all the bogies I was able to examine. There were others; but they were covered with material and I could not get at them.

1120. Is it true that four of these dump-cars are now in the Eveleigh yard? Yes. 1121. Have they been received there on the certificate of any person? Not on m Not on my certificate; and I do not know by whose authority they were taken there.

1122. Is it usual to place cars on the road before they are received under a certificate? No.

1123. Would you conclude, by their being at Eveleigh, that they had been received by the Department?

They have not been received by the Locomotive Department.

1124. But supposing that trucks were put in the Eveleigh yard, would you conclude that they had been received? I do not think it is to be understood that they have been received; because when I saw them there I was told they had only been removed there to enable the fitters to get some more out.

there I was told they had only been removed there to enable the littles to get some more out.

1125. Did they travel all right to Eveleigh? They were shunted in the Sydney yard, and three of the brakes were broken; being too low down they came in contact with the cross rail.

1126. Is it not likely that a similar accident will happen to the other cars on account of the brakes being too low down? They are altering them now, or else they would be liable to accident. The foreman of the works told me they were raising the brakes an inch and a half so as to clear the rail. 1127. Three out of the four you speak of were damaged? Yes.

1128. Mr. Chapman.] In speaking of the axles you made use of the term "fagged together?" What we term fagged—that is iron made out of scrap iron, and not worked properly; the iron had not been properly welded together.
1129. That is to say the welding was bad? Badly forged.

1130. And consequently they are unsafe through being badly forged? They are unsafe.

1131. If by any means they were put into use, without a strict examination, would there not be a danger to life and property in consequence? Yes, there would be great danger of their breaking.

1132. Mr. Sutherland.] Who has the authority to receive these trucks and shunt them about, and run them on the sidings at Eveleigh? I cannot say.

1133. You say you have not given any authority for receiving them? No; as soon as I saw them in the yard, I reported them to the Engineer as being there. I told h m I did not know by whose authority they had been put there, and asked him how I was to act.

1134. Then as a matter of fact the manufacturers are making use not only of the shed but also the approaches to the shed and the Eveleigh yard, for getting rid of their trucks as soon as they are put together? Yes.

1135. And the Government engines move the trucks backwards and forwards for them? Yes, they move them backwards and forwards.

1136. And on the removal of these trucks from Darling Harbour to Eveleigh it was found that the brakes were too low? Too low.

1137. And from that fact they are now altering all the other brakes? Yes.

1138. Chairman.] Are you short of room at Redfern? Yes, very much confined for want of room.

1139. Could you have utilised the old Atlas Company's works to advantage? It would be handy provided a roadway was made into it for repairing waggons.

1140. How long has the place been idle? I cannot say.

1141. Mr. Sutherland. Can you give the Committee the dimensions of the sheds occupied by Carson Woods and Company? I cannot.

1142. Will you take the dimensions of the sheds occupied by those gentlemen sometime, and the portions outside that are occupied by them—because I think there is a large portion of the ground outside the sheds occupied by those gentlemen with material, and by trucks as they are put together, so that it is desirable you should take the dimensions of the premises and attach them to your evidence for the information of the Committee? I will do so. (See addendum to evidence.)

1143. Mr. Chapman.] When you were being examined before the Committee previously, you stated that the ironwork of the sample car was very roughly done? It is rough work.

1144. And now you say that though it is rough work, and very badly done, the work of the new cars is not equal to it? It is not.

1145. That is to say, although the work on the sample car is roughly done, that on the new cars is rougher still? Yes.

1146. On whose certificate will these cars be passed? It is my place to pass them; it is my place to give a certificate in regard to all new stock. When I pass any new work I send a memo. to the Traffic Department to fetch it away, and they report it to the Department as being taken over.

1147.

1147. Chairman.] When you were previously under examination before this Committee I asked you E. J. Bourn. regarding the manner in which the buffers are attached to the head-stock of the dump-cars. I should like you now to explain the difference between the way in which these buffers are secured in these dump-cars and the way in which buffers are secured to the ordinary rolling stock? I have prepared a sketch which I now produce, showing the way in which the buffers are attached to the dump-cars. In the ordinary rolling stock they are attached to the head-stock, but the head-stock is provided with a diagonal These are fixed on the head of the sole-bar, and being fixed with iron plates, the buffer strikes in shunting. The weight not only rests on the head-stock, but is supported by a diagonal brace, whereas in the dump-cars the head-stock is framed on to the sole bar and to the intermediate, leaving a space of 2 feet 4 inches between; the buffer is then bolted in the centre of that space, and there is nothing to resist the blow or to prevent the breaking of the head-stock. 1148. There is no continuous draw gear in any of the trucks? No.

ADDENDUM.

In accordance with the request of the Committee, I herewith give the sizes of sheds and ground occupied for the erection of dump-cars at Darling Harbour:—

One shed measures 113 ft. 5 in. \times 53 ft. 6 in. One ditto 73 ft. 9 in. \times 36 ft. 8 in.

There is also a space between the sheds measuring 121 ft. 9 in. \times 121 ft. 3 in. One part of line occupied by five of the dump-cars, outside of works, takes up 180 ft. of space.

The ground on which a number of bogies is standing is outside the rails; this occupies a space of 176 ft. 10 in., but varying in depth from 16 ft. to 62 ft.

E. J. BOURN, 19/9/84.

Mr. G. Bingham recalled and examined:-

1149. Chairman.] Have you examined the dump-cars recently imported? I have not.

G. Bingham. 1150. Can you tell the Committee anything further about them than you have already stated in your evidence? Not with regard to the new ones.

1151. Do you know whether any of them are at Eveleigh? Four of them have been brought up from Darling Harbour.

1152. Have they been received by the Government? Not that I am aware of.

1152. Have they been received by the Government. Not shall a water of.

1153. Is it usual for the Government to bring rolling stock up to Eveleigh before it is passed? Not until it is passed by the Inspector of Rolling Stock.

1154. Were these trucks taken to Eveleigh by the Government engines? Yes, I believe so; one of our examines told us so; but who gave instructions for it to be done I do not know.

1155. Is it true that whilst the cars were being taken there part of the brake-rods broke? Yes, a report was sent to the office that the brake-gear of three of them broke through catching the rails when going over the crossings.

Mr. Thomas Midelton recalled and examined:

Mr. T. Midelton.

1156. Chairman.] When you were last before the Committee you were asked to produce certain papers in regard to the construction of light rolling stock;—have you brought them with you? No; I have only the table of the weights, the same as I had last week. With regard to the drawings I thought I had the table of the weights, the same as I had last week. With regard to the drawings I choose I had better suggest to the Committee that the Commissioner should be applied to to furnish them; I did not care to take upon myself the responsibility of taking drawings without his permission. I have thought it best to suggest to the Committee that the papers should be sent for through the Commissioner's office.

I do not care to bring documents here which it strikes me should come from my superior officer. At the same time I wish to ask you to allow me to withdraw the opinion I expressed unintentionally on the design lying on the table last week, in answer to a question put to me for an opinion as to a scheme of coaling engines. I now see that it would be wrong for me to give an opinion upon a design produced by an officer at the head of my branch. If you will allow me to withdraw that opinion I should be glad. the time see that I was taking an indiscreet course. I did not at

1157. Do you wish to withdraw the evidence given at the last meeting of the Committee because you have altered your opinion as to the design, or only because you do not wish to be found criticising a superior officer's design? Only because I do not wish to be found criticising the design of a superior officer. 1158. Mr. Sutherland.] When the Chairman put the plan before you, and asked you questions with regard to it, you supposed you were bound to answer the questions? Certainly I did. 1159. Chairman.] You were asked to produce some plans and accounts;—will you kindly furnish them to the Committee? I was asked to supply plans of the waggons which I had referred to in my evidence, and Mr. Charman asked me to supply an estimate of the question of coal we used per annum. I have the

Mr. Chapman asked me to supply an estimate of the quantity of coal we used per annum. I have the

Mr. Chapman asked me to supply an estimate of the quantity of coal we used per annum. I have the weights properly tabulated in two sheets, which I now hand to the Committee. One sheet refers to carriages, the other to waggons. (Two tables produced.)

1160. I do not find any estimate of the cost? No.

1161. Could you give the Committee an estimate of the cost? Yes, I can do so.

1162. Will you be prepared at the next meeting of the Committee to furnish us with the estimated cost of each description of vehicle referred to in the tables you have just handed in? Yes.

1163. Mr. Chapman.] What quantity of coal is used per annum by the Locomotive Department for locomotives? In round figures it amounts to 127,000 tons.

1164. And at a saving of 3½d. per ton? At a saving of 3d. per ton it would amount to £1,537. That is only half the saving, because the removal of ashes forms another portion of my scheme, and will give a further saving of 3d. per ton.

1165. Chairman.] Have you examined any more of the dump-cars since you were last before the

1165. Chairman. Have you examined any more of the dump-cars since you were last before the Committee? No.

1166. Is it true that four of those cars are at Eveleigh? I saw four dump-cars there as I passed by 1167. in the train on Friday evening.

1167. Is it usual for the Government to take over cars and put them on the line without first accepting delivery of them? In delivering cars it is usual to have them passed by Mr. Bourn. I do not know

what has taken place in regard to the cars you speak of. As regards their being at Eveleigh, I imagine they were placed there to be out of the way of the Darling Harbour sidings. Whether they have been

received officially or not by our Inspector I cannot say, but I think not.

1168. Have you ever been requested to furnish a comparative statement of the carrying capacity, weight, size, dimensions, and cost of the different cars? Yes.

1169. Who requested you to furnish such particulars? The
1170. How long ago is that? About three months, I think.

The Commissioner, and I supplied them.

1171. Are the returns which you have just handed in a copy of those which you forwarded to the Commissioner? They are. When I was before the Committee at its last meeting I stated that I wrote to Hudson Brothers, asking them for a price, and that letter was copied. I was under the impression at the time that I wrote an official letter to them, asking the price of a dump waggon, but that is not the case I find. I have letters here which show the transaction. The letter I wrote asking Mr. Hudson to call was not copied, as I thought; it was simply a request to Mr. Hudson to call at my office.

1172. Can you bring any authoritative information from any American paper regarding the accidents which occur on the American railways through working with cast-iron wheels or otherwise? Yes; I can produce the Railroad Gazette, in which are records of the accidents which occur in America. But I must qualify that by saying that they are official papers—they are papers taken into our office for office use; we cannot take them out of the office without the Commissioner's sanction. It is a public news-

paper, and perhaps might be had at the School of Arts.

1173. We had it given in evidence by one of the witnesses that Hudson Brothers' firm take three American papers, on whose authority they rely for almost everything connected with railways and rolling stock;—are there any such papers in your office, or under your control? Yes, the Railroad Gazette is one I think which I have referred to.

1174. Is it in your power to produce that without the authority of anyone else? I do not think it is. 1175. Who is the person who has the custody of those papers? The Record Clerk; they are in his custody, and we get them to read in the same way that we get any other official papers, and we are expected to put them back on the file. I introduced that paper to the office myself, and I read it as often as I can find time to read it.

1176. And you think the paper you mention a fair authority upon the question? Yes; it is an official record, something like the Board of Trade record of accidents which take place in England.

1177. To whom should we have to apply to get that before the Committee? I think the Commissioner is the proper authority to apply to. If you apply to him I daresay he will supply them either through Mr. Scott or myself.

1178. The papers themselves would I suppose be of little use to the Committee unless someone who understood the matter explained them? If the papers were furnished by the Commissioner they could

be referred to by me when they were on the table.

1179. Will-you prepare a tabular statement from the Railroad Gazette or other authority relative to accidents which occur through defective axles or wheels which occur on the American lines? do that.

1180. I suppose the Railroad Gazette would state whether the accidents were from cast-iron or wroughtiron? Yes.

William Scott, Esq., Locomotive Engineer, recalled and examined:—
1181. Chairman.] Since you were last before the Committee, have you examined the dump-cars that have W. Scott, Esq. recently arrived in the Colony? Yes.

1182. Will you kindly favour the Committee with your opinion regarding the workmanship of those cars, 16 Sept., 1884. and in regard to the cars themselves? The workmanship is similar to the class of American work turned

1183. But I want to know whether it is good work or not? Well, it is fair. There is one thing I noticed in the axles, they are very inferior. I have applied for four of them, in order to have them tested. 1184. The axles you say are very inferior? Yes. 1185. Have you examined the wheels? Yes.

1186. What is your opinion in regard to them? They are the ordinary style of American wheel, cast-iron

chilled.

1187. Are they of good quality? To all appearance it is the wheel that is used in America; you cannot tell how they will turn out until they have been running for some time.

1188. Do you consider the bogies safe to be run on our lines? The bogie with the dumping arrangements?

1189. Yes? But I should like to have a trial of them before I could say positively.

1190. How many of the new cars have you examined? I have examined three that have been put together; I have examined some seventy-five bogies with the axles under them.

1191. What was the result of your examination? I found that in fifty-seven bogies sixty-nine of the axles are defective; I marked them defective.

1192. Are we to understand from that that they are not safe? I do not consider the axles safe to run. I have applied for four so that we can test them.

I have applied for four so that we can test them.

1193. Is it true that there are four cars now at Eveleigh? Yes. 1194. When were they sent there? One morning last week; I One morning last week; I cannot say the day; I noticed them there

in the yard.
1195. By whose orders were they sent there? I believe by the orders of the Traffic Manager; they were brought up from Darling Harbour.

1196. Is it true that one of the brake-rods was damaged? Yes, I think there are two, if not three of them; the joint of the brake was down too low, and it caught the cross rail. That is a matter that can be altered, and the remainder are being altered.

1197. Did you examine the way in which the buffers are attached? Yes.

1198. What is your opinion regarding the way they are attached as compared with the usual method? That is a weak part of them. The tracing I produce will show where the defect lies. The weakest part, I consider, is where it takes the bumping from the buffers. It may be necessary to have that strengthened. 1043—Ť

Midelton.

Mr. T.

W. Scott, Esq. Even to strengthen it there would be a difficulty, on account of the framework, when dumping, being brought close to the wheels. They could be stiffened to a certain degree, but not to the extent that our 16 Sept., 1884. own frames are made.

1199. Mr. Sutherland.] It would neither be safe nor lasting? I do not say it would be unsafe, but in shunting there would be the risk of getting the buffer-plank broken.

1200. Chairman.] Even if strengthened as you propose there would be great risk of damage? I think it possible to strengthen it to make it secure.

1201. I understood you to say just now it would be difficult to strengthen it in the way you would wish? With diagonal timbers. The only way it would have to be done would be by wrought-iron knees. 1202. There is no continuous draw-gear with any of the dump-cars? No. 1203. Do you not think there would be a difficulty in dumping if there were a centre draw-gear there?

The centre dump-axle takes up the room of the draw-gear.

1204. Do you think it is wise to run rolling stock of this description without the continuous draw-gear?

It is stiffened there by the long truss-bars; it would be better if they had the continuous draw-bar.

1265. After carefully examining the cars, what is your opinion regarding their adaptability to our lines?

For general traffic I do not think they are a suitable truck.

1206. But with regard to any traffic, having in view the workmanship, material, and want of a continuous draw-gear, the manner in which the buffers are attached to the head-stock, &c., what is your opinion in regard to the dump-cars recently imported? They are not what I would recommend.

1207. Would you recommend them to be used at all? For coal purposes they might be utilised.

1208. Do you think it is safe to use them as they have arrived? Not with the present axles.

1209. I am referring to them with the present axles, wheels, the way in which the buffers are attached to

the head stock, and without the continuous draw-gear;—do you consider them to be safe for working on our lines? I do not think they will be a success; but I do not think I should like to say they were unsafe, with the exception of the axles; I would not let the axles run on any account.

1210. But you say you would not recommend them and you would not say they are unsafe? No. 1211. And yet you point out certain defects in them? Yes.

1212. Do you not consider the defects you point out are of such a character as to warrant you in condemning their use? They will have to be improved upon from what they are at present.

1213. But I am referring to them as they are at present? I should like to see a practical test. 1214. But you have examined the cars? Yes.

1215. And you say there is great objection to the way in which the buffers are attached? That is a weak

place.
1216. You admit it would be better to have the continuous draw-gear? Yes.

1217. You say the axles are defective? Yes.
1218. And that the wheels are not good? I have no hesitation in condemning the axles.

1219. Why is there any necessity for a test, when you condemn the principal points in the construction of these cars?' I should really like to see a practical test before I should say positively that they should not

be used. But as I said before, I would not recommend that class of car for our traffic.

1220. In what better position will you be after the test? We should see how they would work round our 8-chain curves.

1221. Could you tell then? Yes, and by taking a load.

1222. And the buffers? The practical use of them would prove whether they are strong enough or not that is the head-stock.

1223. In regard to other rolling stock, is it not usual to have some responsible officer at the works to inspect the cars or rolling stock when they are being put together? Yes, to inspect the work as it progresses. 1224. I presume that if the inspector finds the work defective he throws it out? Yes, he objects to it,

condemns it if necessary.

1225. Does he ever wait until the whole car is built, and then condemn it afterwards? No.

1226. If an inspector sees any defect in the material or workmanship, does he not condemn it at once? Yes, it is usual to condemn it at once as the work proceeds.

1227. Would they have any other test if they saw the design was not the correct thing? No.

1228. Has any officer of the Government been present when these cars were being put together?

Mr. Bourn inspects them almost daily. 1229. Has he made any report to you?

Yes.

He points out the defects. He speaks of the want of the 1230. What was the nature of such report? continuous draw-gear as a very great objection.

1231. Does he point out any other objections? The axles, he mentions them especially.

1232. Does he say anything with regard to the buffers? Yes, he says the buffer-he

Yes, he says the buffer-heads are made of cast-iron.

cast-iron.
1233. If you received a report from Mr. Bourn in regard to any other rolling stock similar to his report on these dump-cars, would you consider a practical test necessary? We reserve the power to reject any vehicle; and with these dump-cars we have the power to reject them if we do not consider them safe.
1234. Have you any contract signed to give you that power? Yes, I think you will find it in the printed

1234. Have you any contract signed to give you that power? Yes, I think you will find it in the printed papers. On page 10, No. 31, you will see this clause: "The vehicles must be finished in the most substantial and workmanlike manner, and in every respect to the entire satisfaction of the Locomotive Engineer." 1235. Do you know if that contract has been signed? I cannot say; I should think the contractor would not expect to get any money until the contract was signed.

1236. Have you sent in any report in regard to these cars? Yes, several. I have asl have four of the axles to test. That request is before the Commissioner now, I believe. Yes, several. I have asked permission to

1237. Independently of the axles and wheels, what is your opinion respecting the dumping apparatus, and the general design or construction of the car? I have no great opinion of it.

1238. Do you think it would be wise to run this car over our mountain line with a heavy load? I should

prefer running our ordinary trucks.

1239. Would you, as Locomotive Engineer, recommend these cars to be run over our mountain line?

I would not recommend them, but before I condemned them I should like to have a practical test. 1240. You have examined them very carefully? So far as workmanship is concerned, they are not what

I would recommend; but, as I said, before condemning them, I should like to have a practical test, as far W. Scott, Esq. as the waggons are concerned; as regards the axles, they cannot run.

1241. You do not think a test necessary in regard to the axles? I have applied for four of them in order 16 Sept., 1884.

that I may test them.

1242. But you have no hesitation in saying that they are unsafe? I should object to any of them running, from what I can see. The axles appear to have been made of scrap iron, jagotted from the scraps, instead of the ordinary scraps being cut off and repiled and drawn out a second time; that is my impression, and they seem to bear that impression out from what I can see.

1243. Are they similar in that respect to the sample car? The sample car seems to be rather a better

job, the axles especially; they are one-eighth of an inch larger in diameter.

1244. Would you recommend the axles in the sample car? There is nothing that I can see objectionable

1245. Do you think it would be safe to run them? The axles? 1246. The axles and wheels? Yes, so far as I can see.

1247. Are they not made from the same class of material? They do not appear to be; they have a

1248. Has Mr. Bourn reported that they are unsafe to run? He has said as much, but he has not directly said they are unsafe; we could not take them over in their present state.

1249. Mr. Chapman.] Are those three or four dump-cars at the Eveleigh Station supposed to have passed? No.

1250. Is there any likelihood of their being used at the present time? No, they are marked not to be used; the Manager has got notice as well; we are taking precautions against that.

1251. Mr. Sutherland.] Who is taking the precautions? I have taken action to prevent their being taken into use until I have certified as to their safety.

1252. Is there any stock running on our railways without your certificate of safety? I do not think

there is; there is not to my knowledge.

1253. You feel yourself responsible for everything put on the line and for the safety of everything put on the line? Yes; I think I should be looked upon as the responsible party if anything went wrong.

1254. And you have not given any authority to receive these dump-cars which are now in the yard at

Eveleigh? No; as soon as I saw them in the yard I made inquiry and found they had been brought up by the Traffic Department.

1255. Mr. Chapman.] You say there is no rolling stock on the lines without your certificate? No, there

1256. What about the Cowdery couplings;—have you given a certificate for them? No, they are used for

the ballast trains and coal trains, not for general traffic.

1257. Have any of them been sent up the line? There are some up the line, being used for ballasting; , but not to my knowledge have any been sent up for use on the ordinary traffic by the ordinary trains.

1258. Mr. Sutherland.] Are you aware that these couplings have been used on the traffic? Not for the

regular traffic—that is, not that I am aware of.

1259. Are you not aware that I am aware of.

1259. Are you not aware that the officers of the Traffic Department have refused to be answerable for the use of them, and have reported against them? They have refused to send them out on ordinary trains.

1260. There is a large number of trucks lying in Eveleigh yard with these couplings now, and it is stated by some of the officers of the Truffs Department that they cannot be used expent for hallesting the line? by some of the officers of the Traffic Department that they cannot be used except for ballasting the line? I believe that is correct.

1261. They are not allowed to be used on the traffic, or have not been certified to for use on the traffic? The Traffic Manager refuses to send them out on the ordinary trains

1262. And you have always refused to certify that they were safe? Yes, I reported against them, I think.

1263. Can you inform the Committee what number of trucks have been supplied with these couplings? I cannot give the exact number now, but I think that over 200 ordinary trucks have been supplied with

1264. Can you, when your evidence is sent to you for revision, attach to it the number of trucks that have been supplied with this class of coupling? Yes, I will do so. I find that 250 D trucks have had this coupler fitted to them.

1265. You have stated in your evidence that the head-stocks of these dump-cars are not strong enough for the uses to which they are to be put? They are not strong enough to resist the bumping they will be subjected to.

1266. What is the size of the timber in the head-stock? 12 inches by 43 inches; they are of either ash.

1267. American ash? Yes.

1268. What would be the solid contents of the timber left in the head-stocks after the mortices are made and the bolt-holes? I cannot state from memory, but I will ascertain and inform the Committee.

I find that the total cubic contents of the head-stock of the new dump-car is 6,103 cubic inches. The total cubic contents of all perforations in the same, that is, mortice-holes, holes for draw-gear bolts, &c., is..... 293

The cubic contents of timber remaining in head-stock, is.....

1269. Have you been required by any one to inspect these vehicles as they were being put together? No; I consider it is part of my duty, together with Mr. Bourn, to inspect them; I delegate him to inspect them personally, and if there is anything special he draws my attention to it. 1270. And after he reports anything particular you go with him to make an examination? Yes. 1271. But you say you have had a report from Mr. Bourn, and you have sent your report to the head

office? Yes.
1272. Will you supply this Committee with a copy of that report? Yes. 1273. Chairman.] I understood from you just now that notwithstanding you reported that the new couplings were unsafe, there are about 200 of them in use? There are something over 200 of them in use; I do not know that I made any special report that they were unsafe.

1274.

MINUTES OF EVIDENCE TAKEN BEFORE THE SELECT COMMITTEE

W.Scott, Esq. 1274. Have they been passed by your authority? No; they have not been passed by me.*

1275. By any person under you? No.

1276. Notwithstanding you have not passed them, and that you are responsible for the rolling stock, you find there are about 200 of these couplings now in use? Yes, on coaling trains and for ballasting.

WEDNESDAY, 17 SEPTEMBER, 1884.

Present:—

Mr. POOLE, Mr. CHAPMAN, MR. TEECE. Mr. GARRÁRD,

MR. SUTHERLAND.

SYDNEY SMITH, Esq., IN THE CHAIR.

Mr. Thomas Midelton recalled and examined:

1277. Chairman.] The Committee asked you to furnish a return of the cost of the different classes of T. Midelton. rolling stock;—can you do so? That is in hand; I have not had time to complete it. I was not aware 17 Sept., 1884. that I would require to be here to-day. I have received no notice to attend. I suppose it has crossed. 1278. Will you attach it to your evidence when this is sent to you for correction? Oh, yes.

1278. Will you attach it to your evidence when this is sent to you for correction? On, yes.

1279. Mr. Poole.] You were present at the trial of the pattern dump-car, when the Minister for Works was there, were you not? Yes, sir, at Darling Harbour.

1280. Did you then express to the Minister a favourable opinion as to the adaptability of the dump-car to our traffic purposes? I do not remember having done so. I do not think I spoke to the Minister at all until after we left the trial and went round the goods-shed. I do not remember expressing myself in favour of the car to him.

1281. Did you advise the Minister to purchase the cars? Certainly not.

1282. You are quite clear on that point? Yes, I am quite clear. If he had asked my opinion as to purchasing the cars, I should have said decidedly not to purchase them. How could I do otherwise in the face of a minute like that in the printed papers.

1283. You are quite sure that you never expressed a favourable opinion of the cars to the Minister, or advised him to purchase them? I am quite sure of that, sir.

1284. This is a sketch here which is to be attached to the evidence; will you look at the framing shown on it and say whether or not that is the kind of framing that is to be used in connection with these 200 dump-cars, which are irrespective of the pattern car? This appears to me to be a drawing of it—an exact drawing from the one that is now being put together. There is, however, little difference between the pattern car and this.

1285. Is there any difference in the buffer arrangement? No. 1286. Has the pattern car any buffer? No; just a head-stock carried across. 1287. What is the size of this cross-head? I have not measured it; but I should say it was 4\frac{3}{4} inches

by 12 inches deep.

1288. Judging from your experience in connection with our rolling stock, do you consider that the strength of this cross-piece is sufficient to withstand the pressure of a train being brought up rapidly and having all its weight brought upon it? No, sir.

1289. In your opinion that is a weakness which, if the cars were brought into general use, would be liable

to cause accidents? Yes.
1290. Mr. Garrard.] Do I understand aright when I take it that the pattern car has a buffer in the centre, right opposite these longitudinal pieces of timber shown in the plan? Yes.

1291. In the other cars there are opposite the buffers no corresponding stretchers? No.
1292. Are the cars being delivered exactly like this? I think they are.
1293. You do not know whether any strengthening pieces are being put behind the buffers? I believe not; I think the cars are substantially the same as shown here.

1294. Mr. Poole.] How is the continuous draw-gear provided for in these cars? There is no continuous draw-gear. Some engineers might call it so, but it is not what was asked for. I supplied a copy of what I wanted.

1295. This is a copy of the car? Yes.

1296. It is not in accordance with your sketch? No; the sketch shows the buffers and draw-gear.
1297. Mr. Garrard.] You supplied a sketch for these new cars to be supplied to, and this sketch on the table is not in accordance with your sketch? No sir, the draw-gear is not in accordance with my sketch.
1298. Is the side buffer? The side buffer is as regards the space between the centres.

1299. Mr. Poole. In your sketch you showed where you wanted them to be placed to suit your own stock?

1300. Chairman.] Will you state the brake power, and how it is applied on the pattern car and on the cars now being supplied, and compare it with the brake power in application on the G trucks? Yes. On the pattern car there is a brake worked by the usual hand-wheel, which operates four blocks, on one bogie only; the other bogie has no brake. There is a similar brake on one bogie only on the car now being put together. The G waggons have eight brake blocks (four on each bogie), worked by hand lever; this is certainly the most powerful brake, but I think four blocks would be sufficient.

THURSDAY,

^{*} ADDED (on revision):—They were certified by me as being in accordance with the order given. The Department wished to make a trial of a self-acting coupler; an order was given for a supply of waggons with the appliance, and in the ordinary course of business the vouchers came on to me for a certificate that the trucks were made in accordance with the orders given. The responsibility of running the couplers was accepted by Mr. Cowdery, the Engineer for Existing Lines.

Aresent . -

Mr. CHAPMAN.

Mr. POOLE,

MR. TEECE.

SYDNEY SMITH, Esq., in the Chair.

Charles Augustus Goodchap, Esq., Commissioner for Railways, called in and further examined:-

1301. Chairman.] I think the Committee asked for some papers respecting coaling arrangements and lighter rolling stock;—have you brought them with you? I have some papers here about the coaling of 1302. What do they refer to? They refer to various schemes for coal stages and to taking up coal for 18 Sep., 1884.

locomotives; also to the delay in obtaining the use of trucks, because they were used as coal stages; and other matters.

1303. Do they refer to the general coal traffic? No, only to coaling engines for the Department. (Papers produced and left with the Committee.)

1304. Have you also got some papers about the rolling stock? I do not exactly know what is required. I have some papers about lighter rolling stock. Of course they are not always kept together. Sometimes minutes come up on papers referring to other subjects, and I do not know that I could trace all the minutes about lighter rolling stock.

1305. We understand there have been some minutes during the last two years in regard to providing lighter rolling stock? I requested the report of the engineer officers on some papers I got from America on the subject of lighter rolling stock. I referred to that in my previous evidence. When Mr. Scott returned from England I again brought the matter up, and I was furnished with a report upon the subject, as to the experience he had gained in England. (Papers produced and left with the Committee.) There are some papers about Allison's car, which we decided not to take at any rate for the present, about which Mr. Scott says in a minute:—"I may state that with the exception of the dumping arrangement these cars very much resemble the American dump-car which has been purchased from Carson Woods and Co., and for the supply of a considerable number of which his tender has been accepted, so that until we have had an exportunity of thoroughly testing their efficiency no further orders should in my until we have had an opportunity of thoroughly testing their efficiency no further orders should in my opinion be given, and even assuming that they would, with further alterations, be suitable for our traffic, I consider that in justice to our local contractors, only one of each sort should be imported as a sample, to which others could be made in the Colony." Mr. Augustus Morris was informed on that that it was not

considered desirable to give an order for any of these cars at present.

1306. We have it in evidence that certain rolling stock of a lighter description has been manufactured here lately-some carriages I think ;-could you favour the Committee with any information regarding the

here lately—some carriages I think;—could you rayour the Committee with any information regarding the lighter rolling stock referred to, and by whose recommendation they were manufactured? I assume you are alluding to a type of passenger carriage called the Redfern carriage.

1307. The name has not been given to the Committee, but we have been told that in consequence of your asking for lighter rolling stock, a certain class of carriage was submitted to you, which was approved of, and that some of these carriages are now running. The Committee would like to know whether they have been a success? I took exception to two or three details connected with these cars; I thought the supplications of them was not so good as it sught to have been that the seats were not quite wide enough upholstering of them was not so good as it ought to have been, that the seats were not quite wide enough, and one or two little things, such as the lettering on the door, and the labels containing certain directions not being properly enamelled. Altogether the finish of the car did not seem to me to be what it should be, and I wrote a minute calling attention to these matters, and I am assured they are being remedied.

1308. Mr. Poole.] Were these carriages manufactured in the Colony? Yes. In all other respects they seem to be admirable carriages.

1309. Chairman.] Who designed these carriages? Mr. Midelton.
1310. Is it true that a design for a lighter class of freight trucks has been approved? No; I do not recollect any being submitted to me.
1311. I think it right to tell you that we have it in evidence that some time since, about twelve months ago, one of the officers submitted a design for a truck that would be lighter, and the carrying capacity would be far greater than our own rolling stock? It did not come under my attention.*

1312. Mr. Poole.] Is there any comparative statement of the weights and capacity of the various kinds of rolling stock used by the Government? It is published in my Railway Report every year, a statement of the weight of each kind of vehicle.

1313. And the cost? No, not the cost. The cost varies from time to time.

1314. Coming back to the matter which the Committee first took in hand;—is there any bond signed between Mr. Carson Woods and yourself as the head of the department?

1315. None whatever? No.

1316. I would like to call your attention to your letter to Mr. Carson Woods of the 28th August, 1883, number twenty-six of the printed papers, relating to dump-cars:—"In reply to your letter of the 27th instant, having further reference to the proposal made by you with regard to the rights of the dump-car patent, and in which you state you are prepared to build 200 cars in the Colony, inclusive of the patent rights, for the sum of £190 each, I have the honor to inform you that I have submitted the above proposal to the Havenshle the Scarcetary for Public Works, and he approves of the scarcetary of the same and approved the Havenshle the Scarcetary for Public Works, and he approves of the scarcetary of the same and approved the same states. to the Honorable the Secretary for Public Works, and he approves of the acceptance of the same on condition that the cars are delivered complete on the railway line, Sydney, at the price named, and that they are in all respects equal to and of the same weight as the one now in possession of the Department. It is, as a further condition of the acceptance of your offer, that after the delivery of the above cars is completed, the Government are to have free and undisturbed use of the patent rights for New South Wales for all cars they may build or have built by private firms." Then there is a P.S. "You will have to enter into a bond for the

Goodchap, Esq.

^{*} Note (on revision):—I have since ascertained that allusion was intended to the truck for coaling purposes schemed by Mr. Midelton. I wish to add as an appendix to my evidence the official correspondence on this subject. (See papers Appendix D.)—Ch. A. G., 26/9/84.

C. A. Goodchap, Esq. 18 Sept., 1884.

due fulfilment of your contract, and to assure the Government in the undisturbed possession of the patent rights as far as the Government Railways of New South Wales are concerned. The cars to be delivered, fifty in nine months, and the remainder in lots of fifty at three, six, and nine months, within the succeeding nine months.—Chas. A. G., 28/8/83." Now I would like to ask you if that is not in reality the contract that you have sanctioned? Yes. If you will look a little further you will see that Mr. Carson Woods acknowledges that letter:—"I have the honor and pleasure to acknowledge receipt of Carson Woods acknowledges that letter:—"I have the honor and pleasure to acknowledge receipt of official acceptance of my tender for the supply to your Department of 200 screw lever dump-cars. I now await your instructions as to where and when the bond and other requirements you ask for in your letter can be signed and fulfilled by me." That is a constructive acceptance of the terms.

1317. But in point of fact there is no bond? There is no bond. If you read further you will see that Mr. Carson Woods went to America before the bond was prepared for signature.

1318. Is it not an unusual course for the Government to allow a large order of this kind to be entered into or any action to be taken before the contract bond is signed? No, very often contracts are commenced without the bond being signed, but the Department protects itself by declining to pay any money; therefore the work is commenced at the contractor's own risk.

1319. Is Mr. Carson Woods in the Colony now? He is.

1320. And even now there is no bond signed? There is no bond signed. The Crown Solicitor has requested Mr. Carson Woods to supply a power of attorney under which he can grant to the Government.

requested Mr. Carson Woods to supply a power of attorney under which he can grant to the Government the patent right. Prior to the preparation of the bond that would be necessary.

1321. If it should turn out that Mr. Carson Woods is unable to conform to the Crown Solicitor's wish in this respect what will then be the position of the matter? We shall not accept the cars.

1322. The Government will decline to accept the cars? The cars would not be accepted under any

circumstances unless all the conditions were complied with. In the first place the question will have to be seen into whether it is not a breach of contract the omission to make the cars in the Colony.

1323. There is nothing in your letter of 28th August about their being made, the term used is "built" in the Colony; there is nothing said about making them? The intention is shown by the instructions to

the Crown Solicitor.

1324. I fully admit that that was the intention of the Government, that the cars should be made in the Colony, that is, that the bulk of the money should be spent in the Colony? Yes, with the exception of

that for the wood work, and that I anticipated would be simply imported lumber, to be made up here. 1325. You consider the patent right an essential part of this contract? No doubt. There was no other reason for giving the contract to Carson Woods. We could have given the contract to Hudson Brothers, but we saved £6,000 by giving the contract to Carson Woods as he secured to us the patent right.

1326. During the putting together of the cars here has any report been made to you as to the nature of the workmanship and the materials supplied? Yes.

1327. Is that report of a favourable description? No. Of course that will have to be tested. As

suggested by the Locomotive Engineer, the quality of the work will have to be tested.

1328. Has any report been made to you that the axles or some of them are less in diameter than the axles in the pattern car? I do not remember that the diameter was referred to ——

1329. In the report to you? Yes, it may have been. I only looked at the general fact that the material was said to be inferior, and to the suggestion that a test should be made. I at once pointed out to the Minister that an attempt to test this material would be accepted as a constructive waiver of our right to refuse the trucks altogether, and before anything was done I said it would be judicious to get the opinion of the Crown Solicitor as to whether the contract could not be vitiated on the first point, that the cars were not made in the Colony.

1330. Suppose the Crown Solicitor is unable to advise in that direction, will you not be entitled to strictly compare the 200 cars delivered in contact with the pattern car? Certainly, we can insist upon their being

in every respect equal to the pattern car.

1331. This is a sketch brought up by the Locomotive Engineer. Have you seen it (referring to the sketch

on the table)? I have not.

1332. Will you kindly look at it. I would like particularly to call your attention to the position of the buffers on the cross-heads of the trucks, and ask you to be good enough to look at that position as being entirely unsupported. Assuming that ten of these trucks were in a train with a load of 20 tons on each, besides their own weight, that would be about 300 tons. Would you be good enough to tell the Committee what would be the effect of a sudden pull up of the train on one or more of these cross-heads? would depend on the strength of the material. If that was Colonial timber I should certainly say it was not strong enough to support the buffers.

1333. Is it not admitted by scientists that our hardwood has as great a tensile strength as American ash?

1334. Take our best blue gum for instance? I believe American ash is superior, as regards toughness. 1335. From your intimate knowledge of the construction of our rolling stock, do you consider that that is at all a safe arrangement in relation to the great carrying weight of these trucks? It depends upon the size of the timber and its tensile strength.

1336. Would you consider, from your knowledge of the usage of our rolling stock and the strain thrown upon it, that any timber of that size, no matter how elastic and strong it may be, would be sufficient to resist that strain? I might form an opinion of my own, but I should leave a matter of that kind to the

engineers.

1337. You would prefer their opinion to your own? Yes. That was my stipulation, that all matters of this kind should be to the satisfaction of the engineers.

1338. If the Committee have received an opinion from one of your engineers that he does not consider this a safe arrangement, you would attach considerable weight to that opinion? I should. At the same time I made provision that our engineers should supply details of the draw-gear and buffer arrangements, and I wanted them to supply a specification which you will see they were disinclined to do. I should have very much preferred that our engineers had made the specification; I tried to induce them to do it, but they seemed to think it was better to leave it to be made the specification;

but they seemed to think it was better to leave it to the manufacturers.

1339. To throw the responsibility upon the designer of the truck? Yes.

1340. In other words they naturally shrank from interfering with the general design of the patent? I would not like to interpret their feelings in the matter. I do not know what their delicacy of feeling.

may have been; but I think their sense of duty should have induced them to see that the Department got a perfectly secure arrangement.

1341. With respect to the central draw-gear—this continuous draw-gear—have you examined the details of the proposed arrangement in order to get a continuous draw-gear, so as to clear the central or dumping 18 Sept., 1884.

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pivot? No, I have not.

1342. Does it not occur to you that there will be considerable difficulty in getting continuous draw-gear along the line of the centre of the truck, seeing that the central or dumping pivot is also along the centre of the truck? There must be difficulty, but I do not know that it is insuperable.

1343. From your knowledge of rolling stock, is it not likely to considerably increase the cost? think so; but that has to be borne by the manufacturers.

1344. Is there any other evidence or matter that you desire to bring before the Committee with respect to this matter? I think not. Of course I am not aware of what has been said in reference to this matter,

or whether any of the evidence is capable of being challenged or not.

1345. Suppose that the bulk of the evidence is entirely unfavourable to the use of these cars on our railways, then is there any information you desire to give, or any persons you desire to be examined, to substantiate your original views upon this question? I should say that such a statement as that would take me by surprise, if I am to understand that officers of the Department have given that evidence. If any officer of the Department who was charged with reporting to me upon this truck, and did so report upon this truck, now states that the sample truck, for instance, is not an arrangement, is not a design, capable of being worked with safety, then I say I am completely taken by surprise, and am amazed that any such officer should now state that which he omitted to state to me at the period when the question was under consideration. I would like also to say that experience in America seems to contradict the assertion that these trucks cannot be used with safety and advantage. I myself quoted, in my evidence, the opinion of a master car-builder in America, speaking in the highest terms not only of the design of the truck but of its arrangement generally being perfect.

1346. Is there any paper or document printed by authority in America which gives the nature, the extent,

and as far as practicable the cause of the various accidents on railways in America? I think in the State of Massachusetts there is a Commission appointed to watch the railway management, and they publish

every year a number of reports.

1347. Something similar to the report of our English Board of Trade? It is fuller than that—very much fuller than that.

1348. Are there any copies of that publication in your Department? I think I have one or two.
1349. No doubt you consider it a matter of some importance to ascertain for yourself what has been the practice in America with respect to rolling stock, as well as in England and elsewhere? Yes. You will observe among the papers I have produced with respect to coaling arrangements, that I submitted to our engineers several designs which appeared in the Railway Gazette of America, and obtained Mr. Midelton's report thereon.

1350. Are there, as far as your memory will carry you, any considerable number of accidents reported on the American railways as traceable to the use of cast-iron chilled wheels? No, not one that I can recollect. In the list of accidents, I have seen from time to time the cause is sometimes said to be Of course a defective wheel would cause de-railment; but I can recall no accident which was attributed to the use of chilled iron wheels.

1351. Am I correct in assuming that, in your opinion, the use of chilled wheels is as safe within reasonable limits as the ordinary English type of wheel? Just as safe, I think. The only question is as to durability. 1352. Is it a fact that four of these dump-cars have been taken from the old Atlas Works, where they have, I understand, been put together, up to the general depôt for Railway rolling-stock, at Eveleigh? At 4 o'clock yesterday afternoon I received a report from Mr. Scott, stating that two or three—I think he said three—of these trucks had been allowed to run on our rails out to Eveleigh at the contractor's risk and cost, and with no obligation on the part of the Department. I at once, within 5 minutes of receiving the paper, wrote a minute, informing Mr. Scott* that he was entirely wrong in allowing this to be done, and that no more cars were to be received under any condition until they were finally accepted. 1353. Can you inform the Committee if the contractors for the supply of the dump-cars are paying any rent for the use of the old Atlas Works? I should think so, but I know nothing about it; it is not in my Department.

1354. In whose Department will that be? In the Department of the Under Secretary for Works.

1355. I think then the Committee may feel assured that, until you are satisfied by the report of your responsible locomotive officers, that they are up to the quality of the pattern car, you will not accept delivery of any portion of the 200 cars ordered? Certainly not. I would not under any circumstances, whether this inquiry had taken place or not.

1356. That is irrespective altogether of whether the contract has been broken through by any breach of 1356. That is irrespective altogether of whether the contract has been broken through by any breach of the condition as to building the cars here? That question will have to be settled first; and if that be decided against the Department it will be essential that the cars should be in all respects not only equal to the sample but to the satisfaction of the Locomotive Engineer as provided for in the specification. 1357. He could not, I take it, be asked to express his satisfaction as to the design, but simply as to the material and workmanship? And as to the application of the buffers and the draw-gear. 1358. And the modifications in the dumping arrangement? Yes. 1359. And also as to the continuous draw gear? Yes; that is to say, it was stipulated that the buffers and draw-gear should be in all respects similar to ours and applied in the same way.

1360. And also as to the safety of the mode of connecting the two frames together, the running frame and the carrying frame? Yes; although attention was not called by the engineer to any defect in that

1361. You called attention to it? I did.

1362. Chairman.] There is another matter that has come before the Committee with regard to the use of some patent coupling;—could you give the Committee any explanation regarding the ordering of certain rolling stock with this patent coupling—on whose authority was it done? This patent coupler was tried several times and under all conditions at Darling Harbour—up grades, down grades, round curves of 5

^{*} NOTE (on revision):—I have since ascertained it was not Mr. Scott, but the Traffic Manager, who consented to these trucks being taken out to Eveleigh at contractor's risk and cost.—Ch. A. G., 26/9/84.

C. A. Goodchap, Esq. 18 Sept., 1884.

chains radii, detached while running, and under all conditions which could be conceived of as likely to occur in working trucks anywhere. Ministers and a number of scientific people were there, and they all expressed their confidence in the perfection of the coupler. I myself witnessed the trials, and it seemed to me to answer in every respect.

1363. Who is the officer supposed to be responsible for the safety of the rolling stock? The Locomotive

1364. Do you know whether he or any officer under him has been asked for a report upon this patent coupler? Mr. Burnett was Locomotive Engineer at the time. I cannot say whether it is in writing or not, but he expressed a very favourable opinion of the coupler, and in fact made some improvement to it, or some provision in case the coupler should come in conjunction with a truck that was not fitted with the patent coupler—some arrangement by which the ordinary coupler might be used in conjunction with it. This patent coupler I believe obtained a prize in England, when a Committee of shunters (I think) and engineers was appointed to inquire into couplers generally. A large number of automatic couplers of various kinds were brought under attention, and the patentees advanced their schemes with all the ardour of which patentees are capable, and under favourable circumstances; but I am told the Cowdery-Thomas coupler had no friends to recommend it; it was simply lying there while the friends and owners of the other patents had trucks fitted up with them and people to superintend their trials. While all the others were having their merits pointed out and advocated, this neglected one was lying on the ground without any appliances; and yet, when it came to be applied, its merits were found to be so high that it obtained a

prize. I believe I am right in saying a prize.

1365. Have you had any reports from the Locomotive Engineer or Traffic Manager regarding the working of this coupler? Really I have not looked at the matter for some time. I would like to look up the subject to see how it does stand. Any evidence I can give now would be simply the result of recollection

of some old date.

1366. Mr. Poole.] Will you send the Committee copies of all reports made to you as to the adaptability of the coupler prior to the order being given, and any reports of its working since? I shall be very glad to give any information in my power. I may tell you generally that couplers of an automatic character are forced upon the attention of railway managers, and that large sums of money have been spent by Railway Companies in England and America, for the purpose of obtaining a coupler which will reduce the tremendous amount of buffer accidents which take place on all railway lines,—not by any means on economical grounds, but solely on the ground of humanity and a desire to limit fatal accidents as much as possible. It is within my knowledge that a Commission is now sitting in America with a view to insisting that Railway Companies shall adopt automatic couplers for that sole purpose.

1367. In regard to these dump-cars, is there any person other than Mr. Scott, Mr. Midelton, Mr. Bourn, and Mr. Bingham, that you would like to have examined regarding the workmanship and general adaptability of these dump-cars? Well, I cannot recollect anybody just now that I should like to have examined upon that point. The officers you have named are the officers who have given their skill hitherto to designing cars of very heavy construction—tremendous tare with very light carrying capacity and I should expect that they would be rather surprised to find a light durable truck containing

advantages which they had failed to discover.

1368. Do you think they are quite competent to give an opinion regarding the safety, workmanship, and materials used in connection with these dump-cars? I am quite certain they can give a valuable opinion about the strength of the cars and their probable safety in working; but, at the same time, engineers get into grooves; they have been accustomed to build cars with sole bars of large scantling, and heavy head-stocks, and other parts of corresponding dimensions, and they adhere to them; they never think of questioning whether there is not too much weight in these various parts, and whether they cannot be lightened with advantage. Mr. Midelton certainly has given some attention to that matter at my repeated request, and he has designed now a carriage which compares most favourably in that respect with other carriages. He was most demonstrative, when this dump-car was under inspection, in proclaiming its merits in regard to the under-frame; he impressed upon me at the time of the inspection that even as a model it was worth all the money we were called upon to pay for the truck.

1369. Have you any reason to suppose that Mr. Scott, Mr. Midelton, Mr. Bourn, or Mr. Bingham would be influenced by the fact of the other relling stack having hear of a harriage which the relling stack having hear of a harriage which there is no the control of the other relling stack having hear of a harriage with the relling stack having hear of a harriage with the relling stack having hear of a harriage with the relling stack having hear of a harriage with the relling stack having hear of a harriage with the relling stack having hear of a harriage with the relling stack having hear of a harriage with the religious stack having hear of a harriage with the religious stack having hear of a harriage with the religious stack having hear of a harriage with the religious stack having hear of a harriage with the religious stack having hear of a harriage with the religious stack having hear of a harriage with the religious stack have a stack having hear of a harriage with the religious stack having hear of a harriage with the religious stack having hear of a harriage with the religious stack having hear of a harriage with the religious stack having hear of a harriage with the religious stack having hear of a harriage with the religious stack having hear of a harriage with the religious stack having hear of the religious stack having hear of a harriage with the religious stack having hear of the religious stack having hear of the religious stack having hear of the religious stack having hear of the religious stack having hear of the religious stack having hear of the religious stack having hear of the religious stack having hear of the religious stack having hear of the religious stack having hear of the religious stack having hear of the religiou

be influenced by the fact of the other rolling stock having been of a heavier description compared to these dump-cars? I should expect them to receive with some degree of doubt a car which presented itself of lighter dimensions than the cars they had been accustomed to design—that they would receive it with a certain amount of reserve.

1370. Supposing these officers reported against the dump-cars, would you consider it necessary to go outside them for an opinion? If they had reported against the dump-car in the first instance—if they had said they did not consider the working parts were safe, or were in doubt about its durability—my course would have been clear; I should have refused to recommend it for acceptance.

would have been clear; I should have refused to recommend it for acceptance.

1371. I wish to draw your attention to Mr. Midelton's report, when he was Acting Locomotive Engineer in 1883. He says:—"Theoretically this dump-car looks very satisfactory and promises well, but when I fully consider the matter in its various manners of application I really cannot see much in it to recommend; it is like many other things, not complete without some other appliance."* Then, again, he says:—"I could not recommend its adoption for ballasting purposes, and if I were a contractor I should prefer using drop bottom waggons, as with them the ballast is deposited where required, but with the dump-car it would be deposited at the side of the road, and unless there was plenty of room a great quantity would be deposited off the road entirely"? No one proposed to use them for that purpose.

1872. "As for coaling engines with the dump-car, I could not possibly agree to that, as I think it very little if any better than our present system with the D waggons. Should it be decided to order any of these cars, I beg to suggest that dimensions of axles, buffers, &c., be sent by us, to save alterations when they arrive in Sydney—? And that was done; they were requested to do that.†

1373.

^{*}Note (on revision):—I have replied to that by stating that the Department had at that time appliances in view which would make the dump-car valuable, and that fact made Mr. Midelton's report a favourable one.

† Note (on revision):—There is not one word here about the "safety" of the car; there is no representation that the car would be difficult to work; two services are mentioned for which the cars would not, in Mr. Midelton's opinion, be suitable (one is agreed with, and the other differed from), and then he makes the suggestion about axles: "Should it be decided to order any of these cars." This is not or should not be the report of an officer who is of opinion that the working parts of a vehicle offered to the Department are not safe. If Mr. Midelton was of opinion that the arrangement of the car involved a want of safety in working he would have said so, but he did not say so nor did he think so at that time.

1373. From what you know of Mr. Midelton's proclivities in favour of weight, it is not very likely that a specification as to axles would be sent of a less size than that of the axles in the pattern car? Certainly not

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1374. Then if it should prove upon examination and report that a considerable number, if not all, of the 18 Sept., 1884. axles being delivered to run under these 200 cars are from $\frac{1}{4}$ to $\frac{1}{8}$ of an inch less in diameter, that would be quite contrary to the intention you had in giving the order? There is a method of testing the strength of the axles.

of the axles.

1375. That would be quite contrary to your intention? Certainly. The axles were to be of the same dimensions. If it be pleaded that they are made of superior material and will stand the same test as the sample, then they would be subjected to the same test that axles are generally put to; their relative strength would be ascertained by the drop and tensile tests.

1376. Is it not a matter of fact that the material to be used in railway rolling stock axles is always required to be of the best description? Yes.*

1377. Then under any circumstances if one is of less diameter than another it must be of inferior strength to that extent? I do not think so.

1378. Both being of equal quality? Of equal quality, yes; but I can quite understand that an axle may be of greater dimensions than another, and yet the one of less dimensions would be the better axle.

TUESDAY, 23 SEPTEMBER, 1884.

Present:-

Mr. GARRARD, Mr. POOLE,

MR. SUTHERLAND, MR. TEECE,

Mr. WRIGHT.

SYDNEY SMITH, Esq., in the Chair.

The Honorable Francis Augustus Wright, M.P., a Member of the Committee, examined in his place:—

1379. Chairman.] You are Minister for Works? Yes. 1379. Chairman.] You are Minister for Works? Yes.
1380. When was your attention first directed to the dump-car? I think in the first instance my attention F. A. Wright, was called to it by Mr. Carson Woods, but I am not certain; that is my impression.
1381. Do you know about what date? I really cannot say the date; it was some time, I think, previous to the date of my first minute in these papers.
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1382. Was it before or after the car was tested? Some time before.

1383. You were present, I believe, at an official test that was made? Yes, I was present at Darling Harbour at a test which I presume was official from the fact of a number of the officers of the Railway. Department being present. Mr. Goodchap accompanied me; and there were present Mr. Midelton, Mr. Read, Mr. Cowdery, and, I believe, also Mr. Paul, the stationmaster at Darling Harbour, and two or three other gentlemen connected with the locomotive and carriage works whose names I did not know.

1384. Was Mr. Scott present at that test? I think not. Mr. G. R. Dibbs was present, and Mr. Carson

Woods.

1385. What was the truck loaded with on that occasion? Billet firewood.
1386. Was it considered a fair load? I should think it was a fair average load; the wood was piled up as high as the sides of the truck.

1387. How many billets were thrown out when the car was dumped? Very few; certainly less than a

1388. What weight do you think was thrown out? The wood that fell off when the car was dumped was 1388. What weight do you think was thrown out? The wood that fell off when the car was dumped was simply some few billets that rolled over the top sides; the doors being hung from the top, and the billets rather long and coming out at different angles, they were at once jammed. I might state without any reserve that, as far as regards its adaptability for dumping wood of that class, I consider the test a most decided failure; the construction of the car rendered it impossible for the wood to get out.

1389. Are the Committee to understand that the official test made was not a success? Not for that special class of loading. I think that had the car been loaded with short, what is called stove, wood, or any material that would have run under the doors the car would have done its work well had it been placed in a suitable position on a bank. Where it was tried the distance from the ground was simply about the height of the rails

height of the rails.

1390. Were you present at any other test? That was the only one I was present at.

1391. Was it owing to that test that the order for 200 cars was given? Not alone to that test, but to the fact that the car had a large carrying capacity and light tare in comparison with our ordinary rolling stock. On that ground (which I consider of great importance), and on the recommendation of the Commissioner, I approved of the purchase of these cars.

1392. For dumping purposes what was your opinion of its value, as far as you were able to judge from the test made? My opinion of the appliance for dumping purposes was that under suitable conditions

the car would be a decided success.

1393. How did you form that opinion? On the facility with which the car was tipped over, and from the fact that it remained at an angle that would have caused anything in the shape of ballast, coal, gravel, or

ract that it remained at an angle that would have caused anything in the snape of ballast, coal, gravel, or sand to run out with rapidity.

1394. Seeing that the test made with firewood was not a success, can you inform the Committee why a test was not made officially with some other class of freight? As far as I was personally concerned I was satisfied that the car would dump with the materials I have mentioned satisfactorily. It then rested with the officers of the Department to inform me whether or not such a car was suitable for our traffic requirements and whether it should be successfully used. ments, and whether it could be successfully used.

^{*} Note (on revision):—But we do not always get the best material, and opinions differ as to what is the best material for axles. 1043—G

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The Hon. 1395. Are you aware that two tests were made with the car loaded with gravel and with sand? Since I F. A. Wright, have seen these papers in print, but I was not aware of it previously.

M.P. 1396. Do you know the result of these tests? Only from the papers before me.

1397. You will find no mention made in the printed papers of the tests with ashes, gravel, or firewood, and 23 Sept., 1884. the Committee are anxious to ascertain on what grounds the 200 cars were ordered, and the result of these tests. You have mentioned that in your opinion the car would be suitable for dumping purposes with gravel, coal, &c.? I cannot tell the Committee why the results of these tests were not included in the Parliamentary papers. Having had no official cognisance of them I naturally came to the conclusion that they were non-official, and that they were conducted for the benefit of Mr. Woods and his friends. 1398. The previous tests? The tests other than the one at which I was present.

1399. Do I understand that the reason why this test was made was to ascertain whether this car would be suitable for dumping purposes? I was requested to inspect the car and to satisfy myself whether it could be easily and readily dumped, and my inspection convinced me that one man could very easily

dump the car.

1400. Do we not understand that the official test made at Darling Harbour with wood was not a success?

1400. The leaded I have already It was a decided non-success with the material with which the car was then loaded. I have already explained that the wood with which the car was loaded, owing to the peculiar construction of the car, rendered it impossible to be dumped. In fact I was amazed to find that Mr. Woods had chosen wood to illustrate the advantages of the dump-car, the very worst material he could possibly have put into it.

1401. Is the Traffic Manager supposed to give an opinion regarding the use to which rolling stock might be applied? Yes, decidedly; it is an important part of his duties to report to the Commissioner what rolling stock he requires for the conduct of the traffic and what quantity of each particular kind of stock. 1402. And whether any particular rolling stock will be suitable for any particular class of traffic? Yes, any new design of rolling stock. I think undoubtedly the Traffic Manager should be called upon for an expression of his opinion as to whether any particular rolling stock is suitable for the traffic.

1403. Are you aware whether any of the responsible officers of the Department were called upon to give an opinion regarding the results of these tests? I believe they were not called upon to give an opinion

1404. So that the Committee understands that this order for 200 cars was given without any reference whatever to the officers responsible to the Government? No, the Traffic Manager was asked to report as to the suitableness or otherwise of these cars and reported favourably upon their use for the traffic. The Locomotive Department was also asked for an opinion on their general design and construction.

1405. Was that previous to the tests? No, afterwards, I believe; I am not sure.

1406. Were any other reports than those which appear in the printed papers asked for before the order for 200 cars was given? None that I am aware of.

1407. I notice in the printed papers that you had an interview with the Commissioner for Railways and Mr. Woods with reference to these dump-cars; —will you kindly tell the Committee the nature of that interview. I refer to No. 11 of the papers, page 5? I do not think I ever saw Mr. Carson Woods at my office in company with the Commissioner; I am not sure, but I think not. If you turn to page 6 you will see that I wrote a minute to this effect:—"I have arranged to send Mr. Woods a note naming a time when I can see him, after I have talked this affair over with the Commissioner for Railways."

when I can see him, after I have talked this after over with the Commissioner for Railways."

1408. Did you talk the matter over with the Commissioner for Railways? Yes, on several occasions.

1409. Will you kindly give the Committee the result of your deliberations? The general tenor of our conversations was as to the suitableness of the dump-cars for our traffic requirements, and the design of the dump-car itself. The Commissioner and myself were both strongly impressed with the idea that this dump-car was a class of vehicle that could be very successfully used on our railways for certain special kinds of traffic, and that from its light tare and great carrying capacity it was a desirable vehicle to use for general traffic. The whole of our conversation was of this nature. We talked the matter over several times, and ultimately, on the recommendation of the Commissioner, which I may say, entirely accorded with my own views, I closed with the offer of Carson Woods & Co., after an alternative tender had been submitted by Hudson Brothers. submitted by Hudson Brothers.

1410. Is it not usual, before giving large orders for rolling stock, to obtain the opinion of the responsible officer of the Department—I mean the Locomotive Engineer? I presume it is. The Locomotive

Engineer's opinion was asked.

1411. Have you read his opinion? Yes.
1412. Do you consider that opinion satisfactory? Most unsatisfactory, coming from a responsible officer of the Government.

1413. Seeing that you considered it unsatisfactory, and that no other report was obtained from the Locomotive Engineer, will you inform the Committee why he was not called upon to explain more particularly? I cannot inform the Committee why he was not called upon by the Commissioner to explain, but I presume the Commissioner took the same view that I did, that this officer, who was acting as Locomotive Superintendent, and whose duty it was to advise, although his report was ambiguous, condemned no one item in the construction or general design of the car. Mr. Midelton having submitted a report of this kind, and knowing from past experience of him that he has a strong tendency to condemn everything proposed or invented by anybody else, I was inclined to think more of the thing than I previously thought, from the fact of this gentleman, who is an expert, failing in his report to point out a single defect.

1414. Do I understand that you considered that the report he furnished was not satisfactory? I considered that in submitting that report he had not done what he should have done? Had he seen defects in the construction or design of the car it was clearly his duty to have pointed them out to the Commissioner, and he having failed to do that I naturally thought there was nothing he could condemn

1415. Mr. Midelton, in his report, states:—" Theoretically this dump-car looks very satisfactory and promises well, but when I fully consider the matter in its various manners of application I really cannot see much in it to recommend"——? I would point out that though he says he cannot see much to recommend, he fails to condemn any one item.

1416. He says further:—"It is like many other things, not complete without some other appliance. I really cannot agree with Mr. Read that it is available for loco. coal traffic, for, as he says, it necessitates

the erection of platforms, staiths, &c. If coal could be dumped direct in carts, so that it could be hauled away to the coal-yards and then dumped again, that would be an advantage, but this could not be done F. A. Wright, M.P. without either raising the dumping waggon or lowering the coal-cart. A good deep-bottom coal waggon, such as used by the Midland and Great Northern Railway Companies at home, cannot well be beaten for 23 Sept.; 1884 coal traffic for domestic and manufactory purposes. I think the coal appliances at the various London depôts of the Midland Company the best I know of. If we could dump kerosene shale into a ship's hold at Darling Harbour there would be an advantage, but at present this could be better done with stopper waggons, as practised at Newcastle. I could not recommend its adoption for ballasting purposes; and if I were a contractor I should prefer using drop-bottom waggons, as with them the ballast is deposited where required, but with the dump-car it would be deposited on the side of the road, and unless there was pleuty of room a great quantity would be deposited off the road entirely. As for coaling organizes was plenty of room a great quantity would be deposited off the road entirely. As for coaling engines with the dump-car, I could not possibly agree to that, as I think it very little if any better than our present system with the D waggons. Should it be decided to order any of these cars, I beg to suggest that dimensions of axles, buffers, &c., be sent by us, to save alterations when they arrive in Sydney." I wish to direct your attention to that, and to ask whether you did not conceive that report was against the dump-car? No; and I will explain to the Committee why not. In the first place, neither more than the form the committee of the dump car with the first place of the latest the dump car with the first place. nor the Commissioner, or, I should think, any sane man, considered the dump-car suitable for ballasting. Mr. Midelton was not asked whether it was suitable for ballasting, and from its peculiar construction it was altogether unsuitable for that purpose. Any man having the slightest experience of railway works must know that Mr. Midelton's opinion about the unsuitableness of this car for carrying coal is merely his opinion against that of the Traffic Manager, who has charge of the whole traffic of the Department, and considers it is suitable. I think no one can deny the fact that, under suitable conditions of a raised line or a sunk roadway, this car could be used very effectually for coal and other material of a similar description.

1417. Are you aware that at the time Mr. Midelton wrote the minute I have just read, the pattern dumpcar was not in the Colony? I am not. I do not see how he could write a minute on a car that he had

1418. Did he not write his minute on some papers from America that had been sent to him by Mr.

Goodchap? I do not know. I have no idea when the dump-car arrived.
1419. From Mr. J. C. Dibbs's letter of the 8th May, number 4, it would appear that the car did not arrive till a month after Mr. Midelton's report? I would call attention to the fact that there is no date on Mr. Midelton's report. The Commissioner sent the papers to Mr. Read for report on the 2nd April. Mr. Read reports on the 5th, and on the 6th it was forwarded to Mr. Midelton, but there is no date to his

1420. Seeing that Mr. Read and Mr. Midelton were only asked to report upon papers submitted about a month previous to the arrival of this sample dump-car, do you not think it would have been well if a further report had been obtained from the Locomotive Engineer after the car had arrived in the Colony? Well, perhaps it would have been an improvement; but I am not sure that the Locomotive Foreman's

report was not written after the arrival of the car.

1421. Supposing that these papers do not show that any report had been made, do you not think it was a departure from the ordinary routine to order 200 cars without first having the report of the officer who was responsible? As far as my experience goes, personally I do not know what has been the practice of the Department in these matters, but I should naturally imagine that the better course would have been to obtain a report. As far as I have been able to discover from the practice of the office, it has never appeared to me that there is any defined rule or any precedent laid down for these things. Each Minister seems to have acted upon his own judgment after receiving the report of the Commissioner.

1422. Do you not think it would be well if some rule were laid down by which a report of a responsible officer could be fully obtained before large orders for rolling stock were given? Well, if the Committee will allow me to explain my views, perhaps it will put it better than by questioning. I went, as I before the committee will be the committee will be the committee of the c explained, to Darling Harbour, to make an official inspection of the dump-car; I was accompanied by the Commissioner, and met a number of the officers of the Department, some of whom I have previously named, having charge of and being responsible for the various Branches of the Service; the car was examined by myself, with the assistance of Mr. Midelton, who pointed out its various excellencies to me, but contribut rooms of its alloged defeats. but certainly none of its alleged defects; general conversation was entered into by all the gentlemen present, and I was then, as I am now, clearly under the impression that it was the duty of these officers to have pointed out to me any defects they saw in the car, but no defects were pointed out. I was almost the only person present who pronounced the experiment of dumping the firewood a failure. Mr. Midelton, in conversation with me, pointed out particularly the bogie, expressing himself in strong terms of admiration of its design and its lightness, as against what he described as the cumbersome bogies we had then in use. Mr. Midelton further urged me, if not in direct words, but I believe he did directly to secure this carriage stating that he appringed the bogies are result, and the did directly, to secure this carriage, stating that he considered the bogie was worth much more than was asked for the whole thing, for the sake of its design. I would like to point out to the Committee that this was an official examination, I being present, and surrounded by all the officers supposed to be capable of giving a judgment, and hearing from them not one single word of condemnation, I felt after that I was perfectly justified in ordering these cars, believing as I did, from my comparatively limited knowledge of such things that it was a good car and of a suitable design, and not because I have knowledge of such things, that it was a good car, and of a suitable design, and not hearing, as I have before said, one word of condemnation of it, or any one part of it, from any of the officers present, all of whom were experts, and entered freely into conversation with me, and who might, and in my opinion undoubtedly should, have pointed out any defects if they had existed.

1423. I may point out that in a previous part of your evidence, in reply to a question put by me, you stated that none of the officers were called upon to report further than is stated in these papers? They were not called upon to report, they were not asked directly to give their opinion, but they were there freely discussing this thing, and all that I heard was commendation. I believe one of the officers—I am not sure who it was—spoke about the weakness of the check chain—I am not sure whether that is the proper term—the chain that broke on one side when the car was dumped over. He spoke of the lightness of this chain—and with that exception I heard no fault found with the graphers the interest of the contraction. of this chain; and with that exception I heard no fault found with the workmanship or design or anything

about the car.

They were not specially 1424. Do you know whether they were aked to examine the car personally? asked

The Hon. asked to make any examination, or to give any report, or to advise in any way, but they were present, and F. A. Wright, were freely conversing with me, and I consider it was unnecessary to ask that question. Had our positions been changed I should have felt it my duty to have pointed out to my chief any defects that I observed.

1425. Were they referred to before the order for the 200 cars was given? I think not, further than that these minutes show that Mr. Midelton and Mr. Scott were asked to make the necessary specification to make the cars suitable to our roads and the rest of our rolling stock.

1426. Was that prior to the order being given or after? - I think it was after the order was given, but there was then time to withdraw order, I believe, if these officers had said the cars were not safe.

1427. Are the Committee to understand that the order for the 200 cars was given without the officers responsible being called upon to give an opinion regarding the workmanship, design, or materials used?\'I really cannot tell you from memory what action was taken by the Commissioner in dealing with the matter after the contract was entered into.

1428. Do you not think it would have been well, before the contract was entered into, that an opinion should have been asked from the officers, seeing they had not previously been asked to report upon the car after it was landed here? Had the case been my own private business—and I can put it in no stronger way—I should have felt perfectly justified, after the examination I made in presence of these officers, and hearing no objection from them as to material, workmanship, or design, in making the purchase. In any similar case, if I examined a new thing in the presence of a number of experts who were paid by the country for their services to advise as to its suitableness or otherwise, and who themselves, as in this case, attended this inspection knowing that it was official, I should feel justified in doing a similar thing to-morrow.

1429. Did they understand that this test was an official one? They must have so understood it from the fact that I was present, and that the whole of these gentlemen had been summoned to attend.

1430. Was not the Commissioner for Railways present at some other test? I am not aware, except from

1431. Was it not understood that these 200 cars were to be manufactured in the Colony? I clearly understood so, and I made a minute to that effect. My first midute is: "I should much prefer having the dump-cars made in the Colony, and should be disposed to arrange for purchase of Mr. Woods' patent wight at a fair price but I could not think of any such sum as \$6,000 for a petrat of this kind that may right at a fair price, but I could not think of any such sum as £6,000 for a patent of this kind, that may at any moment be improved upon. An offer may be made for the patent right for New South Wales." Then further on I said: "Mr. Woods' offer to build 200 dump-cars in the Colony at a price, delivered complete, of £190 each, may be accepted, subject to the following conditions:—That the cars are equal in all respects to the one now in the possession of the Department; that they do not exceed the weight of the same; and that after delivery is complete the Government are to have the patent for New South Wales for all cars they may build or have built by private firms." My idea was that these cars should be made absolutely in the Colony—made and manufactured—and I am quite clear that either Mr Carson water for all cars they may build or have built by private firms. In y idea was that these cars should be made absolutely in the Colony—made and manufactured—and I am quite clear that either Mr. Carson Woods or somebody representing him told me in conversation that they had secured a site on the Parramatta River for the purpose of erecting works, and that Mr. Woods was going to America to import the necessary machinery and men who understood how to work it.

1432. Is it true that they are being manufactured in the Colony? I believe they have been imported in

frame, and are being put together here:

1433. Do you not consider that a breach of contract? Clearly so. As soon as I heard from the Commissioner that these cars had been imported in frame, I wrote a minute and forwarded the papers to the Crown Solicitor, asking for his opinion as to whether or not Mr. Carson Woods had not broken his contract in three ways: (first) that he had failed to execute the bond; (second) that he had imported the cars in frame in place of manufacturing them in the Colony; and (third) that he had failed to deliver fifty cars within nine months, in pursuance of his agreement. I further asked the Crown Solicitor if I was correct in my view, should I be justified in informing Mr. Carson Woods of his breach of contract, and in declining to accept the cars now in the Colony.

1434. Have you received any report from the officers regarding the cars which have been imported? I have not; I know nothing about them further than what I glean from the evidence given before the

1435. You have not received a report about the axles or workmanship? No, I know nothing about the cars further than I know from hearsay that they are within the Colony. The rest of my information

is from the evidence now before me.*

1436. You are not aware whether the cars are safe as regards workmanship or design? Nothing further than I have already stated. There is one matter I would like to explain-one action I have taken in reference to the cars: The Commissioner reported to me a short time since that Mr. Carson Woods had reference to the cars: The Commissioner reported to me a short time since that Mr. Carson Woods had been allowed by some one, he believed Mr. Scott, to place four completed cars on our railways. As soon as I found this out I naturally concluded that it might be said we had constructively taken delivery of these cars, but I learned from the Commissioner that he understood that Mr. Woods was prepared to give an undertaking to the Government that he would not consider it a delivery and that the cars should be at his risk. At this particular time I had an application before me from Carson Woods & Co., asking for permission to place the cars, as built, on our lines, and considering that the acceptance of the four cars might have committed us to the whole contract, I took the opportunity of this letter of Mr. Woods' to have him informed that we would allow him to place fifty of the cars on our lines as completed by him on condition that he paid us a rent of 1s. 6d. per week per car; that he paid us for the haulage of the cars from Darling Harbour to Eveleigh; and that he gave to the Government a written undertaking that the cars were there at his risk, and that he would in no manner consider it an acceptance of delivery. 1437. Have you received any reply to that communication? I believe he has accepted the terms of that letter.

1498. Can you tell us who is responsible for receiving these first four cars? Only from hearsay. Commissioner informed me that Mr. Scott was responsible.

1439. Are you aware whether any of these cars got damaged in transit from Darling Harbour to Eveleigh? I have not heard anything about the damage, except what I gather from the report of Mr. Scott's

^{*} Note (on revision):—On perusing my evidence it comes to my recollection that a report was received by me from the Locomotive Superintendent about the defective axles imported by Mr. Woods, and in fact it was upon that paper I wrote my minute to the Crown Solicitor respecting the breach of contract.

1440. It was stated in the House the other evening when this matter was being debated that this Committee had treated you with disrespect in some way or other—will you kindly state whether you consider they have done so? I am not aware that the Committee treated me in any way with disrespect. I suppose the rumour has arisen from the fact that when I found my name included in the Committee I asked Mr. Dibbs, who was then acting for me to write to yourself, as Chairman of the Committee, requesting to have his name substituted for mine, as my then state of health prevented me from attending; but as far as discourtesy to myself is concerned I have none to complain of I think the boot is rather on but as far as discourtesy to myself is concerned I have none to complain of. I think the boot is rather on the other leg-that I treated the Committee unintentionally with discourtesy by not replying to their com-

1441. At the time you asked Mr. Dibbs to write you were attending to the duties of your office? No, he was acting for me.

1442. Do you remember the date? I think it was a day or two after the appointment of the Committee, but I am not sure.

1443. After the adjournment to go to Glen Innes? Yes, I think so.

1444. Is it not the fact that you resumed duty on the day previous to the House sitting again after the adjournment? Yes, I believe it was on the Monday following the opening to Glen Innes that I took charge of the Department again.

1445. Who is the agent here for Carson Woods & Co.? I really do not know; I see by these papers that Mr. J. C. Dibbs has been acting as agent; but I saw nobody but Mr. Woods in the matter, and had

no communication with anybody but him.

1446. Was the first payment for the sample car made to Mr. Dibbs—I see an account here headed "Commissioner for Railways Dr. to J. C. Dibbs"? The sample car was approved by Mr. Stuart on the

18th May, and I was sworn in as Minister for Works on the 28th of the same month.

1447. Mr. Stuart says, "This car to be tried and taken if found suitable as an experiment—18/5/83." Is that the minute? Yes. So that the whole thing had been decided and did not crop up again until some

time after I was sworn in as Minister for Works.

1448. Would you consider from the fact of the account for the sample car being made out in Mr. Dibbs' name, that Mr. Dibbs was in some way connected with the car? I should think there would not be much doubt about that.

1449. The Department would not have paid the account unless it was satisfied that Mr. Dibbs was agent for the car?

I should think not.

14:0. Mr. Poole.] At the trial, when yourself and the officers of the Locomotive Department were present, do you know whether these officers had been summoned there in order that they might officially witness this test? I should think so; they had no business to be there otherwise; they would have been neglecting their work if they had not been summoned there. I more particularly presume that they were summoned to attend from the fact that there were so many of them present.

1451. Is it in accordance with the admitted rule and practice of the Department for an officer to volunteer information when his superiors are present, or to make a report unless asked for it? I should certainly think that in such a case as this any officer would be bound to point out any defects he might notice to

his superior officer.

his superior officer.

1452. Is it not in accordance with the practice of all the large departments of the Works Office that an inferior officer generally gets snubbed if he volunteers a report upon any subject? As a matter of fact there were no inferior officer there; all the officers present were the heads of their different branches.

1453. They were inferior to the Commissioner? Yes; we had there the Traffic Manager, the Engineer for Existing Lines, the Locomotive Superintendent, all of whom are heads of their respective branches.

1454. I would call your attention to question 666, page 24, of the evidence before this Committee—a question put by myself to the Commissioner: "Independently of the mere quality of workmanship, I think I understood you to say practically that you accept the responsibility of ordering these cars, in relation I understood you to say practically that you accept the responsibility of ordering these cars, in relation to their design, and, as you conceive, to their general usefulness in the Department." The answer is, "Yes, as far as recommending I take the responsibility of that, as the officer who is charged with and responsible for the proper administration of the Railway Department." So that so far Mr. Goodchap, as chief of the Department, practically takes the whole responsibility upon himself of the ordering of these cars? In a very manly manner he takes the responsibility, but I think it hardly fair that it should all rest upon his shoulders

1455. Your answer to the Chairman a little while ago was to the effect that the sample car had been received prior to your being sworn in as Minister for Works? Yes, the sample car had been bought. 1456. I would call your attention to Mr. Midelton's evidence on the 17th September, 1884, question 1280:—"Did you then express to the Minister a favourable opinion as to the adaptability of the dumpcar to our traffic purposes? I do not remember having done so; I do not think I spoke to the Minister at all until after we left the trial and went round the goods-shed; I do not remember expressing myself in favour of the car to him"——? In reply to that I have already sworn to-day that Mr. Midelton not only expressed himself as favourable to the under carriage, but he particularly pointed out the spiral springs and other things about the dump care as a very great in part and other things about the dump care as a very great in part and other things about the dump care as a very great in part and other things about the dump care as a very great in part and other things about the dump care as a very great in part and other things about the dump care as a very great in part and other things about the dump care as a very great in part and other things about the spiral and the spiral springs and other things about the dump-car as a very great improvement upon the heavy and cumbersome style—these were almost his own words—adopted in our ordinary rolling stock; and he recommended me strongly to secure this car for the sake of the benefit we should derive from the bogie alone. I am quite

distinct on that point.

I457. I would like to call your attention also to the two following questions, 1281 and 1282: "Did you advise the Minister to purchase the cars?—Certainly not. You are quite clear on that point?—Yes, I am quite clear. If he had asked my opinion as to purchasing the cars, I should have said decidedly not to purchase them. How could I do otherwise in the face of a minute like that on the printed papers?" I may perhaps explain to the Committee that I have not said Mr. Midelton advised me to purchase the cars as a car; but he advised me to secure the bogie, as the bogie was a vast improvement on our present I do not say Mr. Midelton advised me to buy the dump-car as a car, but he advised me to buy

the bogie, and he raised no objection to the car itself."

1458. I would like also to draw your attention to question 1283: "You are quite sure you never expressed a favourable opinion of the cars to the Minister, or advised him to purchase them?—I am quite sure of that"——? That is what I say; I say he did not express a favourable opinion of the car as a car, but he did express a very high opinion of the bogie, and the necessity of securing the bogie for our requirements.

The Hon. 1458. As he expressed a favourable opinion of the under carriage of the car, and no unfavourable R. A. Wright, opinion of the remainder, you took it that his opinion as a whole was favourable? Quite so; when Mr. Midelton expressed a favourable opinion of one part of the car he might if he had chosen to do so have Midelton expressed a favourable opinion of one part of the car, he might, if he had chosen to do so, have condemned any other part of it. 23 Sept., 1884.

1459. Mr. Teece.] I understood you to say that it was never intended to use this car for ballasting purposes? No; no sane man having a knowledge of railway construction would recommend this car for ballasting the road.

1460. Will you look at Mr. Read's minute of 5/4/83. He says, "The principle would appear to be well adapted for ballast waggons," and it is apparently to that that Mr. Midelton refers in his minute, that part of which seems to be in answer to this remark of Mr. Read. So that if there is any insanity in the matter it does not appear to be referable to Mr. Midelton? I did not accuse Mr. Midelton of insanity. I say no man, who understands the necessary conditions of ballasting work on a railway line, could recommend this car for that purpose. In ballasting a railway the material must be dropped on the line, whereas this car would drop it off the line.

1461. Then it was Mr. Read who made this "insane" proposition? Mr. Read is merely a traffic officer

and does not understand railway ballasting.

George Cowdery, Esquire, called in and examined :-

Esq.

G. Cowdery, 1462. Chairman.] What position do you occupy? I am Engineer for Existing Lines.

1463. Mr. Wright.] You were present on the occasion of a trial of a dump-car in Darling Harbour? 23 Sept., 1884.

1464. Will you state to the Committee what is your opinion about that car, and its suitability for general traffic, or for traffic of any special description, and also as to the general design, workmanship, and material of the car?

1465. Mr. Poole.] Were you present at the test? Yes. The car was loaded with billets of wood, put in endways, and not a suitable load to dump at all. I do not think the car was intended for that. It did not properly dump the load; one reason was that it was not a suitable load to dump, and another that they attempted to dump it on level ground—ground nearly or about level with the road. But I think at the same time that it would dump coal, or mineral, or gravel, very well, provided there was a suitable place for it,—that is, a raised road.

1466. Or a sunk pit? Or a sunk pit, which is the same thing; that is, a get-away for the material.

1467. Mr. Wright.] Will you state to the Committee whether you considered the action of the dump-car satisfactory on that occasion—its action as a dump-car? Perfectly.

1468. Did you notice the general design of the car? Believing I would be questioned on the matter to-day I went down and had a good look at it yesterday. I had not paid much attention to it since the test, as it was not in my Department.

1469. Do you think the car sufficiently strong to carry the weight? Yes, I think so. 1470. Do you think the bogic sufficiently strong? Yes.

1471. Did you notice the workmanship of the car itself? Yes; the workmanship appears to me to be It is not, perhaps, the neatest work in the world, but it is strong and sufficiently good for the strong.

1472. You are speaking now of the sample car? No, one of the others.

1473. What about its adaptability to our roads—had it a continuous drawbar? Really I could not I do not remember that.

1474. Did you notice the way the buffers were placed on the cross-heads? Yes.
1475. Did you see anything weak or defective in the way they were placed on the cross-heads? No.
1476. Do you consider the cross-heads strong enough? Yes; I think the strength is sufficient. It is not

so strong as some of ours, but it should be sufficiently strong.

1477. You think there is no risk in using that construction, with the buffers placed upon the cross-heads

unsupported? I do not think there is.

1478. Did you notice what arrangement the new car has got in place of the king-bolt? The car I examined has a king-bolt, made to rise up and down to suit the dumping arrangement.

1479. Is there any more danger of that king-bolt breaking than there is of the king-bolt in our ordinary rolling stock? I do not see that there is any danger, even if there was no king-bolt.

1480. Is there no danger of the car dumping while in transit? Not with that socket; that is quite sufficient when it is in its normal position.

sufficient when it is in its normal position.
1481. Is it locked in any way? It is loc

It is locked with a link over the lever, and in its normal position the lever has a tendency to keep its proper position without the link.

1482. Do you know of what material the king-bolt is made—whether it is iron, steel, or brass? No, I did not notice that.

1483. You think, at all events, the car is perfectly safe to travel on our lines? Yes, I am quite game to travel on the top of one of them anywhere on our lines for any distance; I should be quite as safe on the load as on a train running along the rails.

1484. You have gone over the car generally;—did you see anything specially defective in it? No, I did not. I examined the way the doors are fastened, and that seems to be all that can be desired. It is quite possible to put another safety appliance to prevent dumping—that is, to simply draw a loose chain over the handle of the wheel that dumps the car.

1485. You think that in the traffic over our lines, where there are sharp curves, there is no fear of the body of the car becoming disconnected from the bogie? I do not think there is any chance of it.

1486. Chairman.] Have you examined the axles of these cars? Yes; I examined a good many of them

yesterday, perhaps a dozen.

1487. What kind of axles are they? They are made of hammered scrap-iron.

1488. Did you notice any defects in the axles? I noticed what was pointed out to me. There were some slight holes. I did not probe them or try them in any way, but they appeared to be chiefly small scales, and outside abrasions. That is very common with hammered scrap-iron.

1489. Did you examine the wheels? Yes; if you see one of them you see them all.

1490. What kind of wheels are they? Cast-iron chilled wheels. I think the best proof of the quality of the wheels

wheels is their having run thousands of miles, the same description of wheel being in common use in G. Cowdery, America. I must say I do not favour cast-iron chilled wheels at all, only that I know American cast-iron is very much better than we get usually.

1491. You have said that even without a king-bolt you do not think there is any danger of the body of the 23 Sept., 1884. car becoming detached from the bogie? No, not as it was originally.

1492. Supposing the truck should go off the road, what would be the result? There would be a capsize in any case, I expect.

1493. Do you think there would be any fear of the body of the car becoming detached from the bogie frame in that case? I do not believe it would even then, unless it was a regular smash—a turn-over, or

In cases of that kind any truck comes to grief. something of that sort.

1494. Have you carefully examined the workmanship and materials used in connection with the dump-I was shown some of the iron that had been hammered and tried, and it appeared very good indeed. That is all I can tell you about the quality of the iron. They twisted some of it into all sorts of shapes, and it seemed to stand without any fracture. I saw a couple of hooks that were being bent under the steam hammer; evidently they had had a great many blows, and they did not show any signs of fracture.

1495. You were present at the trial with billet-wood? Yes.

1496. What quantity dumped out? Very little indeed; but it was the rail round the side that prevented it from being done. The car was not made for it.

1497. Were you present at any other test? No, I was not.

1498. Were you officially summoned to be present on that occasion? Yes, I think the Commissioner asked me to go down with him.

1499. Were you asked for an opinion as to the adaptability of this car? I forget really whether I was or not. I know there was a good deal of talk about it on the ground at the time.

1500. Is it usual to ask for your opinion about any rolling-stock? No; it is not in my department at all. 1501. Mr. Wright.] When you were present on that occasion had you seen anything radically wrong in the design or construction of this car would you have felt any difficulty about drawing my attention to Certainly not; I should have considered it my duty to do it.

1502. Would you consider that any officer present who saw anything that was decidedly deficient would fail in his duty unless he called my attention to it? Certainly. I know Mr. Midelton, in speaking of the dump-car—of the under carriage particularly—drew attention to the style of it, and pointed out how simple and good it was, and that it was all that was necessary for a car of that description for carrying goods.

1503. You do not consider that any officer present would have been going out of his way if he called my attention to defects in this car? Certainly not. I think he would be neglecting his duty if he did not

do so, most assuredly

1504. Mr. Poole.] Will you look at this sketch (on the table). I think your answer to Mr. Wright was that you consider this cross-head or head-stock (pointing to sketch) sufficiently strong to withstand the strain of a train of 300 tons weight coming on it suddenly? Yes. I do not say it is as strong as it would be if it were braced; I do not think it is as strong as ours are in that respect.

1505. Supposing there is a train of 300 tons, running 20 miles an hour, with an engine of 40 tons weight, and it is necessary for it to pull up rapidly, do you consider that head-stock sufficiently strong to with-stand the strain on the truck nearest the engine? I think so.

1506. Mr. Garrard.] You think that, if necessary, additional safety appliances might be applied to this dump-car? Only what I have suggested.

1507. Have you had any experience of the running of cast-iron chilled wheels? No, I have not. I have seen cast-iron wheels on contractor's waggons.

1508. I think you said that personally you were not in favour of cast-iron wheels? I am not. 1509. But you have no hesitation in saying that these dump-cars are perfectly safe? I have it I have not.

1510. Did any other officer besides Mr. Midelton express any opinion in favour of this car? I do not know whether there was any other officer there; I fancy the Traffic Manager was there, I think so. 1511. Chairman.] Are you the inventor of a new kind of coupler? I am one of the inventors; Mr. Thomas, of Mr. Whitton's department, and myself.

1512. How long is it since this coupler has been in use? Something over three years.

1513. How many trucks have been fitted up with this coupler? About 250.

1514. Who recommended this coupler to be fitted on to freight trucks? I think Mr. Burnett recommended it; I know he approved of it and suggested a chain to couple it to the other stock, which I thought a good deal of too. It was made and has been used for the purpose since.

thought a good deal of too. It was made and has been used for the purpose since.

1515. Is this coupler in general use or set apart for any particular kind of traffic? I believe it was ordered for coal and ballast trucks in consequence of their being able to keep them as much as possible together. These couplers were ordered chiefly for the locomotive coaling, because then the trucks fitted with them could be kept together; and also for trucks for ballasting the railways. Ballast-trucks fitted with them are being made, and two of them are completed, up at Clyde; and I have made some

improvements on them, which I considered desirable.

1516. Are the 250 trucks fitted with the patent coupler in use? I believe so; they were put on the road. 1517. Is it true that a number of these trucks are at Eveleigh and other stations on the line, and that they have not been used for some time past? I do not know; I have had nothing to do with that part of the affair. I believe a good many of them have been standing on the siding, for what purpose I do not know.

1518. Have you heard any complaints regarding their safety? I have heard nothing officially. I have heard it mooted that there has been something wrong with one or two of them, but not officially. 1519. Are you aware whether any of the officers of the Department have objected to the use of these couplers on the trains? Not directly, I think.

1520. Are you aware whether there have been any accidents from the use of these couplers? They have not come to my ears.

1521. They have never been reported to you? No. 1522. Are they still fitting up some of the trucks with them? They are fitting up some for ballasting purposes. There is a train of them beyond the Blue Mountains and my men are working a lot of them on the permanent way, and I have heard no complaints.

23 Sept., 1884.

G. Cowdery, 1523. If there have been any accidents they have never been reported to you? They have never been reported to me. The first three trucks fitted with these patent couplers that were made were running with coal I suppose some three months before we gave a trial. There were a great many gentlemen there, and I do not think there was one amongst them that could disapprove of them in any shape. They were tried in every way we could think of. Mr. Burnett, the then locomotive engineer, I know was very

pleased with them.
1524. The couplers, I believe, have been patented? Yes, not only here but all over the world.
1525. Have they been used on any other railways? No, they have not. It is a very difficult thing to get introduced on account of the immense rolling stock on all the lines that are fitted with the ordinary couplings. But I see that in America they are talking of making the use of automatic couplers compulsory. In Massachusetts, for instance, there has been a great deal of discussion of late, and there has pulsory. In Massachusetts, for instance, there has been a great deal of discount of the been a Board appointed, who have written to twenty-two managers of railways to ask their opinion on the been a Board appointed, who have written to twenty-two managers of railways to ask their opinion on the advisability of using automatic couplers, on account of the great sacrifice to life and limb; and twenty out of the twenty-two have approved of their being adopted. Now there is a Select Committee to choose out of all that have been patented one out of the lot, if they can, to suit all parties. They feel that if they do not do it themselves the law will compel them before long. I can show you that in some of the American

papers. The American Railway Age, I think, has a good deal about it.

1526. We will be glad if you will have the paragraphs referred to appended to your evidence? supply them. (See Appendix D1.) I think I can show you that the English people think something of it as well. I have here a first-class certificate from England, as the result of a trial to which the Board of Trade were invited and were present. Since it was over the Chairman has made some inquiries about it and made some little suggestions. I do not know whether they are improvements or not; it is very doubtful. This is the certificate. (Produced. Copy handed in. See Appendix D2.) This certificate is from the National Exhibition of Railway Appliances—a special exhibition for such things, not a general exhibition. 1527. Mr. Poole.] In answer to the Chairman you said the ballast trucks fitted with these couplers are being made at Clyde? Yes.

1528. Are they being made specially to suit the couplers? Yes, they are to be made with the coupler attached. It is not necessary that they should be made specially for it, because the old couplers could

be applied if necessary; but they are being morticed for the patent couplers.

1529. These additional trucks are wanted, I suppose, irrespective of what couplers are to be used with

them? They were ordered specially for these couplers.

1530. To throw other trucks out of use? No, not to throw other trucks out of use.

1531. Do you want trucks irrespective of any particular couplers? Yes, certainly; they are not on pur-

pose to use these couplers; certainly not.

1532. Have you heard incidentally that any officer in charge of the rolling stock objected to the patent couplers? I heard Mr. Scott say he did not like them. I have asked him time after time to show why he did not like them, and he has never been able to give any reason.

1533. Was Mr. Scott present at the official trial? Yes.

1534. Did he express any opinion with respect to the efficiency of the coupler, or against it? I do not know that he did. In fact I do not know that I spoke to him about it that day at all. Mr. Thomassen, who is the agent of a large firm at home who buys up a great many of these patents, wrote something in the paper, saying he thought it was cribbed from their patent. He was in Melbourne at the time, and we let him know we were going to have a trial, and after seeing it he withdrew these expressions publicly, and acknowledged it was the best coupling ever invented.

1535. Is Mr. Scott, from his position as Locomotive Engineer, more directly answerable for the kind of couplings that are used on all our rolling stock? I do not know. I should imagine that, if there were any couplers or anything else in the present rolling-stock that he did not approve of, he would soon make

it known.

1536. May I ask you who gave the order for these couplings? I got the order from the Commissioner, as I do all my orders.

1537. And they have been imported, some hundreds of them, from England? Those that are on the

trucks. Those that are being put on now are made here. 1538. How many were imported? Two hundred and fifty.

1539. Have you found you cannot make them here with advantage? I believe we can make them They are all made of a material which was shown at the Exhibition here as something very splendid in the way of toughness—crucible steel.

1540. To ensure tenacity and strength? Yes, or else they could have been made cheaper.

1541. Is it a fact that a train composed of a reasonable number of trucks, united with the patent coupler, became disconnected while in motion? Not that I am aware of.

1542. No report has been made to you that such has been the case? No.

1543. Where are the trucks used more particularly that are fitted with the patent coupler now? We are using some over the other side of the Mountains, and a good many in the Sydney district—on the

permanent way branch. 1544. Ballasting? Yes A good many of them are used for bringing coal from Darling Harbour. I do Yes. not know why they have not been used generally. Probably the best reason why they have not been more generally used is on account of their being a different coupling from the others, and therefore they cannot split them.

1545. They want trains composed of one kind of coupler? Yes, to some extent. Loose couplers can be

coupled to any other stock.

1546. Is there much difference between the cost of a set of patent couplers and the cost of ordinary couplers? I do not know the difference, but in all probability they will be made cheaper than those

already supplied, 1547. Mr. Wright.] Cost for cost as against the ordinary coupling, which is the most expensive? I do not know the cost of the ordinary coupling.

1548. Do you say the patent coupling will eventually be made cheaper than the ordinary one here? No;

cheaper than the patent one has hitherto been made. 1549. Cost for cost, which do you think will be the cheapest? I do not think the patent coupler will be the cheapest; but I do not know that it will be very much dearer.

1550.

1550. You have no doubt of its superiority as regards the saving of life? I am certain of it, and I think G. Cowdery, I ought to know something about it, having been for forty years on railways, and studied the matter thoroughly. I have studied all the patents that have been taken out, and I am certain there is not at the present time a coupler equal to it.

1551. You have not answered my question as to its being in your opinion unmistakably a life-saving apparatus, as compared with the other? Most unquestionably. There ought not to be any sacrifice of life at all; there is no necessity to go in between the trucks.

1552. Do you remember whose orders you got to use this coupling? I can hardly tell you. I know we got the order from the Commissioner to have them put on. The order was sent to the Locomotive Department.

Department.

1553. About how long ago? Something over two years ago. The first trial was over three years ago.

1554. You have had no official communication of any sort condemning these couplers? No.

1555. Mr. Poole.] I would like to call your attention to a portion of Mr. Scott's evidence, given on the 27th August, 1884. In answer to a question put by myself, question 331: "The couplings, irrespective of who makes them, or who is the patentee, are, in your opinion, not suitable for our purposes"—to which Mr. Scott replies: "There is a difficulty in coupling them with the ordinary stock." The next question, 332, is: "Supposing the whole of our stock was fitted with these couplings, would you consider that an advantage"? He replies, "I do not think it would be any advantage"—? Yes, he talks in that way, but he never gives any reason for it. It is very easy to say he does not think so, but when you come to ask him why and wherefore he does not give the slightest reason.

1556. He says there is a difficulty in coupling them with the ordinary stock? That difficulty can be got over.

1557. Mr. Wright.] Who is the owner of the patent now?. I hold one-third, Mr. Thomas one-third, and

Hudson Brothers a third.

1558. Chairman.] I should like to draw your attention to question 539, in reply to which Mr. Midelton says:—"I think it is likely to uncouple with a heavy pull, and it does not seem to me a good mechanical job as regards the design; it is not a coupling I should recommend or support; on the contrary I have from the first opposed it; I do not think it is safe"——? Of course I never heard of this before; but I should like you gentlemen to go and see it for yourselves. There are two sets at Granville now that I have made some slight improvements on; and you can have them loaded and bumped about as you like, and if you can find any fault with them I shall be perfectly satisfied.

Mr. John Goff called in and examined :-

1559. Chairman.] What position do you occupy? I am a draftsman in the Locomotive Engineer's Office. Mr. J. Goff. 1559. Chairman | What position do you occupy: I am a dialisman in the service in New South Wales? 23 Sept., 1884.

1561. Are you aware whether your name was ever mentioned as an officer qualified to take the position of Superintendent of Rolling Stock, with Mr. Bingham and Mr. Bourn as subordinates? No. 1562. You have made application? Yes.

1563. Has the Commissioner stipulated that whoever fills this position shall go through an examination, and design a car? Yes.

1564. And you are prepared to submit to that test? Yes..
1565. Are your plans prepared? Yes; and, I believe, handed to the Commissioner.
1566. Have you seen the sample dump-car? Yes.
1567. Have you seen the cars imported by Mr. Carson Woods? Yes, a portion of them.

1568. Do you know anything about the tare and dimensions of the rolling stock in use here now? Yes, I have a general idea of it.

1569. How do you consider the dump-cars now being imported compare with the other rolling stock now in use as to durability and suitability for general traffic or special traffic? As regards durability I think the dump-cars will be fully as durable as any we have now in use on the lines; they can be used also for many purposes, for which our own cannot, and I suppose we have the means to apply them to special

1570. Do you wish to convey that they are suitable for special traffic, but that special provision must be made? Yes, and for ordinary traffic they are as good as the other rolling stock.

1571. Have you been accustomed to consider the tare of a vehicle or truck as a matter of any importance?

Certainly.

1572. Then if an officer of the Railway Department has stated that 2 tons of additional tare is of no consequence, in your opinion that is incorrect? Yes, it is like a hammer of 2 tons weight hammering on

1573. Have you examined the iron-work of the sample dump-car? Yes.
1574. What sort of workmanship do you call it? Rather rough.
1575. How is it as to strength? I would not be so presumptuous as to say that the iron is not good

1576. Have you examined the axles of the sample car and the axles now being imported? Yes, they are both rough.

1577. Are the axles now being imported to complete Mr. Woods' contract a fair sample, according to the sample car? I do not think there is anything to choose between them.

1578. They are rough, but you cannot say anything about their strength without a test? No.

1579. Have you noticed the king-bolt provided in the cars now being delivered? Yes.

1580. Do you consider that strong enough? I would like to see that a little stronger.

1581. What is that made of? It appears to be a steel casting.

1582. What are ordinary king-bolts made of? Iron.

1583. Do you think the quality of wood used in the dump-cars is equal or superior to Colonial timber?

1583. Do you think the quality of wood used in the dump-cars is equal or superior to Colonial timber?

Taking lightness and strength together it will compare favourably with Colonial timber.

1584. Do you think it is as good or better? I have not had very much experience of Colonial timber, but I should consider the wood used in these dump-cars would compare favourably with other timbers I have 1585.

Mr. J. Goff. 1585. Have you any idea how the hooks and chains are wrought—do they seem to be fairly wrought—the links fairly welded? They look rather rough. 23 Sept., 1884. 1586. Do you think they are properly shut and secured? Yes, I do. My opinion of the iron-work on the car I examined is that it looked like a singed cat, but it might be better than it looked.*

1587. What class of wheels have these cars under them? Cast-iron, chilled.
1588. Have you had any experience of these wheels? Yes, twelve years in America.
1589. What do you consider the actual running life of these wheels, taking a fair average? From 50,000 to 100,000 miles.

1590. If it has been stated by one of two officers that from 50 to 100,000 miles would be a fair life, and by the other 200,000, would the average of the two statements be a fair estimate? It depends a good

deal upon the traffic on the road.

1591. I do not think you quite understand me. If two officers in the Railway Department of New South Wales have stated respectively, one, that these wheels would run 200,000 miles, and the other, from 50 to 100,000 miles—would we, if we put these two statements together, get a fair average of the life of the Ϋ́es.

1592. These two statements having been made, which is the more likely to be correct? I think the smaller number; that would be the safest to reckon upon. Cast-iron is a material that could not be

depended upon to last longer. It would depend upon the depth of the chilling.

1593. You have seen the new cars;—are they a fair sample in work and material of the pattern car?

They are as good at least.

1594. Were you the inspecting officer, would you accept the cars now being landed as fair workmanship, as against the sample car? Certainly.

1595. Should you consider the cars, from what you have seen of them, as safe cars to run on our lines over the mountains and everywhere else? I should not be afraid of them myself.

1596. Have you examined the mechanism of the car? Yes.
1597. Do you think there is any danger of the car itself jumping off the under frame when going round curves or shunting? There is no more danger than with any other car. It would depend upon the King-

bolt; if that gave way it might do it.

1598. Do you think the King-bolt equally as strong as those used in ordinary cars? I do not know the material, but I should rather see it a little stronger. If of the same diameter and strength it would be about equal to the king-bolts used in other cars.

1599. Do you think these dump-cars are cars that are fairly suitable for general traffic—the ordinary merchandise traffic on the railway? Yes; similar cars without the dumping arrangement are in general use throughout America.

1600. Supposing we abolished the use of these things as dump-cars, are they suitable for general use on the railway? Certainly; they might require some alteration for special purposes.

1601. Do you consider the cars are built of sufficient strength to carry the load they are marked to carry? Yes, they are.

1602. 20 tons? 18 tons only, I believe. 1603. 20 American tons of 2,000 lbs.? Yes.

1604. You think the bogie and the body of the car are both of sufficient strength? Yes.

1605. Is this dumping arrangement a new principle? No, a dump-car is a ballast-car; it is an adapta-

tion of an old principle.†

1606. Are you aware of any railway where such cars have been used to any extent, either for special traffic or general traffic? This particular adaptation is new.

traine or general traine? This particular adaptation is new.
1607. If anybody has stated that the king-bolt of these new cars is made of iron, you believe that is incorrect? Yes, I believe it is a steel casting.
1608. Generally what is your opinion of the new dump-car in comparison with the ordinary cars in use; how does it compare for tare, carrying capacity, and general usefulness with the ordinary cars in our rolling stock; do you consider the imported car as good a car for general purposes, and as strong a car, as the G car? I think the G car is stronger and heavier than is necessary.

as the G car? I think the G car is stronger and heavier than is necessary.

1609. Do you consider the dump-car is a good car for general traffic, and as capable of standing the knocking about and strain of the traffic as the G car? In comparison with weight it will stand more.

1610. At all events, I gather from what you have stated that generally speaking you favour the adoption of this car as being a useful car on our lines? Yes, I think it is a move in the right direction.

1611. Do you think the fact of this car being 2 tons less weight than our G car, and carrying 5 tons more, is a very decided advantage? Certainly.

1612. Has your experience taught you that one object of railway managers is to reduce the weight of rolling stock? Yes, certainly.

1613. Chairman.] In reply to Mr. Wright, you stated that you did not think the king-bolt is as strong as you would like? I should like to see it a little bit stronger, but chiefly on account of not knowing what the material is. If I saw it tested I could form a better opinion. the material is. If I saw it tested I could form a better opinion. 1614. What is the material? It appears to be a steel casting.

1615. Would you recommend a steel casting to be used as a king-bolt? I should use steel or iron. Steel has its advantages. You can get steel to carry 30 per cent. more than iron.

1616. Have you examined the dumping apparatus? Yes.

1617. Do you see any danger of the car dumping itself going round a sharp curve? I see none what-

ever; I do not think it would dump itself; but as a security against that I should have the links that hold it down a little further apart.

1618. Have you examined the buffers? Yes.
1619. What do you think about the strength of the buffers? The buffers themselves are good enough. The car would be the better of having some brace behind the buffers. The car has been designed for a centre buffer originally.

1620. Is there any continuous draw-gear with this car? No.

1621. Can continuous draw-gear be fitted to it? An engineer can do anything.

1622.

^{*} NOTE (on revision):-I mean to convey the idea that the iron may be good notwithstanding the rough looking exterior.

† Note (on revision):—I meant to say that dump-cars have previously been used for ballasting purposes, and these are an adaptation of an old principle.

1622. Can it be fitted to this car? It would require a lot of scheming, but no doubt it can be done.

1622. Can it be fitted to this carr It would require a low of scheming, and the land was schemed 1623. What would be the cost? It is difficult to say what would be the cost until the plan was schemed 23 Sept., 1884.

Mr. J. Goff.

1624. Do you think this car would be safer if the continuous draw-gear were there? A continuous draw-bar is always an element of safety.

1625. Mr. Wright.] Do you consider the draw-gear is a necessity? Yes, for a heavy train.

1626. Chairman.] You state that you have had some experience in America. Are the gradients and curves there similar to ours? Some portions of them.

1627. I mean generally? In the middle States of America, along the big valleys, the gradients and curves vary as they do here; on the plains in the west the lines are level, but on the mountains they have just as sharp curves and steep gradients as we have in New South Wales.

1628. Have you seen them? Yes, I worked on the Pacific Railway at one point.

1629. Have you seen any cars fitted up similar to these dump-cars, running on sharp curves? Not the dump-car; not exactly like it. I have seen the old arrangement they have had for ballasting for the last thirty or forty years.

1630. Mr. Poole.] You mean contractors' waggons? Yes.
1631. Chairman.] I understood that in reply to Mr. Wright you stated that the iron seemed to be rough, and that you could not offer an opinion regarding its durability without testing it? Yes.

1632. Do you know whether any of these wheels or axles have been tested—I mean the dump-car wheels. and axles here? Not that I am aware of.

1633. Before giving an opinion as regards their safety I understand you would like to see them tested? Yes, the axles, before giving an opinion as to the quality of the material.

1634. Then again, I understood you to say that you thought they were a perfectly safe car to run? Yes. 1635. Do you consider them a safe car to run without the test necessary to enable you to give an opinion regarding the quality of the material? In any case if I had charge of the rolling stock on the railway I

should certainly expect to have a number of the axles tested before I accepted them.

1636. I am talking of the axles, as far as you are able to see them at the present time? As far as I am

able to see at the present time I consider the axles safe.

1637. Although you consider them a very rough job? Yes.
1638. Do the Committee understand from your evidence that the buffer would be better if it had a stay at

the back to resist the strain? Certainly.

1639. And it would be better to have continuous draw-gear, and that the materials used in connection with the axles and wheels should be tested? I should judge the axles are good enough, but any man is likely to make a mistake until he sees an actual test of the axles? The work may appear rough, but still be very good. These axles would have looked better if they had had a coat of paint.

1640. Mr. Wright.] The body of this car, I take it from your evidence, is of the general design of all freight-cars in America? Yes. The doors are hung specially for dumping.

1641. If the car were provided with no dump it would be a fac-simile of the ordinary freight-car used in

America? Yes.

1642. Mr. Poole.] You have designed a car as a sample of your knowledge of railway rolling stock, for the approval of the Commissioner? Yes.

1643. What kind of car? A first-class carriage on four wheels.

1644. What railways have you been employed upon? The grand Trunk Railway of Canada, the Royal Danish Railway in Denmark, and the Hungarian Eastern Railway. I have also been with a carriagebuilding firm at Copenhagen.

1645. On any of these European railways do you know of cars similar to this dump-car being in use?

Not with the dumping arrangement.

1646. How long have you been in the Service of this Colony? Since the beginning of January last.

1647. What kind of timber is it they are using in the dump-cars? American pine. 1648. From what State? The Eastern States.

1649. When that timber gets dry is it not very brittle? No, we do not judge it so. 1650. Is it more elastic than Oregon? Fully as elastic, and stronger.

1651. Do you consider that any timber of that class is to be at all compared to our blue gum, section for section? Section for section, in comparison to weight, certainly.

1652. Do you consider that section for section any class of American pine is equal in strength and durability to the same section of our best hardwood? Certainly not.

1653. But in dealing with rolling stock you consider there is an advantage in using lighter material in order to obtain a lighter tare generally? Yes.

1654. And you consider it advisable to sacrifice durability and strength for the sake of lightness? Not

to sacrifice.

1655. To ignore it then? Not to ignore it.
1656. Will you explain? The life of rolling stock is about eighteen years as a general average; I think it is useless to build rolling stock of a weight and strength that will last over that time, because before that time all our plans and arrangements will be changed most probably.

1657. In other words you think that possibly improvements which may take place during a period of eighteen years would warrant you in not building trucks for a longer life? That is my opinion. 1658. You have already stated that you consider a life of from fifty to a hundred thousand miles is a full average of the durability of a cast-iron chilled wheel? No, I will not say it is a full; it is a fair average.

1659. From your past experience what is the average life in miles of English wheels of the type used in this colony, steel tires and malleable centres, all things being equal in the two cases in the working? The English wheels with steel tires of course; you can change the tires on them; the body of the wheel will last a long time if made of good material; but it is a question in my mind if one of the cast-iron wheels is not just as cheap as the tire to one of the ordinary wheels.

1660. You think it would be just as cheap to the Department to put on a new cast-iron chilled wheel as to put a new steel tire on the malleable centre now in use? Yes, nearly so. The tire is turned two or three times and costs money each time it is turned.

1661. How many miles would a wheel of the present type run without a new tire, but simply turning the old one? Perhaps 100,000 miles; if of very good material it might run 150,000 miles.

1662.

Mr. J. Goff. 1662. In the one case then we have it on these terms: A chilled wheel in your opinion, will run from 23. Sept., 1884. 50 to 100,000 miles, fair work, and a wheel such as in common use now in the Department, with a steel tire, without renewing the tire, will run from 100,000 to 150,000 miles? Yes, turning the tire down as long as it is fit to be turned. There is one thing I should like to mention in consideration of making that comparison; taking into consideration the material of which cast-iron chilled wheels are made it will come to nearly 50 per cent. of what the wheel itself is worth; when broken up the value of the metal is taken into consideration in the cost.*

1663. In your experience in the use of chilled wheels to what depth has the chilling penetrated? About

three-eighths of an inch.

1664. As much as that? Yes, some of them more.

1665. Irrespective of its dumping properties, do you consider this a suitable car for our railways? Yes,

independent of its dumping properties, with some slight alterations to suit the traffic.

1666. Have you been over our mountain railways? I have been between here and Melbourne several

1667. Have you been to Bathurst or Hartley? No.

1668. Do you think from your experience of our rolling stock here, and of the use of this particular description of cars in America—dump-cars—that all things considered, they are a decided improvement on our present description of rolling stock for all ordinary purposes? In comparison to the weight that they have to carry, and in comparison to the dead weight of the car itself, I think it is a decided improvement—a step in the right direction.

1669. Do you think they are as safe as our own stock, running round 8-chain curves? I cannot see but

what they are fully as safe; I would not be afraid to run them.

1670. Mr. Garrard.] What position did you occupy in the different Railway Companies you have named? The last position I held, from 1870 until I came here, I started as draftsman and was afterwards manager of the works for building railway and tramway rolling stock.

1671. Where was that? In Denmark.

1672. In your experience in Canada did you find many fractures with cast iron chilled wheels? The engineers argued at that time, and do yet I believe, that there were less with cast-iron than with other wheels in the warm climates, but in the cold climates they were greater. In the warm climates there

wheels in the warm chimates, but in the cold chimates they were greater. In the warm chimates there were no more fractures with chilled wheels than with steel tires.

1673. Mr. Wright.] Have you been in America recently? No; I left America in 1868.

1674. Do you know what kind of wheels are universally made there? Chilled wheels.

1675. Where they have 120,000 miles of railway? Yes, they are all using chilled wheels.

1676. Mr. Garrard.] Are the changes of temperature there equal to those from our lowlands to our mountains? Yes; during the year the temperature varies between 95° and 40° below zero in parts of Canada.

1677. Are the changes of temperature sudden there? Yes.
1678. The carriage you designed to put before the Commissioner you say is a first-class carriage on four wheels? Yes.

1679. Not bogies? No.

1680. Do I understand that you do not favour bogie carriages? Certainly I favour them; but I designed

this carriage on four wheels because it was intended to carry a small number of passengers.

1681. Chairman.] Do I understand that you favour four-wheeled carriages? Only in certain cases. I have given my reasons for so doing to the Commissioner. For a long carriage and a large number of passengers most decidedly it should be on bogic frames.

1682. Was your attention ever directed to the Allison Manufacturing Company's car? I do not know

that I know it.

1683. Do we understand that you are unable to give the Committee any opinion regarding what has been done in America since you left in 1868? Certainly I keep myself posted up in American matters. 1684. Have you ever been asked to give an opinion regarding the rolling stock in connection with the Government Railways of New South Wales? Nothing more than in connection with the designs, &c., I gave in to the Commissioner.

Mr. Owen Blacket called in and examined:-

Mr. O. Blacket. 23 Sept., 1884.

1685. Chairman.] What position do you hold? I am a manufacturing engineer.
1686. In whose employment? I belong to the firm of Blacket and Co.
1687. Are you a mechanical engineer or a civil engineer? Mechanical; I served my apprenticeship at Mort's Dock.

1688. Are you a civil engineer also? No; I have been a consulting engineer.
1689. Can you furnish the Committee with any evidence about the dump-cars? I have seen the sample

dump-car and a number of the cars now being erected.

1690. Will you inform the Committee what you think of the dump-car as a piece of mechanism? I first saw the dump-car that was supplied as a sample two years ago, and I saw it one day last week; that dump-car is not equal to the cars now being supplied in several respects; it has not got a king-bolt; the frame for the bogies is not so well framed and put together; the buffer-beams at the end are lighter; the catches for the doors are also lighter; so are the under-framing bolts; the axle-boxes in the new cars are far superior to the axle-boxes in the old car; and the safety catch to keep it from upsetting is also a decided improvement on the safety gear of the original pattern.

1691. Have you had any experience of railway matters? I have travelled a good deal on railways in America and other places, and have taken notice of what I saw.

1692. Have you had any experience in manufacturing railway rolling stock? At Mort's Dock I had to do with the manufacture of socil waggers, but not much in other relling stock.

do with the manufacture of coal waggons, but not much in other rolling stock.

* Note (on revision):—I meant to convey, that when broken up, the metal of which the wheels are made is worth nearly 50 per cent. of original cost of wheel.

† Note (on revision):—I intend to convey the idea that I am able to give an opinion as I keep myself posted on

American matters through the technical journals and otherwise.

- 1693. There is an automatic fastening to this car, is there not? There is a fastening, but it is not
- O. Blacket. 1694. Do you think it likely to get out of gear if the car receives a sudden shock? No, there is a catch to hold it. The original car might get out of gear, because there is only a slight spring to hold the catch; 23 Sept., 1884. in the sample car it would be very likely to shake out of place.

1695. Then it would dump? Yes, it would stand a chance of doing so if the handle revolved.

1696. Suppose the car was going round a curve, with one side lower than the other? on one side it might dump in a case like that.

1697. As a matter of fact you have had no experience of railway works or of railway material? No more than an engineer who takes an interest in travelling through other countries to see how other people do

1698. Are you in a position to give us any information with reference to this dump-car? I consider the dump-car a far superior car to the G car which belongs to the Railway Department at the present time.

1699. In what way? It is lighter, with less dead load for the same amount of live load.

1700. Is that a consideration with engineers? It is a consideration because of wearing your road out

1701. The object in all cases is to reduce the dead weight? Yes, the non-paying load. 1702. You think in this dump-car that object is attained to a great extent? Yes.

1703. Mr. Poole.] Wherein does the superiority of the axle-boxes of the new cars now being delivered consist, as compared with the pattern car? The pattern car has an ordinary axle-box without any means to keep the grease from flying on to the wheels, whereas the new ones have wooden slats to keep the

grease from coming out of the axle-box and going on to the wheels.

1704. The superiority then consists in the better method of lubrication? Yes, saving the grease; instead

of losing gallons of oil it is kept from splashing out by these pieces of wood.

1705. Do you consider the lightness of the truck itself as of the first consideration, as compared with its durability and safety in running? I think strength is the first consideration, but we can get strength and still get lightness of construction by trussing it properly with bolts.

1706. Mr. Wright.] Do you think this car is properly trussed? Yes, and of splendid material too, as far

as I could see.

1707. Mr. Poole.] You have compared this car with the new G truck;—do you consider that there is more material used in the construction of the G truck in relation to the work it has to perform, than is necessary? Decidedly. The G truck weighs from 12 to 13 tons; the dump-car weighs about 10 tons; and the dump-car carries more than the G truck. There must be a waste of material in the G truck if the dump-car can do its work properly.

1708. Do you consider, from what you know of both trucks, that the life of the dump-car will be equal to the life of the G car, the usage and length of running being the same in both cases? I think the life of the dump-car would be the longer; there will be less dead weight bumping and battering about, and less dead

weight charging it every time it is shifted.

1709. Have you examined the iron-work—the axles especially—that have been put under these new cars?

I saw the axles as they lay at the works.

1710. What is your opinion? My opinion is that the man who made them had a very good opinion of the axles, or he would have tried to smother these little cracks in them; they are sent out in the rough; there is a little bit of scab upon them; and if the man that made them had thought they were defective he never would have supplied them black; he would have painted them if he had thought they were of bad material.

1711. In speaking of the cracks in the axles, do the Committee understand you to be referring to mere scales, or to cracks penetrating towards the centre of the axles? All that I saw were what we call scabs; none of them appeared to me to go to any depth.

1712. What in your opinion is the strength of the axle in relation to the work it is expected to do? I

consider them quite able to stand the strain that is to come upon them.

1713. Considering all the various positions they may be in? Yes, they are quite strong enough.

1714. Mr. Garrard. What is your opinion in reference to the use of cast-iron chilled wheels? I consider them far cheaper to work than wrought iron wheels with steel tires. A cast-iron wheel will wear

out a steel tire, and if we had the iron the same as they have in America it would be foolish for us to go on using wrought-iron wheels. I have travelled a great deal on American railways, and all the wheels used were cast-iron wheels.

1715. Was there much variation in the temperature through which the trains passed? Yes, it was very cold at night-time, and very hot in the middle of the day.

1716. Did the same cars run right through all variations of temperature? Yes.

1716. Did the same cars run right through all variations of temperature? Yes.

1717. I suppose you have had no connection with Mr. Carson Woods? None whatever. I had not seen Mr. Carson Woods till last Thursday for two years.

1718. You are fully of opinion that the cars supplied by him are safe for use and better adapted for our purposes than anything we have on our lines? I think they are a great improvement on anything we have for certain classes of work. For instance, when carrying railway rails we have now to use two A trucks, whereas one of these dump-cars would do the same work.

1719. One of these cars was tested? Yes.

1720. What was the result? The trial was not a good trial; the load was dumped all in one place; it should have been dumped, some in one place, and some a little further on.

1721. Did you examine the king-bolt? Yes; it is a cast-steel king-bolt, hinged in the middle.

1722. Supposing the bolt turned round ——? The cutter stops it from turning round.

1723. Do you think the king-bolt is of sufficient strength for the purpose? It looks to me about an inch

1722. Supposing the noit turned round — ? The cutter stops it from turning round.
1723. Do you think the king-bolt is of sufficient strength for the purpose? It looks to me about an inch in diameter; that will take 10 tons; the carriage will lift before the pin will shear.
1724. In America nothing but chilled wheels are used? Nothing but chilled wheels.

1724. In America nothing out chined wheels are used: Nothing out chined wheels.

1725. You heard no complaints there of their liability to fracture on change of temperature? No; they only laughed at me when I proposed wrought-iron wheels. American iron is specially adapted for chilled wheels. At the Altoona Railway works they cast as many as three or four hundred wheels a day; they have special appliances for turning them out. These wheels are put under the severest tests; they are examined with a heavy wrought-iron hammer to try and break them.

.1726.

MINUTES OF EVIDENCE TAKEN BEFORE THE SELECT COMMITTEE

O. Blacket. 23 Sept 1884. 1726. Do you know where the wheels for these dump-cars were manufactured? I think it was at Louis-There are car-wheel makers who do nothing all the year round but make car-wheels.

1727. Prior to your visit to America I suppose you were strongly in favour of English wheels? I had never seen anything else. When I went to America and saw things they looked clumsy to me, but when

I thoroughly examined them I was greatly impressed with them.

1728. Mr. Poole.] Were you summoned by the Chairman of the Committee to give evidence to-day? I had a summons signed by Mr. S. W. Jones, the Clerk of the Assembly.

1729. Were you requested by Mr. Carson Woods to go and examine these cars? Yes, I was last Thursday; and until I received a note from Mr. Carson Woods I had not seen him since he went away to

America eighteen months or two years ago.

1730. In your travels through America did you make these matters a matter of special inquiry? After my apprenticeship was up I travelled for three years, studying engineering, and wherever I saw anything mechanical of course I took it up; and having, as draftsman at Mort's Dock, designed several locomotives now running here, I naturally took an interest in railway rolling-stock.

1731. To sum the whole matter up, and taking a connected view of the whole subject, in relation to the weight, the life, and the general adaptability of this car to our railways, in comparison with any other cars the Government have for freight purposes, you are clearly of opinion that the balance of advantages lies

with the dump-car? Decidedly.

1732. Mr. Wright.] I think you have stated that you have no interest in this matter with Mr. Carson Woods? None whatever. I do not know him at all; he is a perfect stranger to me; I do not know him at all; he is a perfect stranger to me; I do not know here to day: I have Mr. Woods any more than any person here. In fact I would sooner not have been here to-day; I have left my work the whole day to come here,

WEDNESDAY, 24 SEPTEMBER, 1884.

Fresent:—

Mr. CHAPMAN, MR. GARRARD, Mr. POOLE,

MR. SUTHERLAND, MR. SUTTOR MR. WRIGHT.

SYDNEY SMITH, Esq., IN THE CHAIR.

Mr. Bird, instructed by Mr. Bird, from the firm of Messrs. Stephen, Lawrence, and Jaques, appeared as Counsel on behalf of Mr. Carson Woods.

Mr. George Downe called in, sworn, and examined:-

Mr. G. Downe. 1733. Chairman.] What position do you occupy? I am Superintendent of Railway Rolling Stock.
1734. Mr. Wright.] Have you seen the imported American dump-cars in the possession of the railway I have seen several of the dump-cars

24 Sept., 1884. 1735. Will you state to the Committee are the defects or the merits of those dump-cars for the purpose for which they were imported, for special traffic, or for their utilization for general traffic; the quality

of the material used in them, and the workmanship;—you are a mechanical engineer? Yes.

1736. And therefore experienced in railway materials? I have been seven years in the Department here, both railway and tramway. When I went out to look at these dump-cars it was after I had noticed that. I was likely to be called here, and I thought it was likely I should be asked to give some evidence. The short time I looked at them was, perhaps, hardly sufficient to give the details necessary for every question you have put, but I looked at them, and at the principles of them, and they appear to me to have many proful points about them. But at the same time it appeared to me there were some little matters that useful points about them. But at the same time it appeared to me there were some little matters that would have to be improved before they could be said to be working quite successfully. I went into no examination of sizes or strength of material; I just took a cursory glance at the cars, and I am inclined to think that two or three defects will come out in the actual practice. Looking at the car as a whole, I think it will be found of good service when brought into practical working order and working properly. With regard to the little improvements that I think might be made, I take one to be the dumping of the car. As the car is now, before you can empty it you have to pass the angle of rest, and it appears to me that when you get to that angle the man has to stand at right angles to it, and it appears to me a me that when you get to that angle the man has to stand at right angles to it, and it appears to me a dangerous position for that man to be in. But, while looking and thinking that, a very simple remedy appeared to me to be able to overcome that. As far as I can see the car appears to me to be one that As far as I can see the car appears to me to be one that would be useful in practice for many special kinds of traffic.

1737. Did you notice what weight the car was able to carry? I did not notice, but everything appeared to be of sufficient strength.

1738. Did you notice the blocks by which the car is attached to the under-carriage? Yes.
1739. Would there be any danger in running round sharp curves of the body becoming detached from the under-carriage? I do not think so.

1740. Do you think the king-bolt is sufficiently secure? It is.
1741. Did you notice the arrangement for dumping;—is there any danger of the car self-dumping while running? I think not; provision is made to prevent that.
1742. The car is weighted to carry 20 tons;—is the material sufficiently strong? Judging from a casual

glance I should say yes.

1743. Do you think the car is capable of doing the work it is intended to do—carrying a load of 20 tons? Yes. 1744. Did you notice anything defective in the workmanship? I did not examine minutely. The work seemed to me of the usual class; rather better than some I saw in the States, where I saw some inferior work. 1745. Can you form an opinion of the workmanship as against our Colonial stock? I did not examine it

1746. There was nothing in the appearance of the thing that struck you as bad in workmanship or

strength? Not that I saw.

1747. Chairman.] You stated that you noticed certain defects in the car; you only gave the Committee particulars of one? I think the links might be improved—the arrangements for releasing those links from the bolts might be improved. I think they are slightly defective.

1748.

1748. In what way? They are worked by a lever from the end. There is a small bit of \(\frac{3}{6} \) rod to keep the Mr. lever out and the safety links up, and that would soon give way; it is too weak for the work it has to do. G. Downe.

Another matter was the fastening of the flaps. When the car is being dumped the lever has to catch the bogie frame. That appears to me to be too light, and it will have to be made stronger when it goes on the road.

1749. Did you notice the way in which the buffers were attached to the car? Not specially.

1750. Did you notice the difference between the way in which they were attached and the way in which they are attached to our own rolling stock? No, I did not take particular notice of that. I looked more at the car and its working.

1751. You did not notice whether there was anything to resist the strain upon the buffer? No. 1752. Did you notice whether there was a continuous draw-gear? There was a volute spring behind the head stock, but the dumping arrangement prevented the draw-bar from carrying it further.

1753. Do you consider it sufficient to have a car constructed without a continuous draw-gear? say from this drawing that there would be no difficulty in drawing the car in practice from that headstock (pointing to plan of car).

1754. You think there would be no danger with a heavy load coming round a sharp curve or a steep

gradient? No, because they are well trussed, and there are four longitudinal on each side. 1755. Did you examine the king-bolt? I did not examine it very carefully.

1756. Can you tell the Committee what class of material the king-bolt was made of? I did not see it. I only saw that there were stops on it.

1757. Did you examine the axles? Not minutely.
1758. The wheels? Not to give an opinion upon them. They were cast-iron chilled wheels.

1759. Did you examine the workmanship? Not minutely.
1760. What is your opinion about cast-iron wheels? That is a divided question among the railway world, as to whether the chilled wheels are good or bad. From what I have seen I should have no hesitation in using them.

1761. What mileage are they supposed to run? That is a question easier asked than answered. Some say 50,000; others say 200,000 or 300,000. There are to be considered the questions of loading, speed, breaking, and the condition of the road, all of which affect the question.

1762. From your experience as an engineer, would you think these wheels fit for ordinary traffic over the mountains? I should have no hesitation in saying they would run 50,000 miles.

1763. Do you think that would be a fair average? Yes, I think it would over the mountains.

1764. Have you had any experience with the wheel tires of our ordinary rolling stock? No. 1765. Have you any idea what mileage they would travel? That is the average. Depends on conditions before stated—may run 100,000 and upwards. Personally I should have no objection to the chilled iron wheels.

1766. Which would you prefer? I think I should take the chilled wheel in preference for its cost, and, under good conditions of road and average weight of loading, I think it would give quite as much satis-

1767. Do you give that opinion from personal knowledge of the subject? Well I have watched the thing very closely as far as our tramways are concerned. I have watched the action of both the steel and the chilled wheels that we have, and I have given considerable attention to the subject.

1768. Did I understand you to say that you had not examined the woodwork and the workmanship sufficiently to give this Committee an opinion upon them? No; only that it seemed to be of sufficient strength to carry the weight.

1769. Mr., Poole.] You have been seven years in the Tramway and Railway Departments of this Colony?

1770. In what position did you enter the service? As draughtsman for the Engineer-in-Chief for Existing Lines.

1771. How long did you occupy that position? For three and a half years.

1772. And since then? I have been Superintendent of Rolling Stock on the tramways.

1773. Previous to your entering the Railway service of this country had you any experience in any other part of the world? No.

1774. And of your own knowledge as to the relative merits of steel compared with cast-iron chilled wheels you give the opinion that these wheels will run 50,000 miles? I said that it was a divided opinion, some say 50,000, and some say 200,000 or 300,000 miles. 1775. Then you gather from your reading that chilled wheels will run from 50,000 to 300,000 miles?

1776. And you think from your reading and observation of the duty done by them on the tramways, that 50,000 miles is a fair average? I think they will do that.

1777. What opportunities have you had before entering the Government service of forming an opinion as to the relative merits of the wheels of rolling stock? None whatever.

as to the relative merits of the wheels of rolling stock? None whatever.

1778. The whole of your experience has been gained in this Colony? Yes.

1779. You spoke of the angle of rest; what angle is that? About 22 degrees.

1780. Is that from the horizontal or from the vertical? From the horizontal.

1781. Taking the body of the truck in rest, it must be tipped up to the angle of 22 degrees before it will empty itself? Yes, before it will empty itself.

1782. Mr. Garrard. You were recently in America?

1782. Mr. Garrard.] You were recently in America? Yes.
1783. Did you see any of these dump-cars in use there? I saw them, but not in use.
1784. Did you pay any attention to the ordinary chilled wheels that are in use in America? I had very

little opportunity of doing so.

1785. Do you know that chilled wheels are the only sort used in America? They are very much used.

1786. Do you know if the iron in America is of that peculiar nature which makes it specially suitable for chilled wheels? It has the reputation of being so.

1787. While there did you hear of any accident from fracture of these chilled wheels? Yes.
1788. Frequently? You will see sometimes as many as six in a month.
1789. Are they more liable to fracture than wrought-iron wheels with steel tires? I would not say that. 1790. Mr. Wright.] You stated that you had the cast-iron chilled wheels in the Tramway service? Yes. 1791.

Mr. G. Downe, 1791. Have you ever had any case of fracture while running? Not from American but from Colonial. 1792. Do you consider the running on tramways more severe than on the ordinary rails? Much more

24Sept.,1884. severe.
1793. Owing to the bad rails? Not only that, but in running over our tram-lines we have to make on grades and we work by the vacuum brake. an average eight stops to the mile, and some of them on grades, and we work by the vacuum brake. According to the vacuum obtained so is the pressure brought to bear upon the brake. And the wheels are small for the load they have to carry.

1794. Have you had any experience of fracture of an American chilled wheel? I know of none.

1795. You stated just now that the dump-car, when at the angle of rest, would not discharge the load; does that apply to all materials? It applies to all. It must pass the angle of rest before it will empty

1796. Then you are not aware whether this car would dump its load? I have not seen it turned over 1797. Mr. Suttor.] With regard to the chilled wheels on the tramways, have you worn any out? have worn out all the original ones.

1798. And what did you replace them with? Cast-steel. We ordered some cast-steel for a trial, and

they gave better results as to mileage.

1799. And your experience is that chilled wheels are inferior to the other wheels? Yes, on tramways. 1800. Mr. Wright.] What is the difference of cost between the American chilled wheels and the cast-steel steel wheels? The steel are much dearer; I think the chilled wheels are about £2, and the cast-steel are £2 12s. 6d.

1801. Mr. Suttor.] Then the difference is only 12s. 6d. per wheel? Yes.
1802. What is the difference in the life of those wheels;—does it compensate for the extra cost? The life is double that of the chilled wheel on the tramways

1803. What was your object at first in inspecting these cars? Because I had seen that dump-cars were a prominent thing, and I wanted to go and have a look at them.

1804. Did you examine the axles at all? I did not minutely.

1805. You do not know whether they were steel or iron? No, I did not examine them.

1806. You said the work compared favourably with the work done in the United States;—how does it compare with work done in the Colony? I think it would compare very favourably with anything done in the Colony.

1807. Can you give any opinion of the carrying capacity of the axles, say as compared with the ordinary I am not in a position to compare them.

1808. Mr. Poole.] From your experience of wheels on our tramways it appears that while the cost of cast-steel wheels may be taken at 20 per cent. in excess of the cost of chilled iron wheels their durability or life is 100 per cent. better? Yes.

1809. Mr. Wright.] How long have the cast-steel wheels been in use on our tram-lines? About two and a half years.

1810. How long does the ordinary chilled wheel last? They last but a few months; not so long as twelve They will run about 16,000 miles, but that will depend a great deal on the loading. Some do not last that.

1811. Mr. Poole.] Do they not soon get double flanged? Yes.

1812. Mr. Suttor. You have no experience whatever on our railways? No, I have only been connected with them as a draughtsman.

1813. Mr. Bird.] Does the man loading the car stand on the body of the car? He stands at the end of the car, in the centre of the width, on the outside of the frame.

1814. As the floor of the car tips up from the body does he move up with it too? Yes.

1815. Then the alteration you would suggest would be what? I should make him always vertical.

1816. You said there would be no fear of the car self-dumping while in action, going round a curve? I

think it would not.

1817. In what way is that provided for? There are two links, and they are worked by a lever from the end, so that unless this comes off the car cannot cant. Then there are chains carried right down from the frame, so that the chain must also revolve round.

1818. It depends upon the lever being secured? If the lever is secured they cannot dump.
1819. Can the lever be safely secured? Yes.

1820. Did you see that it was? No. They have got merely a pall that you can kick in and out with

your feet.

1821. Did you see that the lever was capable of being made secure? It can be made secure.

1822. By the present means on the car? Unless you kick the pall out nothing can overturn the truck.

1823. Mr. Poole.] There is nothing to hold the pall in the ratchet? Nothing at all. The back frame The back frame would have to cant first before it could go.*

1824. Mr. Bird.] Did you notice any other defects beyond those you have stated? No.

1825. About the wheels—you said you preferred the chilled iron wheels to steel wheels?† I am now

giving my opinion of railway rolling stock. 1826. Do you consider the wear and tear on the tramways more severe for wheels than on the railways?

1827. You said you thought the workmanship of these cars was better than that you had seen in the Yes, they did not pay that attention to good work that we do here on the whole.

1828. Chairman.] In speaking of the life of a steel tire as compared with a chilled iron wheel on the railways, do the Committee understand that you gave your experience, or that you merely spoke from what you had read? It is my opinion only.

1829. But in speaking of the life of those wheels on the tramways you were giving the result of your practical experience? Yes, practical with regard to tramways.

Mr.

^{*} NOTE (on revision):—There is no question bearing on this.
† NOTE (on revision):—As regards safety I should have no hesitation in using chilled wheels.

Henry Gilbert Carson Woods, Esq., called in, sworn, and examined:-

1830. Chairman.] What is your occupation? I am an importer and contractor.

1831. Mr. Bird.] What do you say you are? I am a contractor with the Government for 200 dump-cars. Woods, Esq. I am also a general merchant and importer.

1832. What is this contract with the Government that you mentioned? To supply 200 dump-cars for 24 Sept., 1884. the Government.

1833. When was that entered into? About October last.
1834. That contract is in writing? It is.
1835. Were there any interviews between yourself and the representatives of the Government about that contract? I think I saw the Commissioner for Railways either once or twice, and I saw Mr. Wright twice prior to the contract.

1836. What took place at those interviews? I explained to them the advantages of the dump-cars; that

it was one of the finest freight-cars in America, irrespective of its dumping powers.

1837. What did you mean by its dumping powers? That it was a good freight-car, and one man could empty the load from it in one minute. I said it was equal to any ordinary car, if not better.

1838. Did you refer to its strength or build in any way? As a freight-carrying-car it is strong and light, weighing only 9 tons 17 cwt., and it carries 20 American tons of freight.

1839. Was the agreement you came to contained in the written contract? Yes.

1840. Nothing would be outside of that? Not that I heard of.

1841. In pursuance of that contract what did you do? I made arrangements to purchase materials in America.

1842. Did you go to America? I did. 1843. Did you make arrangements there? I did.

1844. Did you return to this country after that? I did.
1845. What did you do then? I organized a car-building establishment in Pyrmont, and started building the cars with the material I had imported.

1846. Where did you get the material? Partly from the Laconia Car Company, New Hampshire, and

partly from the Ontario Car Company, London, Ontario. 1847. Why did you employ those firms? Because they a Because they are noted in America as keeping the best stock-

the finest and the driest timber. They are generally noted for good ware.

1848. Are you not the possessor of the patent? I own the patent for the South Pacific.

1849. Were any arrangements with regard to the patent made with the Government? I was to hand it up to them.

1850. Is that contained in the contract? Yes, it is one of the conditions.

1851. I suppose that contract is not in your possession? Not here. 1852. Where is it? In town; I could get if you wish it.

1853. Is this car used much, or at all, in America? It is in common use over the American railroads. It is in regular use.

1854. Has it been approved of by any railway companies? It has, to my own knowledge, by several. 1855. And is it not used on their lines? It is in use on many roads.

1856. There was some arrangement about a sample car, was there not? No, I brought a sample car out

1857. Was that prior to the contract being entered into? Prior.
1858. Was that sample car built out here? Yes, built out here.
1859. Was any test applied to it by the Government? It was tested in the presence of the Minister for Works, and several other people.
1860. Who else were present? Mr. Read, Midelton, Mr. Bingham, and another.
1861. Were those all the persons present? I think the representatives of the Press were at that test,

but I am not sure

1862. Where did it take place? At Darling Harbour.

1863. When was this? Some time before I got the contract.

1864. What took place? I was late that day, for I went to the wrong place first, and before I got to Darling Harbour the test was over. I found that either wilfully or ignorantly they had put wood into a box-car, and the test was scarcely a success. The width of the car is some 9 feet odd, and the billets of wood went the full length of the car. When I saw it it was in the dumping position, and there were some few pieces of wood inside.

1865. How was it that it remained in the car? The ends had been caught by the gates of the car. The

1865. How was it that it remained in the car? The ends had been caught by the gates of the car. The top of the wood was held by the top of the gates; I immediately protested.

1866. Was that what was called the sample car? Yes.

1867. And the wood was prevented from coming out by the top bar across the gates? Yes.

1868. Mr. Wright was there? Yes, he was present. I protested that this car was not intended to dump wood. They knew that. It ought to have been gravel, and not wood.

1869. Was there any defect or breakage in the car at the time? Yes: there was the breakage of a link in

1869. Was there any defect or breakage in the car at the time? Yes; there was the breakage of a link in

1870. Did any conversation take place about that link? I spoke to one gentleman of the staff. He told me that that was nothing, and only happened because the chains had not been put equally on; that one had been shorter than the other.

one had been shorter than the other.

1871. Did any further trials take place? Yes; there were some further trials.

1872. Were you present? Yes. The next trial took place before the Press.

1873. Who was present? Mr. Midelton and Mr. Scott.

1874. Were they representing the Government? I am not quite sure.

1875. What took place? We dumped the car with gravel.

1876. Where was this? It was on the Botany Road.

1877. What were the conditions under which the dumping took place? It was a fair dump, but there was no fair chance for the car, because it was on level ground. About two-thirds of the load went out, and a few minutes work of the shovel would clear all the rest. They were satisfied and went away.

1878. Did some of the gravel remain in the car? Yes.

1878. Did some of the gravel remain in the car? Yes. 1879. In consequence of what? Being dumped on level ground.

1880. So that there was not room for the gravel to clear away? No. 1881. When was the next trial? I think the next trial was before Mr. Read, Mr. Scott, Mr. Midelton, H. G. C. Woods, Esq. and Mr. Heaton. 24 Sept., 1884.

and Mr. Heaton.

1882. Who is he? A gentleman in this city in business.

1883. Where did this trial take place? Down on a bank near Darling Harbour.

1884. What took place then? We had the dump satisfactorily done there. It was satisfactory to all, to Mr. Midelton, Mr. Scott, and Mr. Heaton.

1885. Were any of the gentlemen of the Press present? I do not remember that there were any there.

1886. Was it quite successful? Yes, it was.

1887. Under what conditions? It was on the edge of a bank, and it had a fair reasonable chance to throw the load out. The only point I saw was it was much harder to dump than I thought it ought to be—that is, to turn the lever. In America they said one man could turn it, but we had always to call two. I found the reason since. It was built wrongly.

1888. Did you observe the fault? No, but I have a witness here who did.

1889. What is the object of the car? The object is to save labour for any heavy or unbreakable freights.

You can turn a portion on either side. 1890. This special car is intended for what kind of freight? This special car is intended for all freights;

but the improvement is that the dumping apparatus gives it a great advantage over all other cars.

1891. But this dumping arrangement was unsatisfactory on level ground? Partly. I think the chief

reason was because it was badly built.

1892. You say it was satisfactory down a bank; unsatisfactory on level ground? It was satisfactory for the place where it was dumped. If a man wishes to dump 20 tons of gravel on level ground he must expect part of it to be left. If he wished to dump half of it on each side the dump-car would do it. You can dump a portion or the whole, and you can put it at any reasonable angle.

1893. Was it at the first or the second test that there were gentlemen of the Press present? I think it

was at the second, but it was twelve months ago, and I cannot be certain of the order.

1894. Did anything appear in the papers next morning about the test? Yes, a fair and reasonable comment upon it.

1895. Could you remember the date? No, but I could bring up the report that was cut out of the paper

next morning in my office.
1896. Have you read the report in the papers? Yes.

1897. Is it a fair and reasonable report of what took place? Yes, it is fair and reasonable.
1898. What is the cost of these patent cars? £190 to the Government. That is my contract? I have. That is my contract price.

1900. In what way? I have built the cars, and tendered them to the Government.

1900. In what way? I have built the cars, and tendered them to the Government.

1901. I want to ask you a little more about this patent;—how did you acquire it? In the beginning of 1882 I was in Montreal, and there was a meeting of carbuilders. A great many of those gentlemen were my friends. This car was much discussed and approved of, and several of them urged me to go and see it. Mr. Muir was the manager of the Ontario Car Company. I saw him, and he endorsed everything I had heard previously, and urged me to go to Boston and see the owners of the patent—the United States Car Company, of Boston. He said it was a great success, and would revolutionize the carrying of heavy and unbreakable freight. I went down, and on the way called in at Montreal. Mr. Scott, chief of the New Brunswick Railway Company, and Mr. Davis, chief of the Quebec Government Railways, and several other gentlemen whom I saw, all said it was a splendid car, and must come into great use. Then I went to Boston, and heard the same from friends. I went to Boston, and heard the same from friends.

1902. Did you see the car there? No, I had seen it at Ontario.
1903. Beyond that you had no practical knowledge of it? No, I relied upon those engineering people.
1904. Did you see any proofs of the working and making of the car? I did not see that; it was explained to me.

1905. You had the specification of the patent? Yes.

1905. You had the specification of the patent: Ies.

1906. What is the cost in America of cars such as are the subject of this inquiry? About 650 dollars.

This would cost more as it is an improved car. How much more I cannot say. That is the cost of the This would cost more, as it is an improved car. How much more I cannot say. How much more for the improvements I do not know.

1907. Has this car been recognized as being good at any Exhibition? At the Chicago Exhibition this car

received a silver medal.

1908. Were any gold medals given? I do not know.

1909. I wish to ask you about certain alleged defects; for instance, it has been said that there is a defect in the place where the man stood to work the dumping-car; that it should have been fixed and not on the car itself? I cannot see where that could be; it is impossible not to be on the car when the car is running.

running.
1910. Something has been said about the king-bolt? I know it is an improvement put upon the new cars—a cast-steel king-bolt; I put it in under the advice of the engineers in the New England Car Company, and the United States Car Company, both.
1911. Is that in the original car? It is not; it has been added since the contract.
1912. Have any other improvements been added; was any request made to you that further improvements should be placed on the car? Mr. Scott, the Locomotive Engineer, told me he would prefer that the side bearings should be made more automatic; and I understood that if there were any more improvements I should "collar" them.
1913. Did you "collar" any improvements? Yes, I "collared" improvements.
1914. Can you tell me what they were? I cannot remember the technical words; I would rather leave

1914. Can you tell me what they were? I cannot remember the technical words; I would rather leave it to my foreman búilder.

1915. Does he understand the working of it? Thoroughly.

1916. Do you? I understand it generally.

1917. In drawing the car I understand there is a question of a continuous draw-bar; it is considered a defect that it has not a continuous draw-bar; it is said to weaken the bar; can you explain that? there is not a continuous draw-bar, but that it is a defect I do not know.

Strong chains, and the usual coupling; it is 1918. If there is not, what appliances are there? strengthened by truss-rods.

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1919. As to the buffers;—was any request made to you to have the buffers altered? After the contract was given I got intimation that they wanted the buffers made in the English style, and I have done so.

1920. About the sample car. The contract was to deliver cars according to that sample? The contract 24 Sept., 1884. was to deliver equal to the sample.

1921. Have you built the cars according to the sample? Better in many respects. They are stronger, and improved in other ways. There are many improvements which I could not describe here.

1922. Can your foreman describe them? He can.

1923. Do you know anything about the wheels, as to comparison between chilled cast-iron wheels and steel-tired wheels? I have a paper here which contrasts chilled iron with cast-steel wheels. (Hands in paper. See Appendix E 1.) That is an extract from the National Car Builder of America. It is the best authority in America upon wheels.

1924. How did you get that extract? I cut it out last night.
1925. What is the date? It is from the July number.
1926. Have you got that number? I have got it.
1927. Have you had any test yourself, so that you can speak of your own knowledge as to any part or parts of this car? Not of my own knowledge. All the tests were made under the supervision of my inspectors in America.

1928. Have any tests been made in Sydney? I do not know of any yet.
1929. Do you recollect any tests in Darling Harbour? There was the test I have already spoken of.
1930. I mean of any parts of it as to the strength and durability of any portion of the iron or wood work? I cannot remember any.

1931. If any have been made would any of your witnesses be able to give information? I think they would. They ought to.

1932. Have any tests been made of the parts of the new cars? I am informed that tests of parts of the new cars have been made by my foreman.

1933. The £190 you have mentioned;—is that merely the price of the material and the building of the car, or does it include anything else? It includes the patent right for the Government use only.

1934. Of your own knowledge you do not know beyond what you have been informed of the good qualities or otherwise of the material of which the sample car and the cars included in the contract are

made? Not of my own knowledge.

1935. What is the character and reputation of the firms from whom you have obtained the material? A

very high character.

1936. Was anything said at the first test as to the breakage of the chain being caused by the quality of the chain, or was it caused by the strain of the car? The unequal strain.

1937. Have you received any testimonials respecting this car or similar cars from any firm or persons in America? I have.

1938. And were such testimonials addressed to you yourself? They were enclosed to me from the United States Car Company, from whom I got the patent, including the original letter from the Company, showing that they had sold the patent in Canada and formed it into a Company.

1939. Were those documents shown to any representative of the Government in this country? They were shown to the Minister for Works. (Witness here handed in the testimonials. See Appendix E 2.) 1940. At the time all these tests were made were any complaints made of the car that was tested? None at the time. Mr. Midelton said it was a good car. Mr. Scott was rather reserved, but still pointed out no defects.

1941. Mr. Wright.] Will you tell the Committee how many trials of the dump-car took place at which you and officers of the Railway Department were present? Three.

1942. Were Mr. Scott and Mr. Midelton present on all three occasions? I believe they were.

1943. Did either of those gentlemen take exception, in your presence, to the general design of the car or its construction? None whatever.

its construction? None whatever.

1944. Then so far as you believe the impression on the minds of those gentlemen was favourable? It was favourable. More so with Mr. Midelton than with Mr. Scott.

1945. Did anything they said lead to that impression? Yes, what Mr. Midelton said.

1945. Did anything they said lead to that impression? Yes, what Mr. Midelton said.

1946. So far as you are personally concerned neither of them ever said anything in condemnation of this car, either as to the general design, workmanship, or material? Never.

1947. And your belief was that they were favourably impressed with the car? Yes.

1948. Have you had any personal practical experience of American timbers? Not practical.

1949. Of what wood is the specimen car? White oak and hard pine.

1950. What are the new cars built of? The same woods—hard pine and white oak or ash.

1951. Had you any conversation with other gentlemen besides the gentlemen of the Railway Department with regard to this dump-car? None. I thought it sufficient when they were satisfied. 1952. The only people whose opinion you sought were the practical officers of the Department? That was all.

1953. Did you hear any of those gentlemen receive information which would lead you to understand that the car was a failure, or built of bad material? Never. After the contract was given Mr. Scott said he

would prefer to have a more automatic side bearing.

1954. And you understood that the cars would have to be altered to suit our rolling stock?

1955. And all the alterations pointed out by the Government officers you have had carried out in the cars you are now building? Yes, except as to the continuous draw-bar, which Mr. Scott said he thought could not be put in. When I went to America they said it was impossible to do so. 1956. Was your attention called to the fact that a part of the car was too weak? I do not remember

my attention being called to it.

1957. Chairman.] Have you been supplied with a copy of the evidence taken before this Committee? No.
1958. Were you aware of what evidence had been taken before this Committee? I heard people talk

1959. On what date did you first direct the attention of the Government to these dump-cars? It is in

writing here.
1960. Was that the first time? Yes, as far as I remember.
1961. I find that on the 2nd April Mr. J. C. Dibbs wrote to the Government in regard to the dump-car;—was he then acting as your agent? He was.

1962.

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MINUTES OF EVIDENCE TAKEN BEFORE THE SELECT COMMITTEE H. G. C. 1962. Has he be Woods, Esq. he acted for me. 1962. Has he been acting for you in these matters? Yes, in these matters. In my absence in America 1963. Did he act for you in regard to any other imported rolling stock? Yes, some wheels, I believe. 1964. Were you to tender for any sleeping-cars? Yes. 24 Sept., 1884. 1964. Were you to tender for any sleeping-cars? 1965. Who was acting for you in the Colony at that time? I think it was Mr. G. Dibbs. 1966. Who? The present Treasurer. 1967. How long is it since he ceased to act for you? Since he went into Parliament. 1968. You say that Mr. J. C. Dibbs is your agent? He is not now. 1969. How long since he ceased to act? Since I returned to this country. 1970. Can you remember the date of the last test with firewood? No, I cannot remember the date. 1971. Are you quite sure that Mr. Scott and Mr. Midelton were present at that test? I am not quite sure; I think they were. I believe they were there. It is so long ago I cannot exactly remember.

1972. I understand you to say that Mr. Midelton favoured these cars, while Mr. Scott showed a reserve? 1973. Did you speak to him on the subject? We must have been talking about it, and I think Mr. Scott was more reserved than Mr. Midelton. As the car came under Mr. Midelton's notice first, in Mr. Scott's absence, I thought Mr. Midelton ought to know more about it. 1974. When you contracted to supply 200 dump-cars, was it not understood that they were to be manufactured in this Colony? No. 1975. Were you never asked to manufacture them in the Colony? No. I would not have taken the 1976. You are quite certain that neither the Minister for Works nor the Commissioner for Railways said the cars were to be made in the Colony? They said they were to be built here. I know that "built" means put together. 1977. Were you requested to sign any bond? Yes.*
1978. Were you made aware of the particulars of that bond? Never. 1978. Were you made aware of the particulars of that bond? Never.

1979. Have you read the papers laid on the table of the House? I have read the papers.

1980. Were you asked to sign any bond or document containing the conditions such as are in these printed papers? I never heard those conditions before.

1981. Did you inform the Commissioner for Railways or any member of the Government that you did not intend to manufacture these cars in the Colony? I never informed them anything.

1982. Did you lead them to believe that you intended to import these cars? I told them I intended to import the material. I think I told them that. I cannot say I told the Minister for Works.

1983. Had you many interviews with the heads of Departments with regard to these dump-cars? Not 1983. Had you many interviews with the heads of Departments with regard to these dump-cars? Not 1984. And are you quite certain you were never requested to manufacture these cars in the Colony; that there was no stipulation that they should be passed by the Locomotive Engineer? I am perfectly certain; this is the first time I have heard of it; I only understood I was to build them equal to the sample car.

1985. Do you remember receiving letter No. 26 in the printed papers? I received that.

1986. Did you accept those terms and conditions? I did. 1987. Have you ever signed a bond in accordance with that letter? I have not; I was called upon about a week ago to sign a bond, but I was never requested to do so before.†

1988. I think you stated that it was never intended that these cars should be used for timber and fire-Never, with the gates on. 1989. Would you have to alter the truck? No, only take the gates off; I wish to say concerning that wood that I am not an expert in wood; I have given you what I understand the cars are.

1990. The evidence you have given as to the quality of the wood is absolutely worth nothing then? That is it exactly; I depended upon professional people for that.

1991. I think you said you had the authority over the patent for this Colony? I have.

1992. Have the particulars of the bond been furnished to you? Never yet.

1993. When did the first shipment of these cars arrive? The first shipment of the material for these cars arrived while I was in Brisbane. 1994. In letter No. 29 you inform the Commissioner that you intended to leave for America to make the necessary arrangements for the completion of your contract for 200 dump-cars? Yes.

1995. Are you quite satisfied that you informed some persons in authority that you intended to import the materials from America? I feel satisfied that that was generally known, but as I was hurried at the time I will not say that I am quite sure. 1996. Were you requested to make the necessary alterations? I was. 1997. Have you complied with that request? I have, but I consider they are extra.

1998. Are the Committee to understand that your tender was accepted to supply 200 cars, similar in

every respect to the sample car, which was then in the possession of the Government? Equal to it, not similar, as there were changes proposed. Mr. Scott told me he would insist upon the buffers being altered. 1999. Did not the Commissioner point out to you that it was necessary to have side buffers, continuous draw-gear, and other improvements? In talking he said it would be necessary, but I hold to the written

2000. Do you consider that the additions you have made to these cars are extras? From my present view I think they are.

2001. Is it your intention to charge for the extras? I have not yet made up my mind.
2002. Then do the Committee understand that it is likely you will charge the Department for side buffers, draw-gear, &c.? By the action of this Committee I have been nearly ruined as a business man, and I do not feel inclined to give way any more. I look to the contract given me, and if I do anything further I think I have a perfect right to charge for it.

2003. Mr. Chapman.] Have you signed a contract? I signed no contract. I rely upon the letter I received from the Government.

2004. Have you got that letter? I have a copy of it here.
2005. Mr. Bird.] This is a press copy of the letter? It is. It was taken in my presence. (Letter handed to the Chairman and read.)

^{*} Note (on revision):—I find that I have not been called upon to sign any bond.

† Note (on revision):—I find I was not called upon to sign a bond.

ON THE PURCHASE OF RAILWAY ROLLING STOCK. 2006. Chairman.] I understand you to say that you were never asked to sign a contract or enter into a H. G. C. Woods, Esq. Never beyond what is in that letter. 2007. But this distinctly states that you will be required to enter into a bond for the due fulfilment of the 24Sept., 1884 contract? Yes, it does. 2008. Did you not say a short time back that you were never called upon to enter into a contract? I meant since I returned; since I returned I never was asked to enter into a bond. My letter said I was ready to sign, and they never called upon me; I waited for a notification.

2009. But you have had notice in a letter from the Government? Yes.*

2010. Is that in these papers? That letter was received only last week. 2011. Then you have signed no bond yet? No. 2012. Have you received any money? None. 2012. Have you received any money? None.
2013. Have you been paid for the sample car? I have.
2014. When? Some time ago; a long time before I got the contract.
2015. You spoke of being present at a trial of dumping this car? Yes
2016. Who were present when it was dumped? I was.
2017. On one occasion the metavial was forward? 2016. Who were present when it was dumped? I was. 2017. On one occasion the material was firewood? Yes. 2018. When you went there you say it had been dumped, and there was a little in the car which would not come out? I said the dump was just over, but the dumping part was just as it had been dumped. 2019. Were you present at the dumping when they had to get the screwjack to replace the car? I never heard of it until I saw it in evidence. 2020. Where did you see the evidence? I heard of it. 2021. If there was any screwjack used in replacing the car in its position into the dump-socket you did not see it? No. 2022. You were present at the dumping of ashes, of river gravel, and the dumping of wood? Yes, in part as regards the wood. 2023. You say that Mr. Midelton approved of the test? He did. 2023. You say that Mr. Midelton approved of the test? He did.

2024. He told you positively that he approved of the car? He did, all through.

2025. And you say Mr. Scott was a little more cautious? Yes.

2026. Mr. Wright. I find among the printed papers, No. 20, a copy of a letter from the Commissioner for Railways to you, dated the 24th August, 1883. What interpretation do you place upon that; that you should import the cars, or make them here? Make them here.

2027. To that you replied on the 27th of August, No. 24 in the printed papers. I ask you whether, at the time you wrote that particular letter, you were not under the impression that you would have to make these cars in the Colony absolutely: that is, that they were to be of Colonial material? No sir make these cars in the Colony absolutely; that is, that they were to be of Colonial material? No, sir. 2028. In the previous letter you say you will have to make them in the Colony? I understood that they were to be built in the Colony. 2029. Did you at any time in conversation with me mention the fact that you had bought land on the Parramatta River with a view to putting up a factory? Not to my knowledge.

2030. Are you aware that any person in your employ told me so? I am not aware.

2031. Did you mention this fact? I cannot remember. 2032. Was it ever contemplated by you to erect an establishment after the style of Hudson Brothers? It was contemplated if we got such an order. The establishment was here. 2033. Your intention was, if you got the order, to establish a car manufactory, and to manufacture railway rolling stock in the Colony? Yes. 2034. You have no knowledge of having told it to me? I have no knowledge of it, nor any remembrance. 2035. Your interpretation of the word "made" would be manufactured? It would. 2036. Mr. Chapman.] Did you at any time try to purchase a piece of land on the Parramatta River for the purpose of erecting workshops? No, never.
2037. Chairman.] In reply to a question you said you had not seen a copy of the evidence. Subsequently to that you stated you judged so by the evidence? That was a mistake of mine. It was commonly reported that they had used a screw-jack.

2038. Are you sure you did not see the evidence on Saturday? No, I did not.

2039. Were you a passenger by the train that arrived in Sydney about half-past 12 on Sunday last? I was not out of town on Saturday or Sunday. I came in from Brisbane on the Sunday before last.

THURSDAY, 25 SEPTEMBER, 1884.

Present:

Mr. CHAPMAN, MR. SUTHERLAND, MR. SUTTOR. Mr. WRIGHT,

MR. TEECE.

SYDNEY SMITH, Esq., IN THE CHAIR.

Mr. Bird appeared as Counsel for Mr. Carson Woods.

Henry Gilbert Carson Woods, Esq, called in and further examined:—2040. Chairman.] Have you delivered any cars to the Government?; No. 2041. Are any of the cars on the Government lines? Yes. 2042. How many? I cannot say positively, but I think over twenty. H. G. C. 2043. From whom did you get permission to have them placed on the Government lines? I got per-25 Sept., 1884. mission to put fifty on the line from the Commissioner. 2044. On what date? I do not know the date; I can send for the letter.
2045. Under what conditions did you obtain permission to place these trucks on the line? As far as I can remember they are to be there at my risk, and I am to pay 1s. 6d. a week for each car.

^{*} Note (on revision):—I find I have had no notice.

† Note (on revision):—I find that this letter does not ask me to sign any bond.

‡ Note (on revision):—On inquiry I find four cars were delivered to the Government, during my absence from the

MINUTES OF EVIDENCE TAKEN BEFORE THE SELECT COMMITTEE 2046. Is it true that three or four of these cars were damaged in transit from Darling Harbour to Woods, Esq. Eveleigh? I have no personal knowledge of it. 2047. Have you heard of it? I have. 25 Sept., 1884. 2048. From whom did you hear it? I think I heard it from Mr. Batchelder. 2049. Mr. Bird.] You were asked yesterday as to whether you were required to sign a bond;—have you been required to sign a bond? Since I arrived-2050. I only want to know whether you have been? I have. 2051. When? During the past week. 2052. Have you ever before that time been required to sign any bond? In a letter I received from the Government they stated they would require a bond. 2053. A letter from whom? From the Commissioner for Railways, I think. 2054. Is that the letter you refer to, No. 26 of the printed papers, relating to dump-cars? It is. 2055. Has there been any other mention of the bond referred to in that letter? Yes, in my reply. 2056. No. 27 of the printed papers? Yes.
2057. Will you refer to No. 31—the Commissioner for Railways to the Crown Solicitor, dated 17th November, 1883? This is the first time I have read this. 2058. Have you heard before of the conditions named in that document? I heard of them yesterday. 2059. For the first time? For the first time. 2060. Have you the letter that was sent to you last week? I have it at my office.

2061. By whom was that sent to you? I believe it is signed by the Commissioner for Railways.

2062. You have said that there was a conversation between Mr. Midelton and one of the men in your employ about the cars. What was the name of that man? There was a test made, and you said Mr. Midelton had a conversation respecting the car with one of your men. Who was that? Mr. Batchelder, and I think also I am not sure Mr. Campbell and I think also, I am not sure, Mr. Campbell. 2063. Who is Mr. Campbell? He is my clerk. Mr. George Batchelder called in and examined:-2064. Mr. Bird.] What are you? I am a car-builder. 2065. In whose employment? Carson Woods & Co. Mr. G. Batchelder. 2066. In what capacity? Manager of the building of the cars; I have charge of the works, looking after 25Sept., 1884, the car building. 2067. What is your experience of these dump-cars? With this identical car, with these new attachments here, one week, perhaps nine days. 2068. What do you mean by one week with these new attachments? The firm that furnished the material to build these cars built one themselves, finished it throughout, and they got me to take it on to the different roads in America to show it to the officials, and to work it, and sell cars for them. 2069. Is that what is called the sample car? No. 2070. How long have you been in the employment of Mr. Carson Woods? I landed here on the 6th of June last, I think; I came in the "City of Sydney"; I think that was the date; I left Boston the last day of April. 2071. I want you to describe to me first of all this car or truck, and then the working of it? Do you mean the cars I am building or the sample car? 2072. Have you examined the sample car? I have. 2072. Have you examined the sample car? I have.

2073. I wish you to describe that as shortly as you can. You may refer to the sketch of the car. In the first place what is the woodwork of the car made of? You refer to the sample car now?

2074. Yes? It is made of pitch pine—some may call it Oregon pine—and white oak.

2075. What part of pitch pine, and what part of white oak? The stringers and floors of pitch pine; the boards inside the gates and the boards on the ends of the car are pitch pine; the end sills, cross ties, posts, and frame of the gate are white oak.

2076. What are the sills of the trucks made of? White oak.

2077. What do you mean when you speak of the trucks? I mean the four wheels; they call them bogies here: we call them trucks here; we call them trucks.

2078. I now wish to call your attention to the posts you have mentioned—to the bolts in the posts—
describe the working of that—what that is? Do I understand that you want me to tell the difference between the two cars—the ones we are now building and this car?

2079. I will put the question in this way: What addition has been made to the new cars, as compared with the sample car, in the shape of posts. What improvements? You want me to explain to the Committee if there has been any improvement put on these cars I am now building above what is on the old There are four boxes on the posts where the bolts go through, on the new car 2080. Yes, the posts? that are not on the old one. 2081. What is the advantage? The other bolts go through wood, and these work on iron.

2082. Then I wish you to refer to the latch-levers;—what are they? What hold the sides of the gates in 2082. Then I wish you to refer to the latch-levers;—what are they? when the loads are on. 2083. Describe the latch-levers;—what alteration is there in the latch-levers on the cars now building, as compared with the sample car? They are about as heavy again, as strong again, on the new car, as what

they are on the old one; very near three times—over twice.

2084. How is the latch-lever kept in place? By weights.
2085. How is it attached to the car? By bolts; they are attached the same as the old ones—only they

are made of heavier material—stronger. 2086. What do you call them? Latch-levers.

2087. What is the construction of these latch-levers underneath? They are latched with a bar underneath with a weight of iron on them.

2088. Will you describe the working? When the car dumps the latch-lever strikes on the brace of the bogie, and that opens it and lets the gates open; there is on each end of every one a chunk of heavy iron so as not to throw the levers right back again but so that it will open and shut itself.

2089. When the car is horizontal what is the position of the latch-lever? The latch-lever lies horizontal to hold the latch against the door.

2090. When the car is loaded how does the latch-lever act then? Just the same as I have just described,

Batchelder.

25 Sept., 1884;

Mr: G:

against the door. The more pressure you get against the door the tighter the latch-lever stays.

2091. What do you mean by more pressure? When the car is loaded there is more pressure.

2092. Pressure against what? Against the inside of the gate. The more pressure there is against the gate the more power it takes to unhitch it. The more power there is forced against these gates it takes so much more friction to hoist this latch so that the door will open. 2093. Now I wish you to refer to the trucks. You have already said the truck sill is made of white oak?

2094. What is the difference between the trucks you are now building and the sample truck in respect of the sills? In the trucks we are now building the sills are in two pieces; the top sill in the sample car is in three pieces

2095. The present sill is not in three pieces? No, it is in one solid piece; the top sill in the sample car is in three pieces; in the car we are now building it is in one piece.
2096. What is the advantage of that? We think it is stronger and better to have it in one piece than in three pieces.

2097. Respecting the brake, I want you to describe the brake;—how is that applied? The same as any ordinary brake.

2098. By means of what? Lever power and a chain. The brake power is applied in the same way in both cars, except that the new car has a little more leverage.

2099. Is there any additional strength or safety in the brake on the car you are now building to what there was on the sample car? The sample car has one set of links and hooks that hold the brake, called safety hooks and links; the car we are now building has what we call an extra safety link and hook, in case of one being broken, to go under it to keep it from falling; it makes it safer; if the one that operates while the pressure comes on should break, there is another put on purposely to catch it up, so that it could not fall.

2100. How does the extra link act? The extra link does not act at all until the other breaks; if the

other should break then it catches on it and holds it up; it acts as a safety link and guard.
2101. Can you compare it to anything else in any other part of the truck? There is a spring in the new car that goes with these safety links and chains, that throws the brake block off when they are not using it; that is not on the sample car.

2102. Is there any other difference? The truss-rod on the new car is one-eighth of an inch bigger than

it is on the sample car; that holds up the strength on the bogie; it goes from one side to the other.

2103. Where is this truss-rod—from where does it run? It runs from within about 6 inches of the top sill, down under the bottom of it, and up to another, and goes through a plate of iron about 6 inches on the end of the bolt, that is a support to the trucks to help carry the load.

2104. What is the truck-brace? The brace is on the outside of the truck; it carries the box.

2105. Is there any addition to the truck-brace different in the new car? Yes. 2106. What is that? The end of the inner brace turns up; the iron is a 2106. What is that? The end of the inner brace turns up; the iron is about 3 inches by an inch, turned up an inch so that the top brace stands against it to make a shoulder; it makes it capable of carrying 3,000 lbs. more before it would strain the bolt.

2107. About the brake—where the chain winds—has there been any difference made there? Yes, we have made an improvement on that; instead of a single brace we have a double one.
2108. To hold what? To hold the lower end of the brake rod.

2109. Now, as regards the rocking apparatus or gear—where is the rocking gear placed? You mean the

dump:gear; the dump-gear is placed in the centre of the car.
2110. Not fore-and-aft? I mean the whole length of the car; the dump-gear runs the whole length of the car with the exception of a very few feet; then there are posts that are hung on hinges on the bottom transom; that sets under the transom and keeps the car from dumping.

2111. You are describing what now? The posts under the sample car. This statement I am making is on the sample car, not the other car at all. This post is pulled out by the levers.

2112. By what levers? The levers at the machine end of the car. The posts are pulled out in order to

dump the car. The car cannot dump as long as these posts are under there.

2113. Has there been an alteration in the cars you are now building in that respect? Yes.
2114. What is the alteration? We have links to take the place of these posts.

2115. Now turn your attention to the alteration in the cars you are now building in the dumping gear. You say there there are links in place of the posts;—where are these links—what are the linksaffixed to? The links are an improvement on the sample car; they go up with a bolt through one of the middle sills.

2116. What are they attached to? I have just said they are attached to the middle sill.

2117. How are they worked?

They are worked by a lever at the machine end of the car—by two levers at the machine end of the car.

2118. What is the action of the levers? By pulling the lever back you can take the link off, so as to let the car dump

2119. Take the link off? Take the link off the post that is put on to the side of the bogic truck.
2120. How are the levers kept in place when not pulled back? We have lock links on these levers, that when the lever is thrown into its place and the link fixed properly, and the car ready for running, this link is thrown over the lever, which makes it safe, that the car cannot dump. The sample car has no link or anything of the kind on it but a spring at the bottom. We considered the link best; that was why we put it on; it makes it perfectly safe. We also have a catch to latch it down to the bottom of the gear-rod.
2121. What gear-rod? The gear-rod that dumps the car.
2122. How does that work? The gear-rod works the dumping apparatus; it turns round.

2123. How? By a handle and wheel.

2124. When you turn the handle and wheel what does that do? It will dump the car.
2125. In what way;—how? It tips it up sideways.
2126. What is it attached to? It is attached to the gear that dumps the car.
2127. What is that gear? It is the gear—that is all I can call it.
2128. Is it made of wood or iron? It is made of iron.
2129. What shape is the iron? Four or five shapes. There is a long bar about 23 or 24 feet long; it is about a 2-inch bar and on the machine and it has the gear attached to that and by working the wheels over about a 2-inch bar, and on the machine end it has the gear attached to that, and by working the wheels over-

Mr. G. Batchelder. head you dump the car. There is gear at each end that chains run in, and by turning the machine wheel

25 Sept., 1884. 2130. By means of the gear, by means of a rod, and by means of a chain? Yes; these latch links have, to be hoisted off and the levers pulled back before the car can be dumped.

2131. To lift these latch links what do you do? It will depend on how the car is loaded; if the car is loaded half a ton sideways, you have to take hold of the wheels and roll up the car on to a level, and then you can take out your links to let your car dump; you cannot take them out if your car hangs either one

way or the other; you cannot dump your car.
2132. What is the thickness of these lever links? About three-eighths of an inch. That has not anything

to do with what we are talking about now.
2133. What is the thickness of the chain? The chain that dumps the car is half an inch.

2134. What does the dumping gear rest on-how is it kept in its place? It rests on the sill; it rests on the transom.

2135. How is the car, when being dumped, kept on the truck? There is a king-bolt in each end; there

is not any king-bolt in the sample car.

2136. What is the object of having a king-bolt? To keep the body from jumping off the truck in case When the car runs off the track in case of an accident, those king-bolts keep it up; they of an accident. are inch and three quarters cast steel; that makes it an impossibility for the car to leave the bogie unless there is a general smash.

2137. Is there, in your opinion, any danger of the car, when loaded and travelling, dumping of its own

2137. Is there, in your opinion, any danger of the car, when loaded and travelling, dumping of its own accord? It is impossible for it to dump of its own accord; unless you take truck and all with it you cannot dump the body; it cannot be dumped unless you take these links off the levers and pull the levers back. They are 14 inches long and 6 inches wide, made of inch iron, and weigh about 35 lbs.; the four of them have got to be hoisted or the car cannot be dumped, neither by itself nor by no man.

2138. Is there any danger when the car is travelling, loaded or unloaded, of the latch levers which keep the sides closed falling, so as to let the sides of the car open? No; the more load you have in the car the solider they are; of course when the car is empty there is nothing but themselves to keep them on the car but if the car is loaded there is a pressure against them

car, but if the car is loaded there is a pressure against them.

2139. In addition to the transoms and sills at the bottom of the car, is there anything else to strengthen the body of the car? There are four truss rods that go from one end of the car to the other, with bolts and nuts on the outside of the sill and large washers; they run the whole length of the car and help to carry the load; they also keep the end sill from pulling off.

2140. What do you mean by the end sill? The end sill is the sill that the draw chains, links, and buffers

2141. Do you know the name "cross-heads." Have you ever heard the word "cross-head"? Only on

an engine.
2142. Do you know the word "head-stock"? That is the end sill I have just described; it goes on to the end of the car and to it the drawhook and chains and buffers are attached, and these four truss rods

go right through with nuts and washers at each end.
2143. On each head-stock? Yes, that prevents the head-stock from drawing off.
2144. With reference to the axles, what is the diameter of the axles? They are the standard axles of America; the standard size is $3\frac{3}{4}$ inches; they vary a little; it is according to what heat they are taken out at when they are hammered; if they are very hot when they are taken out they will be a little slack, that is, they will not quite come up to the standard of $3\frac{3}{4}$ inches; sometimes they run over it a little, but as a general thing they are a little under 33 inches.

2145. How are the wheels affixed to the axles? The axles are turned and the wheels bored out, and then

they are put on with hydraulic pressure, not less than 40,000 lbs. to the wheel. 2146. Is that done with heat? No.

2140. Is that the minimum pressure? They do not calculate to let the wheel stay on if it does not take a pressure of 40,000 lbs. to put it there. Sometimes they will let it run large, and if it does not work the machine up to 40,000 lbs. they put on another. It may vary a little; sometimes it takes a great deal

more to get the wheel on.

2148. What are the wheels made of? Cast-iron—what is called a chilled wheel.

2149. Is there any stamp of any sort on them? The maker's name; the axles are all stamped with the maker's name.

2150. What is the depth of the chill on the wheel? It will vary a little; it is generally about \$\frac{3}{6}\$ of an

inch—sometimes a little more.

2151. Is that on each wheel? That is the general run of a first-class wheel.

2152. Have you worked the screws on these cars when dumping the load; have you dumped the load from cars of this pattern? I have; I have dumped 30 tons of gravel out of it, and I have dumped 20 tons of coal, and I have dumped 20 tons of stone and 20 tons of iron.

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\text{2153. From cars of this pattern? One of the cars that the firm made out of this same material; and I took it over the Boston Road, over the Montreal Road, over the Concord Road, over the Portsmouth Road, and over the Boston and Lowell Road. I was sent out—employed by the firm to take that car and work it

and over the Boston and Lowell Road. I was sent out-employed by the firm to take that car and work it

and over the Boston and Lowell Road. I was sent out—employed by the firm to take that car and work it on the road, to see if I could get orders for the car.

2154. What is your position when you are dumping the car? You can put yourself in whatever position you like. You stand on the front part of the car to dump it.

2155. Do you move with the car when dumping it? The car jumps; you slip up your knee a little.

2156. Has any accident happened to you when dumping the car? No.

2157. Has there been any approach to an accident? No; there is no more danger of an accident in the car than on the ground; you are 3 feet higher, that is all. You can dump the car at any speed you wish. You can turn it round slow or let it go quick. The man that does it is perfectly safe. A child ten years old could dump the car with perfect safety. They could not dump the sample-car when it came here because it was not put together right; consequently they could not dump it without jacks; but I went over it to-day, and put it in shape, so that a child of ten years old could dump it now.

2158. Chairman. I find a letter in the Evening News of Saturday, 20th September, signed "George Batchelder";—are you the person who wrote that letter? I am.

2159. How long is it since the dump-cars arrived—the first shipment? The material came for these cars about six or seven weeks ago.

about six or seven weeks ago.

2160. In what ships? Part of the material came in the "Earl Granville," and the balance in a ship Batchelder. called

2191.

2161. What wharf were they landed on? The ships went to Mr. Dibbs' wharf, I think it was.
2162. How many cars have been removed from that wharf? We did not put any of the material on the 25 Sept., 1884. wharf; I had lighters ready and put it all in the lighters. Once in a while we would send out a piece, but I lightered it all.

2163. Did you arrive with the cars? No, I came round by 'Frisco, about a month ahead.
2164. How long have you been in the Colony? I think I landed here on the 6th of June—somewhere

2165. Have you been over our lines? I have; I went up to see the Zig-Zag; and I have been out on the branches 20 miles, perhaps more.

2166. Have you had any practical experience of railway rolling stock in this Colony? No, I just merely rode over the road; I have examined the stock here—a good many of the cars or trucks as you call them. 2167. Are you aware what prices were to be paid for these cars? I understood they were to be £200, with the buffers and other attachments.

2168. You understood that £200 each was to be paid for the cars with buffers? Yes; I understood there

was a price for the cars and there was a price for things added afterwards, £10.

2169. From whom did you understand that £200 was to be paid? 1 think I must have got it from the office.

2170. What office? Mr. Carson Woods' office.

2171. Are you aware that the first contract was for 200 cars at £190 each? I cannot say how I got it; I heard it a number of times. I understood that the contract was for £190 each car, and that there was buffers or something to be added which would cost £10. Perhaps I might have got it the day I showed the car to Mr. Stanley, an engineer from Queensland. He asked the price and I rather think Mr. Midelton quoted the price to him £190, and buffers and chains connected with them to be £10 extra. 2172. You stated, in reply to another question, that you had it from Mr. Woods' office? I think I heard

it from Mr. Woods' office when the matter was being talked over.

2173. Will you swear that you heard Mr. Midelton say the price of the car was to be £190? No, I will not, but it is my impression he did say so. Mr. Midelton was a stranger to me, but I think Mr. Midelton was one of the men showing Mr. Stanley the car; Mr. Stanley asked the price, and some one of the gentlemen present said it was £190, and the buffers were in addition £10. I think Mr. Scott was one of the gentlemen. I did not know any of the gentlemen present at the time by name, except Mr. Stanley.

2174. Do you know anything with regard to the contract? No.
2175. Have you had tests made with the new car since you arrived? Nothing more than that I took it back and forward from the works; it works all right; I put a lot of men in it and worked it, but I have not loaded it.

2176. Mr. Suttor.] Did you dump the men? Yes. I showed the old car to Mr. Stanley and loaded it

partly with sleepers; I dumped that twice, I think.
2177. Mr. Chapman.] You were not present at any of the dumping trials with the sample car? Not when it was dumped with jack-screws. I know when I first came here the gentlemen on the railroad told me they had to dump it with a jack screw.

2178. I suppose you understood them to mean these dumping trials before the 200 cars were ordered? Yes; they said they put ashes and different things in it, and could not get it over without a jack-screw.

2179. They did not dump it properly till you arrived? No, the dumping machinery was not in right; it would dump, but not in proper shape; it would not work right. I can dump the car now immediately.

2180. All these failures in the dumping took place before the 200 cars were ordered? They said they were satisfied with it even with the jack-screw. I was told by several gentlemen they had used it. told them it was because the car was not put together right. Somebody put it up that did not understand the business.

2181. You spoke of king-bolts—did you—used in America? No, not till we put them in here. It is an improvement. There is no dump-car in America that I know of that has a king-bolt to it. Every man in America building cars is trying to beat his neighbour, and to get an improvement on every class of car. 2182. You spoke of several improvements you have made in the cars you are now putting together that do not exist in the specimen car;—who ordered those improvements? I do not know anything about the ordering of the cars. Mr. Scott told me, if I understood him right, that he wanted Mr. Woods to make some improvement in the dumping arrangement, to put on what improvements he could; I got my information from Mr. Scott himself, I think, for that; and Mr. Woods told me that in a conversation he had with Mr. Scott he told him so.

2183. You are pretty well up in the building of cars, I suppose? Yes; I have been at it ever since I

was sixteen years of age; I ought to be.

2184. What is your opinion about the axles of the cars you are at present putting together? They are just the same class of axles as are used all over America; the same standard axle, capable of carrying 30 tons anywhere safely. The sample car is loaded here now; it has 24 tons of rails on it; it has been loaded ten days; I believe it was loaded by orders; I saw it loaded.

2185. You have seen the axles used on our railways? Yes.

2186. I suppose you know pretty well what they are? Yes, I have examined them thoroughly; the

conversation that is flying round has caused me to examine all these things thoroughly.

2187. Do you think your axles are equal to those already in use on our railways? I think they are ahead of them. I think scrap-iron hammered is safer than steel. When steel breaks it goes right through at once, whereas iron will mostly bend. These axles will bend generally before they break. Steel will stand more pressure than iron, but when it goes it goes at once; it will not bend, but iron will bend before it breaks as a general thing.

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will stand more pressure than iron, but when it goes it goes at once; it will not bend, but iron will before it breaks, as a general thing.

2188. Then to all intents and purposes in the cars as now being fitted up the dumping gear is perfect, and will carry all that it is intended for? Yes, and more too. The car is suitable to carry more than the 20 tons; it will carry that, and do it right along, and be durable.

2189. And easily dumped? Yes, dumped without any trouble whatever. There is not a wholel ot of fixings about the car that gets out of order; that is one beauty of it. In most of these new things there is so much machinery all the time getting out of order; in this car there is now little.

is so much machinery, all the time getting out of order; in this car there is very little.

2190. Mr. Suttor.] I understood you to say you were taking a sample car about America in the interest of the patentee? In the interest of the Latona Car Company and the patentee of the car in America.

Mr. G. Batchelder.

2191. Who is the patentee? A man named Simpson.
2192. Does the Company buy the patent from him? I cannot say for that; I think that whenever they build the cars he gets a royalty of £1 a car; I think he told me so; he is a man that has been in the dump-car business for thirty years, and has always been endeavouring to make improvements.

2193. You brought this car under the notice of a good many Railway Directors in America? 2194. When was that? About a week or ten days before I left to come here.

2194. When was that? About a week or ten days before I left to come here.
2195. Did you subject this dump-car to ordinary tests? We tested it heavily to see what it could do.
2196. Were the cars you tested similar to the sample car sent cut here? About all the difference was in the different improvements I have spoken of. The car I am now building has these improvements; but

it has the same kind of wheel, the same axle, and is made of the same timber.

2197. Were the cars you submitted in America like the cars you are building here now? Yes. 2198. Did you succeed in dumping 30 tons of gravel in America? Yes, half on one side and half on the

other; you are not obliged to dump it all in one place.
2199. Having dumped half on one side can you lift the car and dump half on the other side? Yes, it will go back itself if you do not look out for it, when half the load is out; you want to keep your hand on the wheel; if you do not it is liable to go back. You can dump a third or a half of it, and then turn the car over and dump the other half.

2200. In these tests did you succeed in thoroughly clearing the car? Yes, we never put a shovel in it.

2201. Can you dump the car on a level piece of ground, and will the car clear itself then? No, it will not do it; there will be 4 or 5 tons that will be just on the edge.

2202. If these cars are used at all, do you think they will be available for our lines as they exist—all the sidings being on a level? You cannot build new cars fit for all classes of traffic. You can carry all kinds of goods in it, but it is not best to do it. For general traffic there is no better car in the world than this car.

2203. Our sidings are on level ground? Yes, that may be, but in this car you can dump your load out of it, even all on one side, and it only adds a little to the expense to get it all cleared off; whereas in the

present cars in use they have to get up on the load and throw all the stuff out. With this car they can do it for 50 per cent. of the cost of what they are now doing.

2204. Supposing the object is to meet the requirements of the coal, gravel, and wood trade, do you think it will be successful in getting rid of its load on our sidings, or will it be necessary to raise the sidings?

To make it dump nicer they ought to be 3 feet high.

2205. So that our sidings, as they at present exist, are not thoroughly suitable for the dump-car? I should say, to make it a perfect success in every respect, you would want raised sidings in some places. For instance, to dump into a ship or lighter, you would want a place to run the car to the side of the ship or lighter.

2206. For ordinary use along our railway lines, can you dump and clear the load at present? Not 20 tons—not the whole of it—but you can soon clear it.
2207. Are the cars that Mr. Carson Woods has undertaken to supply all on the same plan—all similar cars? Yes.

3008. Will these 200 cars be suitable in any way for wood traffic? Yes, but they do not want the gates on for wood. I am putting up some with the gates off, and with a couple of hours work the gates can be

put on if you want them.

3009. Will these cars be suitable for the wood traffic? Yes, nothing in the world better.

3010. Will they clear the load? No, not perfectly clear, but they are a splendid car for wood or anything of that kind.

3011. Have you had any difficulty in altering the cars to meet the requirements of the traffic? Not

3012. Did you get many orders for these cars in America? I got orders for fifty the first day on the Concord Road, only 70 miles long.

3013. Did you get any other orders? They were promised in two places.

3014. Then so far as you are aware these cars are not in general use in America? With the exception of these attachments they are in use all over America.

3015. Are they used for general traffic or for carrying sand and gravel and such things? They are generally used for gravel, wood, coal, stone, and everything of that kind; and they carry back goods as returns; I have seen all classes of goods on them. The cars I am building here have these extraimprovements on them which I have told you about. Many of them like the sample car are at work in America; I can show you half-a-dozen railroads that have them.

2216. Are you to supply cars similar to the sample car, or are they to be an improvement on the sample car? I understood the contract to be for two hundred cars like the sample car or its equal, and these improvements were asked for, as I understood, if we could make any betterment in the dumping arrange-

ment to put it on.

2217. Are you to be paid extra for these improvements? No.
2218. You consider all these improvements are included in the contract price? No, but we have made it our object to put them on, so that if the car proves a success we may get more orders.

2219. You are improving the car with a view to satisfying the Government and getting further orders if

possible? Yes. 2220. Are all these improvements included in the contract price? If I understand it right, we do not get the same those things than without them. I understand that Mr. Scott asked any more for the car by putting on these things than without them. I understand that Mr. Scott asked Mr. Woods to make an improvement if he could, but it was not understood that we were to get anything for it. The expense of some of these things is considerable. For instance, the improved wheel-box costs about £1 a piece more; it shuts out all dust and dirt, and keeps the grease from running out, so that the wheel will run three months without fresh oil; ordinary cars want to be oiled once in two or three days.

2221. What is your position with regard to these cars. You have the putting of them together? I have

the building of them, and the whole charge of them.

2222. Where were they built first of all? We are building them here.

2223. Are you building them here, or merely putting them together? We are building them here. The material has been imported from America.

2224. Had you any directions from Mr. Carson Woods to improve the sample car for submission to the Government? He told me these improvements were to go on the car when I built it. 2225.

ON THE PURCHASE OF RAILWAY ROLLING STOCK.

2225. In other words you got instructions to put these improvements on the car? He bought the material for these improvements with the other stuff that he got in America; some of it I bought here for things that will benefit the car.

Mr. G. Batchelder. 25 Sept., 1884.

2226. You are improving the car yourself? Yes.
2227. Are you doing this on Mr. Woods' authority? I am doing it on my own authority; I tell the master what I do.

2228. Then I am to understand you are improving this car in any way you think fit? I am only cutting off the bolt-heads and putting screws in place of them. 2229. Are the chilled-iron wheels on these cars the ordinary wheels used in America? Yes.

FRIDAY, 26 SEPTEMBER, 1884.

Present:

Mr. WRIGHT,

MR. SUTHERLAND,

Mr. CHAPMAN.

SYDNEY SMITH, Esq., in the Chair.

Mr. George Batchelder further examined:-

2230. Mr. Wright.] Have you had a large experience in America in railway rolling stock and railway Mr. G.

workshops? Yes, I commenced it when I was 16 years of age, and now I am 49.

Batchelder.

2231. At carriage building alone or in that combined with other work? All classes of rolling stock.

2232. Do you consider yourself competent to give an opinion on the suitability and workmanship of 26 Sept., 1884. railway rolling stock? I do.

2233. You stated that you had been employed by a firm in America to build this kind of car—the sample car—and to take orders for the same? Yes. car—and to take orders for the same?

2234. I believe you have already stated that you took some orders? Yes, Mr. Stimpson was with me, and he told me that he took some orders, and I worked the car.

2235. Within your knowledge is there any firm in America using this kind of car or a similar car? Yes. 2236. The sample dumping-car I refer to? Yes, not with these improvements, but like the old one.

2237. Do you consider, with your large experience in railway working and workshops, that these cars are suitable for all kinds of ordinary railway traffic? Yes, they are a general traffic car. There is no car suitable for every class of work.

2238. You introduced bogies or trucks under these cars?

2239. Are they the class of trucks or bogies used in freight-cars in America? Yes. 2240. Are they as strong as the ordinary American trucks? Yes, they are the standard trucks, with the standard axle.

2241. As a matter of fact this particular kind of bogie is used by American Railway Companies? Yes.

2242. It is quite as strong as the bogie in common use in America?

2243. Is the body of the imported dumping-cars constructed of the same class of wood and as well constructed as the bodies of freight-cars in common use in America? Yes, it is.

2244. You are quite sure of that? Yes.

2245. And you give that answer after a very large experience in railway rolling stock construction? Yes. 2246. Did you see the material of these cars shipped from America? I did.

2247. Is it true, as has been stated, that this material is already prepared and imported in frame ready to be put together? Some parts of it are finished, but some are not. Some of it is in the same state as that in which it came from the grooving machine.

2248. Is the woodwork fitted to be bolted and screwed together? Not wholly; it is partially so.

2249. Is the ironwork manufactured before its arrival here? Not all of it.

2250. I understood you to say that the sample dump-car had no king-bolt? No, it has not:

2251. Do you consider that the want of that king-bolt renders the car unsafe for traffic, or dangerous for

No; because it is not commonly used in America.

2252. Do you consider that with the steep gradients and sharp curves on our railway lines—curves of 8 chains radius—the car would be safe travelling over them without a king-bolt? I do not see why it should not be safe; the car is used on railways with strong gradients and curves in America, and I have not heard of any accident arising from its use.

2253. You think the car as originally constructed would not dump itself in transit? No. 2254. There is no danger of its jumping off the undercarriage? It cannot, unless it breaks the chains unless it jumps $14\frac{1}{2}$ inches high.

2255. I understand that the new car now imported to fulfil the contract with the New South Wales Government has a king-bolt? Two—one at each bogie.
2256. That I presume is an additional safeguard? Yes.
2257. What is the king-bolt made of? Cast-steel, 1\(\frac{3}{4}\)-inch through.

2201. What is the king-bolt made of? Cast-steel, 1\frac{3}{4}-inch through.

2258. What is your opinion of the relative strength of a cast-steel king-bolt and a wrought-iron king-bolt? The cast-steel is the stronger.

2259. I believe they do not use him.

2259. I believe they do not use king-bolts on American freight-cars? On some of them they do, but it is a straight bolt.

2260. The ordinary king-bolt? Yes; but this has a joint in it to enable it to dump.

2261. Is a king-bolt made of iron or steel used? A bolt made of iron.

2262. I understand you to say that the cast-steel bolt is stronger than one of the same size made of Yes, a great deal stronger.

2263. Were you at any time present at a conversation between Mr. Midelton—the Locomotive Engineer in Queensland—and Mr. Stanley, the Engineer-in-Chief for Railways in that Colony? Yes.

2264. On that occasion did you hear Mr. Midelton speak in flattering terms of these dump-cars and recommend them? I did.

2265. Will you be kind enough to state what he said? As I was showing the car to Mr. Stanley he said he considered that it was a good one, and when Mr. Stanley asked the price my impression is that he told him, but I could not say for certain. I did not know these gentlemen at the time, but I found out afterwards

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that one of them was Mr. Midelton. I think Mr. Midelton said the car cost £190, with the buffer-

work and chains £10 extra, making the car complete cost £200, and he said that was very cheap.

2266. You are quite sure that in your presence and hearing Mr. Midelton, speaking to Mr. Stanley, the Engineer-in-Chief for Queensland Railways. spoke in complimentary terms of this car? Yes.

2267. I understand from what you have said that a gentleman, in your hearing, told Mr. Stanley that these were good cars, and recommended them? Yes.

2268. You did not then know who this gentleman was? No.

2269. Did you afterwards recognize him? Yes; I have been introduced to him since that time as Mr. Midelton, and have spoken to him half-a-dozen times.

2270. Would you undertake, in the presence of this Committee, to dump this car with 20 tons of material

in it? I should have no hesitation in doing so.
2271. You can, in the presence of ourselves, dump 20 tons in this car in a satisfactory manner? Yes; if

you give me dumpable stuff.

2272. There were some figures painted on the side of the car—40,000 lbs.—I think? There was, and when I painted the car to make it look better, I painted out the figures.

2273. Were those figures 40,000 lbs.? Yes, they were on the left-hand corner.

2274. Do I understand that these figures indicated that the car's registered freight was 20 tons? Yes,

at 2,000 lbs. a ton—that is, 20 American tons.

2275. That is about 18 tons of English weight? Yes.

2276. Do you consider that the car itself and the bogies are quite strong enough to carry that weight under the ordinary circumstances of railway traffic? Yes, it has 24 tons on it now.

2277. You have been over the Blue Mountains here I believe? Yes, to Lithgow, over the Zig-Zags.

2278. Would you have any doubt about the stability of this car with 20 tons on it on those roads? No. 2279. Have you noticed the ordinary rolling stock employed on the railways in New South Wales? I have.

2280. Can you give me any idea of the working life of an ordinary truck of any class? That depends

altogether on the load it carries.

2281. Take the average load of 6 tons, which I believe is a fair average, what would you think their life would be with that load? That means a D truck. It depends whether there is a brake on it or not; the wheels will last longer without a brake.* It may be broken off or something of that kind. Then it depends how much they are used. You can use up a wheel in a few years if you use a brake.† Not being familiar with the timber of this country I do not know its strength, so that it is a question on which, perhaps, I should not be a good judge. I could tell better if I knew the quality of the timber in the truck I had seen it used.

2282. Can you give me any information, as far as you are capable of judging with your limited knowledge of Colonial woods, as to the comparative lives of the Carson Woods dumping-car and our railway rolling stock, considering the light power of the one against the heavy power of the other? I should think that the sample dumping-car would outlive the other car with the same weight and work.

2283. That is as far as you are capable of judging from your experience as far as it goes? Yes.

2284. Can you give the Committee any information as to the average life of the chilled wheel as to the number of miles it averages before it is worn out? That depends upon whether there is a brake on the cars. It will make a big difference whether a brake is applied or not a certain number of times a day. It is the brake which uses up the wheels quite as much as the roll on the rails.

2285. Have you any special knowledge of the durability of these wheels? I have known them to be run

eleven years before they were taken out. 2286. They are used exclusively in America? Yes; now and again you see other trucks, but these are mostly used.

2287. Have you heard anything about an agitation in America among railway managers in connection with the use of trucks with steel tires? I have read of it, but I have no personal knowledge of it.

2288. Mr. Bird.] How far up the railway line have you been? About 100 miles.

2289. Have you been up the Zig-Zag? Yes.

2290. Which Zig-Zag? I have been as far as Lithgow.

2291. Mr. Chapman.] Then you have seen both? Yes.

2292. Did you notice the curves and inclines on the mountains? I did.

2293. Have you been over curves and inclines of that description in America? Not zig-zags.

2294. Have you at any time been over curves and grades which are as severe? Yes, over grades very nearly twice as steep—250 feet to the mile.

2295. What description of truck is used? Outside of the mountain traffic the ordinary American truck. 2296. Do you think there would be any danger in the cars in question crossing such grades and curves as you have seen on the mountains in this Colony? I do not think there would be any danger in using the cars on any road. I consider them as safe as any car which is made.

2297. I want you to describe the shape of the king-bolt used in the cars in question? It is an ordinary joint king-bolt. One end is about $4\frac{1}{2}$ inches long and the other end is about 9 inches long. 2298. And the centre what is the thickness of that? About an inch and a quarter. 2299. And the joint? The king-bolt is probably about an inch and a quarter by three. I never measured

it; I am going by my eye.

2300. You said that the links and chains would require to break before the car could self-dump;—what is the strength of these links? You are mistaken. What I said was that it would require the chains and links to break before the body of the car could be thrown from off its truck.

2301. You have carefully examined the links? Yes.
2302. What is your opinion of their effectiveness and strength? They are quite strong enough to carry the load which they are designed to carry.

2303. What is your opinion as to the strength or weakness of the cars with the truss-rod substituted for the continuous draw-gear? The continuous draw-gear does not strengthen the car. It is merely a rod 2304. . connecting the draw-hooks and chains.

^{*} Note (on revision) :- Here was an interruption. Mr. Wright remarked that all our trucks had brakes. I replied, it might have been broken off, or something of that kind.

† NOTE (on revision):—Mr. Wright asked me here if I was familiar with the timber of this Colony.

Mr. G.

ON THE PURCHASE OF BAILWAY ROLLING STOCK.

2304. The truss-rod strengthens the car? It is one of the main things which strengthen it.

2304. The truss-rod strengthens the car: It is one of the main things which strongered the continuous draw-gear with Batchelder.

3305. But for drawing purposes—not for strengthening purposes—compare the continuous draw-gear with the truss-rods? I do not know how to make a comparison. The continuous draw-gear is not worth the truss-rods? I do not know how to make a comparison. The continuous draw-gear is not worth the truss-rods?

anything; it does not make the car better. The truss-rods answer for strength and for drawing-gear.

2306. In what way? They draw from one end of the car to the other. They go through the whole length of the car. It is impossible to pull off the cross-heads without breaking the four truss-rods and other bolts.

2307. Have you examined the woodwork in the sample car? 2308. What is the woodwork? Pitch pine and oak. Yes.

2309. You say that you have examined the trucks in use in New South Wales. What can you tell us about them further than what you have already told us? Are there any other points of comparison between the trucks in use here and the dumping-cars for ordinary freight purposes? The two things are so much unlike that I cannot make a comparison. They are not alike in any particular. 2310. In your evidence you mentioned the fact that you had a conversation with Mr. Scott as to certain improvements to be put into the cars. What is the date of that conversation? I cannot tell you exactly;

but it is within two months.

2311. Suppose you had a full load and wanted to dump it on a level, if you dumped one-half would there be anything to prevent the car from moving on? No.

2312. But suppose you dumped the whole? It would depend upon the material what it was, and whether it was wet or dry.

2313. But you can dump one-half of the load and move on? Yes, the car can be dumped when in motion, but it is proper to stop the train when the car is dumped.

2314. As to the material used in building these cars, did you get all the material in America? I am buying some here.
2315. What men are you employing in building the cars? About forty.

2316. Are they competent? I have got what I call a good lot of men; they are used to the business; some of them have spent their lives at it.

2317. Have you tested any portion of the material of which you are building the cars? I have.
2318. What have you tested? The bolts, draw-chains, and hooks.
2319. Where did you test them? In Sydney.
2320. Where? At a shop in Sussex-street—just this side of the Pyrmont Bridge.
2321. What test did you put them under? A trip-hammer which strikes 250 lbs. to a blow; I did not make

the test myself, but I was present.

2322. What was the result of the test? It was considered good. (Witness produced links and bolts.) The Committee can see for themselves the results of the test. Here is a main link which was struck twenty blows before it was bent to the shape in which you now see it. The links on your trucks are lighter than the links in use on the American trucks. The draw-chain goes into the cross-heads 1 inch*, but on these cars which we are building the chains are $1\frac{1}{4}$ inch. I produce a portion of a link which I saw broken the other morning as I was passing in a train. The engine started off and snapped the link. I picked it up and took it to the same man and he struck it twice and each blow broke it. You will see in You will see in the end of the link that there is a bit of good iron.

the end of the link that there is a bit of good iron.

2323. Mr. Chapman.] That is a Colonial link? Yes. You can always tell good iron because it breaks off stringy; poor iron breaks off clean. If the link had been made of the same class of iron as the good piece which you see at the end of it it would have strung right out. Your railway yards are literally strewn with poor iron like that. I go through there four or six times a day on the way to my house, and once in a while I happen to see a piece of good iron, but as a general rule it is poor stuff. Some one ejaculated here, "We are now getting better iron." I have had a conversation with Mr. Bourn, the inspector. He examined a piece of iron that was broken on the cars, and he said that it was as good iron as he ever saw. He said, "Batchelder, if you were a Chinaman or any other man I would say that there is as good iron in your cars as any I have ever seen." That had reference to the three cars the brakes of which were broken when being run over a turn-table. He took a piece of the iron to his office and he of which were broken when being run over a turn-table. He took a piece of the iron to his office and he told me that it was first-class iron.

2324. Chairman.] Do you receive any royalty on orders received for these cars? No. 2325. No commission of any kind? No; I get £8 a week for my services—yearly engagement.

2326. You have stated that there are certain portions of the car which are not imported; -will you inform

us what they are? Screws, paint, and links to make chains.

2327. What kind of chains? Chains for dumping purposes.

2328. Are there any other parts of the cars made here? Yes, I am getting some ironwork done here. There is an iron plate which covers the top transom; this plate is $8\frac{1}{2}$ feet long and 15 inches wide. I am getting the plates made here at a cost of £2 per 100, and I am having irons made here for all the levers of these dumping arrangements. I have thirty-nine men working here.

2329. What is the value of the materials which are used in the Colony? Do you mean the cost of the labour?

2330. No, the value of the local material used in each truck? About 25s. worth, I think.

2331. Have the thirty-nine men whom you employ a contract to put the cars together? Some of them have a contract.

2332. Did you not enter into a contract with certain persons in the Colony to put the cars together? I entered into a contract with certain men to complete all that there was to do to the cars.

2333. At what cost? £5; but that is only about one-half of the cost of completing the cars after the

material is landed here. 2334. How is the balance of the cost made up? In getting irons ready for the men in painting the cars and in certain class of work which is done by day labour on them. The men get the car material in different shapes; some have the head blocks on and others the draw chains and hooks. I have four gangs of men working under contract, and fifteen or sixteen men who are employed in getting the material

ready for the contractors.

2335. Do I understand that the cost of putting the cars together—the cost of the materials used and other expenses—amount to about £10? The cost from the day that the material is landed here until the cars are put on the track for the Government is between £10 and £11 per car.

^{*} Note (on revision): - The chains used on Government car are 1 inch where they go through the cross-head.

Mr. G. Batchelder. 26 Sept., 1884.

2336. I think that you stated that in America they do not use king-bolts in these cars? The first kingbolts that I have known to be used in connection with the cars are those which have been sent out in the material for these cars that are being built here. Trucks are not made fast in America as they are here;

they hang by the centre so that they swing as these dump-cars do when they go around curves.

2337. Do you know anything about the Allison Company's cars? Where are they made?

2338. In Philadelphia? I have heard of them.

2339. Have you ever seen any of them? I do not know that I have. The makers' names are usually put on the sills of the cars so that you do not notice them unless you look for them specially.

2340. Have you seen the sample car lately? Yes, to-day.

2341. Has it been damaged in any way? No.

2342. Are you sure about that? I am mistaken in that; the cross-head is cracked on one side; it is not

broken.

2343. How did that occur? There is a big mark on the wood which must have been caused by a buffer striking solid against it. The cross-heads on the new cars are 12 inches deep and on the other car $9\frac{1}{2}$

2344. Do you think that the buffers are strong enough to resist the heavy traffic and the rough usage to which trucks are put in this Colony? There used to be buffers on nearly all American freight cars, but so many people were killed by them that the Legislature made a fuss about their use, and they are not put on now to the same extent as they used to be. We use solid buffers. There is a block of wood and a plate of iron over it. This constitutes the buffer. They strike solid, without anything to take

off the jar. We put on centre buffers now, such as the one on the sample car.
2345. On the new cars are the buffers screwed on to the head stocks? They are bolted.
2346. And there is nothing behind to resist the blow? No; there is a board an inch thick, and a plate of iron is put on to that. It does not require anything more to resist the blow. With ordinary usage the buffers never get broken; it is only when there is a general smash that they are damaged.

2347. Have you ever travelled over our mountain line on a goods train? No, but I have travelled over

the line in a passenger train.

2348. You say that it is very difficult to form a comparison between the dump-cars and our trucks? Yes. The frames in your trucks are all cut up. In our cars there are six stringers which run through the whole length. Your trucks are all cut off and angled in. Owing to the way in which they are framed and built they will not stand heavy work. Take your little truck, it is stronger in proportion than your G truck, which is a flimsy affair, because it has no stringer in it. There is material enough in it to make a first-class truck if it were properly built, but it is put up in such a way that I do not consider it much of The truck is heavy enough, and there is iron enough about it to make a truck and a half. Where the strain is, that is through the body of the waggon, there is no sign of a support; the body is cut right in two, with the exception of the outside sills. The truss rod under the body is all that carries it; all the cross timbers are framed into it each way. Let the truss rod go down and the whole load would be carried on one timber stringer. As I have said before, the dump-cars have six stringers through -from one end to the other.

2349. In reply to Mr. Wright you stated that chilled cast wheels run for eleven years? I have known

them to run for eleven years. 2350. Without brakes? Yes Yes.

2351. How many miles? From 150,000 to 200,000.

2352. Would they run that distance with brakes on? It would all depend on how the brakes were I have known some drivers who would speil a wheel in one day, by setting the brakes down hard and causing the wheels to slide for a long distance.
2353. How long would the wheels last if used on steep declines, where it would be necessary to apply all

the brakes? As long as steel wheels.

2354. How many miles would they run? I cannot say; it would all depend on how the brakes were

handled. Some drivers would soon cut through a steel tire or a chilled cast wheel.

2355. What would be the life of the wheels if used in an ordinary way on steep grades where the brakes would have to be applied? With care I should think about ten years.

2356. How many miles would they run? 200,000.

2357. That is where brakes have to be applied? Yes, if your grades are not any heavier than those over which I have travelled since I have been here, the wheels would run that distance.

2358. I understood you to say in the first instance that the wheels would run 200,000 miles without brakes being used: now you say that they would run that distance if brakes were used? Do not mis-

brakes being used; now you say that they would run that distance if brakes were used? Do not mis-understand me. What I say is that as far as I can judge from what I have seen of your lines, if the brakes are properly handled the wheels will run 200,000 miles. Of course if the brakes are applied twice as hard to the whole train as they need be, that seriously affects the wheels. Some drivers will run an engine twice as long without repairs as other drivers would. I have noticed some of your street motors. knocking and bumping; the reason of this is that the brasses are not kept tight. If brasses are kept tight the wheels will last a great deal longer than they will if they are allowed to get loose and to bump. 2359. In reply to a question you stated that Mr. Scott spoke to you about two months ago and suggested certain alterations in the cars? I do not think that I said that Mr. Scott suggested alterations; I was alluding to the alterations made in the cars. The question was asked me, "Who gave the order to have the changes made?" I said that Mr. Scott told Mr. Woods that if he could improve the dumping arrangement, he (Mr. Scott) would like to have it done. Both Mr. Midelton and Mr. Scott told me that they thought that the alterations which were made were improvements.

2360. Mr. Chapman.] I understood you to say that you have had an experience of our Colonial wood? I have had some, but not much. I have worked a few thousand feet of it in our building on the wharf, and

for a track on which to run trollies.

2361. From the tests which you have made of our wood, and from what you have seen of our trucks, doyou hink that you are justified in saying that your dump-cars will last twice as long as our trucks? I do. 2362. Notwithstanding your want of experience of our timbers, and of our trucks generally, you express that opinion? Since this matter has come up I have been in the railway yards, and I have taken particular notice of your wood and I have tested it. I find that it does not stand half the strain that our wood does. The wood in our cars—pitch—was proved to be the strongest wood at the World's Fair in Philadelphia—that is of wood of a good size. that is of wood of a good size.

Mr. G.

2363. Were our woods tested there? I do not know that they were.

I Batchelder. 2364. Even in the face of that you still think that your wood will last twice as long as ours? I do. I have tested your wood in large pieces. It is very brashy. You have a small kind of iron wood which will not break very easily, but the other wood breaks right square off. You might build a car with your wood which would last as long as ours, but you would have to use twice as much wood and make the car twice as heavy. If you were to take the same sized timber and put the same strain or weight on each our car would last twice as long as yours. I am satisfied that our oak will bear three times the strain of your wood; we make the cross-stringers which run through the cars of oak and then there are truss-rods under them.

2365. Have you tested any of the axles which have been brought out here? No.

2366. Did I understand you to say, in reply to Mr. Wright, that you would be prepared to dump one of these cars loaded with anything like reasonable freight—that you would do this by yourself as an exhibition to the Committee? Yes, at any time; but you must bear in mind that as the car is all new it will not work as quickly or as easily as it will when it is worn a little.

2367. In the test which you offer to make I presume that you will not want to choose any portion of a railway to suit you; will you make it on any portion of a line which may be pointed out to you? Yes; if you point out any place I will tell you what the car will do before we dump it. I can dump the car anywhere, provided, of course, that there is proper space for the material. For instance, if there is 20 tons of dirt on you want a space of 20 feet by 6 feet to hold it. The car will not dump itself on a level track with 20 tons unless the load is of iron. You can dump that on a level because it will all go out. Of course if you fill the car up to the top it cannot get out; but give the car room and the load will come out of it.

2368. Mr. Chapman.] It would be all the better if you could give us an exhibition of the dumping process. I have never seen any of the cars dump, but from the evidence I should imagine that they throw their contents out on the track? Those that gave that evidence show that they know nothing about the

2369. Are you willing to give us an exhibition of the process, to prove that they do not throw out on the

track? I don't say the cars will not empty any of the load on the track.
2370. But I understand you to say that they will empty some? They will empty a little portion, but if you give them a fair chance by allowing sufficient space they will clear themselves, track and all. course it cannot be expected that the cars will dump themselves clear on a level track; and no car that man can make will do that. There was a question Mr. Suttor asked me yesterday about the expense of using the dump-car as compared with other cars. I have obtained some information on that point which I am ready to give in evidence if you like.

2371. Mr. Suttor.] What I asked you was whether the cars are suitable for our sidings as they at present exist? I have ascertained that you use 250 D trucks for coaling your engines, and by making a calculation I find that 75 dump-cars will do the work of the 250 D trucks.

2372. Mr. Bird.] Have you ascertained the cost of the D trucks? Yes, I have ascertained it from the

Government Engineers and from tenderers who have built them. I believe it is £100, so that 250 trucks would cost £25,000.

2373. And what do the dump-cars cost? £200; so that 75 cars at £200 would cost £15,000.
2374. What is the weight of the D cars? 5 tons.
2375. How did you ascertain that? I have been told by builders and railway men that they weigh 5 tons

and carry 6.

2376. What do your dump-cars weigh? 9 tons 17 cwt., and they carry 20 tons.

2377. Have you ascertained how many men are required to unload a D truck? You can put as many are not be from one to a dozen.

2378. Have you made any calculation as to the cost of unloading 250 D trucks? Yes; I estimate that it will cost 2s. per truck, so that it will cost £25 to unload the 250 trucks, while the seventy-five dump-cars can be unloaded for £1. I could unload the whole seventy-five in an hour and a-half. I figure it to make this estimation that on ordinary traffic days £1 would unload the seventy-five cars. 2379. Mr. Suttor.] In the calculation you have made have you assumed that the siding accommodation

for the dump-cars must be different from our present sidings—that our sidings must be made suitable for the dump-cars? Yes, but one half the cost of the present sidings of which you build miles for your D trucks would, if put into trestle work, be sufficient for dumping the cars and for working them properly. 2380. But, taking things as they are, do you think there would be any great saving effected by using dump-cars instead of the present D cars? Yes, a saving of 40 per cent.

2381. Even with the present sidings? Yes, taking all classes of goods.

2382. Although all our sidings are on a level? Yes, mostly; I have seen some that are 6 or 8 inches

2383. And that being the case, the dump-cars would not clear the track, possibly? Not in every

2384. So that men would have to be employed to clear the track? Yes, if you dump the load all on

2385. Mr. Bird.] It has been stated already that they can be moved from one place to another while unloading? Yes; you can dump half the load in one place, and then move the car and dump the remainder further along. If the load is gravel you can dump the car as it moves along, and the gravel

will silt out on the level. 2386. Mr. Suttor.] But are you aware that in the case of coal traffic the coal is not thrown from the trucks on to the ground, but is shovelled into carts to be taken away; and that being the case would there be any advantage in using dump-cars in preference to our own trucks? Not if you don't use the dumping part. The advantage of using them is that you do away with 5 or 6 tons of dead rolling stock.

2387. For the purpose of transferring a load into drays the dump-car has no advantage? No, it has no advantage if you have to put a man in to shovel out the load.
2388. Then to make the dump-cars available on our lines we shall have to alter the whole of our present sidings; at any rate, those on the level? No; you can use the cars for gravel or for stone ballast. I have seen your trucks bringing rock ballast from Darling Harbour, every day I see twenty or trucks. have seen your trucks bringing rock ballast from Darling Harbour—every day I see twenty or twenty-five of them—and I understand that that rock is put along the railway track and broken up. For that purpose the dump-cars would be of great advantage. They would empty the load in a minute and a half on both sides of the track. 2389.

Batchelder. 26 Sept., 1884.

2389. But even in the case of stone ballast is it not the practice to distribute the load along the line and not to discharge it all in one place? There you have a great advantage in using the dump-car, because you can sift the ballast out a little at a time on both sides of the road. You are not obliged to tip it out at one time. You may tip the car up so as to get out 1 ton or 5, or any quantity you like.

at one time. You may tip the car up so as to get out 1 ton or 5, or any quantity you like.

2390. You said just now that seventy-five cars would do the work of all the coal trucks employed on our lines? Yes. You have 250, so Mr. Scott tells me, for your own engines, and seventy-five cars would do the work of that 250—would carry all the coal the 250 carry.

2391. And you think the dump-cars would be useful for the carriage of coal? Yes, for every class of goods; but some kind of goods are better suited for them than others. However, they are good general traffic cars. In our country they run trains carrying nothing but coal, and they use none but these cars. You must have sidings for your 250 cars, and one-half the cost of those sidings put into trestle work, as I have said before, would enable you to unload the seventy-five dump cars for £1; whereas the unloading of your 250 D trucks costs you £25, reckoning 2s. a truck, and I think it is worth that to handle 6 tons of coal.

2392. But if you shoot the coal on to the ground you would require men to shovel it into something else? I would not shoot it on the ground if I used trestle work. By spending half the cost of your present sidings on trestle-work you could save £24 a day on coal alone, besides the drawing of 500 tons of rolling

2393. Chairman.] Have you made any calculation with regard to the G truck? No; I would not consider it safe to put 20 tons on a G truck. It might stand it for a while, but I would not consider it

2394. But supposing it to be safe, would there be the same difference? No; the G truck would be as

good as the other, only that you would have to carry an extra weight of 3 or 4 tons. 2395. Mr. Bird.] Which is the heavier, the G truck or the dumping-car? The G truck. I think it

weighs about 14 tons.

2396. Do you know the average? There is one weighing 14 tons 11 cwt., and another about 11 tons.
2397. And the weight of the dump-car is 9 tons and some cwts.? Yes; that is American tons, which are
2,000 lbs., while your tons I understand are 2,240 lbs. That makes a difference of 240 lbs. per each ton,

and will make the G truck weigh 5 tons more than a dump-car.

2398. If you want to turn a load from a dumping-car into a cart—that is, using the car simply as a freight-car, can that be done? Not without a place is made for it.

2399. But if you want to unload a dumping-car into a car without using the dumping apparatus at all, can that be done? Of course it can, just the same as any other; you are not obliged to dump if you do not want to.

2400. But if you wish to dump you can? Yes; and if you do not you are not obliged.
2401. How long does dumping take? The car will dump itself in a minute and a half if it gets a chance, but as a general thing it dumps a little slower than that. It will go over as quickly as you like to let it.

TUESDAY, 30 SEPTEMBER, 1884.

Bresent:

Mr. CHAPMAN, Mr. POOLE,

MR. SUTTOR, MR. TEECE, MR. WRIGHT.

MR. SUTHERLAND,

SYDNEY SMITH, Esq., IN THE CHAIR.

William Cross, Esquire, called in and examined:

W. Cross, Esq. 2402. Chairman.] What occupation do you follow? I am an iron merchant; I belong to a firm of contractors for the manufacture of railway rolling stock in Scotland. We supply railway companies with 30 Sept., 1884. railway material.

railway material.

2403. How long have you been in this Colony? About six months.

2404. Have you examined the dump-car? I have, and I think it a great success. This Colony is to be congratulated upon having initiated this American principle here.

2405. At whose request did you examine these cars? At no request at all. When I came here first I met Mr. Woods along with two Glasgow friends, and we went about the Bay together, and when I came here again I wanted to see Mr. Woods, and found he was at Brisbane, and I then learned that he was building those cars. I know nothing about an inquiry of this kind at that time: but I went down to see building these cars. I knew nothing about an inquiry of this kind at that time; but I went down to see them, and I saw Mr. Bachelder. We got talking about iron matters generally, and I showed him how we tested iron at home. We took a link and a hook and had them tested under a trip-hammer. custom at home to have everything tested.

2406. Have you examined the axles? Yes, I have examined them as they are being delivered to the

Government at the present time.

2407. What is your opinion about the axles? I think there is nothing wrong about the axles at all; it is

a very good axle.

2408. Have you had any experience of the manufacture of rolling stock? Yes, we are regular contractors for the manufacture of rolling stock.

2409. Did you examine the mode in which the buffers are attached to the head stock? No, I do not think I did.

2410. Did you examine the way in which the body of the car is attached to the bogie? Yes 2411. In what way is it done? They are connected by , and in the centre of , and in the centre of the dumping

apparatus there is a bolt to prevent it tipping over. 2412. Of what material is the bolt? Cast steel.

2413. Do you know the size of the bolt—the king-bolt? I cannot give the dimensions definitely. 2414. Have you examined the wheels? I have. 2415. What is the material used? Cast-iron chilled.

2416. Do you use this class of wheels on the rolling stock you make? No.

2417. Why? That is a question I cannot answer. The wheel has never been introduced. When I left W. Cross, Esq. home an effort was being made by some mercantile firms to introduce it.

2418. You are unable, then, to give us any opinion regarding the suitability of cast-iron wheels? 30 Sept., 1884. Nothing more than what I have read and studied about it.

2419. On all the rolling stock manufactured by your firm do you use steel tires? Yes, they are ordered that way

2420. Mr. Poole.] You are an iron merchant? Yes, and permanent-way contractor.
2421. What is the Committee to understand by that,—the construction of lines, or supplying railway lines with material? Supplying railway lines with material.

2422. Have you had extensive experience of this business? Yes; on all the Scotch railways.
2423. What kinds of materials have you supplied? All kinds of materials: rails, wheels, axles, malleable iron, forged iron, steel-not only to railway companies, but also to shipbuilding companies upon the

2424. What experience have you had with respect to making and working of railway rolling stock? We contract with makers to manufacture for us waggons for the different colliery proprietors.

2425. Have you had any experience in the working of railway rolling stock? Yes.

2426. Where? On the Caledonian line between Baillieston and Glasgow.

2427. What kind of rolling stock are you more particularly acquainted with? Coal waggons and other trücks

2428. How are they constructed? That is a very general question.
2429. What was the general system. Was it hopper or plain fixed train waggons? Plain waggons.

2430. Have you seen any of the Government rolling stock here? Yes.

2431. Have you seen any of the Government rolling stock nere? Yes.
2431. Have you seen the trucks known as D trucks, carrying about 6 tons? Yes.
2432. Is that a similar description of rolling stock to what you have been accustomed to? Yes; in its general style. Our trucks hold about 8 or 10 tons.

2433. Upon how many wheels? Four wheels.

2434. What kind of wheels do you use? Latterly we have been using closed wheels. 2435. Block wheels? Yes. Formerly they were open wheels with iron tires.

2436. Lately? They are all closed wheels now. 2437. What are the wheels made of? Iron.

2438. Not steel? Not steel. There are steel tires upon some of the wheels. But each engineer has a different idea. We manufacture for people who have different ideas. Some have iron tires, some steel

2439. Are the block wheels tired? Yes, tired with iron or steel.
2440. Have you had any experience in the use of cast-iron chilled wheels? 'None.

2441. Have you examined the cars known as the American dump-cars, now being put together for the New South Wales Government? I have. I was down at the building works this morning.
2442. Did you examine the bogic frames? Yes, but I am not sufficiently an engineer to talk definitely about any method of construction. I can speak as to the material.
2443. Will you be good enough to give the Committee your opinion as to the quality of the workmanship?

I think the workmanship most strong and serviceable. 2444. Did you examine the axles? I did.

2445. How are they made in your opinion? They are forged axles, made of scrap iron in the ordinary way

2446. Can you by an examination of the axles see where the blooms have been raised on each other? No, you cannot.

2447. Is there any scab or scale? There is a slight scale; but nothing at all material, the same as you will find on all your axles

2448. What material are the wheels composed of? Chilled iron. 2449. Did you notice the construction of the frame that holds the four wheels composing each bogie together? I did.

2450. What, in your opinion, is the nature of the frame-work, so far as its durability is concerned? I think the iron-work in the frame is very strong.

2451. Did you examine the workmanship of the body of the car itself—the timber work? I did, but I do not know anything about timber work.

2452. Did you notice the machinery for the purpose of dumping the car?

2453. And also for the purpose of preventing the car dumping? I did.

2454. Do you consider the machinery is safe to prevent the car dumping while in transit? I do, so far as my knowledge goes.

2455. But you have had no experience of the management of rolling stock generally? No, not the working of it.
2456. You make rolling stock according to somebody else's design? Yes, but we make designs also.
2457. As far as your knowledge goes of the rolling stock in general use in Scotland, is there any example of a car of this pattern? None with dumping gear; there are cars for carrying long rails, but there is no

dumping car.

2458. Is there very heavy mineral traffic along the Caledonian Railway? Yes, coal and iron.

2459. That kind of traffic is carried in trucks with a capacity of about 8 tons? Yes, from 8 to 10 tons.

Then roils are carried in much heavier loads in long trucks. It depends on what material they are carrying. Iron rails are carried in much heavier loads in long trucks. 2460. And these are all four-wheeled trucks? Yes.

2461. No bogies? No bogies.

2462. Do you know of your own knowledge what is the sharpest curve on the Caledonian Railway? I cannot say; but on the South-western Railway, where the curves are very sharp, they are introducing

bogie trucks to assist in getting round.

2463. Do you know the diameter of the axles on the coal trucks on the Caledonian Railway? Three inches and three quarters to four inches. The Caledonian Company make no stipulation as to the size of

2464. Have they to stand a certain test? There is no test at all.

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2465. Do the makers guarantee a certain number of miles running? No, they make no guarantee. Their own name is sufficient for that.

W. Cross, Esq. 2466. Then your experience is that 8 tons of coal is carried on two $3\frac{3}{4}$ axles? Yes.

2467. What are these axles made of? Hammered iron; forged iron. Steel has been tried, but is not a 30 Sept., 1884

2468. Mr. Chapman. Do I understand you to say that you saw these dump-cars working to-day? I saw them being run to-day down at the other side of the Pyrmont Bridge.

2469. Were they run for your satisfaction? They did run to my satisfaction, but not for me at all. I

happened to go down there to see Mr. Batchelder. 2470. Had they an engine? Yes.

2471. Did the engine belong to Mr. Batchelder or Mr. Woods? I think it belonged to the Government. 2472. Did you ever design rolling stock? No, not individually, but I have gone over it along with my partner, Mr. Wyllie. 2473. Are you the salesman outside? I look after the manufacturing of the stock and buying the

material.

2474. In fact, travelling? No, not travelling. After the orders are got I look after the work. 2475. You have no connection with Carson Woods & Co.? None. 2476. Mr. Wright.] Are you an engineer? No, not a mechanical engineer.

2477. Are you a civil engineer? No. 2478. Simply an iron merchant? Yes, and contractor for rolling stock.

2479. You have had considerable experience in the manufacture of rolling stock? Yes.

2480. Do you consider yourself capable of giving an opinion as to the strength of material, and so forth?

2481. Did you notice the axles under the dump-cars? I did not notice so much those under the dumpcars as those lying ready to be put on.
2482. Do you consider the axles you saw capable of carrying the weight marked on the dump-car—40,000 lbs.? I do.

2483. I think you have already said the workmanship of the axles is good? \mathbf{Y} es.

2484. And you think that under all the circumstances of railway traffic they are sufficiently strong? Perfectly so.

2485. Did you notice the springs under the bogies? Yes.
2486. Do you consider those springs strong enough? I do not think they will come down at all. They are over-strong if that be possible.
2487. Then I understand it to be your opinion that the whole of the iron-work is strong enough for the purpose? Yes, it is quite satisfactory, I think.
2488. Did you notice the size of the axles in the dump-cars? I think they are 3\frac{3}{4} inches.

2489. Is that at the shoulder, or in the centre? In the centre.

2490. Did you notice the mechanism by which the cars are dumped? I did.

2491. Do you think there is any danger of that becoming loose in transit? I do not, but I am not sufficiently an engineer to give an opinion on that point. My opinion is that there is no danger of that

2492. Did you notice that the sample car has no king-bolt? I had that pointed out to me. 2493. Am I to understand that even without the king-bolt there is no danger of the car self-dumping in

transit? I think the king-bolt makes security certain. 12494. Do you think that without the king-bolt there is any danger? I am not sufficient of an engineer to answer that question. Experience only will decide that.

2495. Are the firm you represent manufacturers of railway rolling stock? We contract with manufacturers to make rolling stock for the different colliery proprietors.
2496. Does that include the wood-work of the carriages? Yes. The iron-work is done by one firm, the

wood-work by another.

2497. You sub-let that portion? Yes. 2498. From your general experience of railway rolling stock do you consider the iron-work of these cars We would be delighted to get as good iron at home as they have in these cars. sufficiently strong? 2499. Do you consider the wood-work up to the average for strong workmanship? I think it is very

strong workmanship.

2500. Is the material stout enough? Yes.
2501. Am I to understand from your answers that you have inspected both the workmanship and material of this car, and, as far as both are concerned, it is a good serviceable car? Yes, I think it is a good serviceable car.

2502. Mr. Suttor.] What sort of trucks do you generally supply in your business? Four-wheeled trucks, to carry 6, 8, and 10 tons.

2503. Somewhat similar to those now in use in this Colony? Yes, very similar; I think yours carry

6 tons. Dump-cars have not yet been introduced into England or Scotland.
2504. I suppose the Railway Companies at home are anxious to avail themselves of all labour-saving appliances? Yes.

2505. Are you aware whether the dump-cars have been submitted to any Company in England for approval? I am not.
2506. Do you know the weight of these dump-cars? I did hear the weight of them, but I forget what it is. I know they are very much lighter than ordinary trucks of the same size.

2507. Do you know the weight they are supposed to carry? 20 tons.
2508. Do you know of any recognized proportion between the weight of a truck and the weight it wil carry? I have figures for it, but I cannot give them now.
2509. Can you give us a rough idea? No, I cannot.
2510. You cannot tell whether the weight of the load is heavier than the truck or the truck heavier than

the load? Speaking generally they are about equal. 2511. The truck will carry about its own weight? Yes.

2512. Do you know any truck in England weighing 7 tons that will carry 20 tons? I do not, with the

exception of trucks carrying rails.

2513. Special loading? Yes.

2514. Is there anything to justify you in giving an opinion that this new truck will carry twice its own weight of such material as coal or gravel? Not as far as my experience goes.

2515.

2515. Do you think it is going beyond the bounds of present experience to submit to the coal proprietors W. Cross, Esq. at home that you work for a guarantee that it will carry twice its own weight? I have made up my 30 Sept., 1884. mind to submit it to them when I get home.

2516. But you have never heard of such a thing? I have never heard it and never had it submitted till

I saw it here.

2517. You have not seen these cars tested yet? I have seen them dumped at the Pyrmont Bridge.
2518. With a full load on? No, 6 or 8 tons were on it.
2519. Was it dumped on a level piece of ground? Yes; just upon the railway siding. It threw all the stone out, and everything worked properly.

2520. You say you would be very glad if you could get iron similar to that used in these dump-cars?

Yes, in quality.

2521. And you make that statement after seeing it tested? Yes.

2522. What was the test? They took a hook and link across to the trip hammer at the other side of the bridge, and put them below it, and tested them; it was the usual test.

2523. And you consider it better iron than is used in England? Better iron than our extra best iron.
2524. Have you compared the dump-cars with the other cars used here? I have looked at them, but I have not sufficient experience of either of them to say whether one is better than the other.
2525. As to workmanship—is there any difference? I fancy the dump-cars are as good, if not better.
2526. Have you travelled along our railways at all? Only backwards and forwards up country and to

Melbourne, simply as a traveller.

2527. You did not take special notice of the construction of the lines? No.

2528. You are not in a position to give any opinion as to the suitableness of these cars for our lines? Nothing at all; except that I believe that wherever your cars can go these cars can go.
2529. You have not had much experience of wheels? Yes, we are always supplying material and watching

the making of them. We have to make them from the designs of different engineers who have often

2530. Have you any chilled cast-iron wheels in Scotland? No. I know they are at present being attempted to be pushed, but I do not know whether they have succeeded or not; they had not when $ar{1}$

left Scotland.

2531. Mr. Poole.] What weight do you think these dump-cars are capable of carrying—what weight will the frames carry? I understand they are constructed to carry 20 tons, and I have no doubt they will carry that weight.

2532. Chairman.] How do you arrive at that conclusion? From the fact that nobody would contract to do it unless he was certain of its capabilities.

2533. Have you had any experience with regard to the carrying capacity of freight-trucks built in the same manner as these dump-cars? No, I never saw a dump-car before.

2534. So that from your experience as an iron merchant you are not able to give the Committee a practical opinion with regard to the carrying capacity of these cars? I am not; but I may say, I think

a test would be the simplest way of finding out that.

2535. Mr. Poole.] When you said that no one would contract to supply a car to carry a given weight unless he knew its capabilities, I take you meant persons who make it their business to supply rolling stock and not mere importers? I have had no previous experience of importers; the persons I have been dealing with were always builders.

2536. You were thinking of persons who make it their special business to construct rolling stock, and give the whole value of their name as a guarantee for the proper construction of the truck? Certainly. give the whole value of their name as a guarantee for the proper construction of the truck? Certainly. 2537. It could not apply to a mere importer getting a chance contract? I do not know what you mean by a mere importer.

2538. I mean that he would not have the standing and status of a firm doing this kind of business? He might be making a status for himself, and he would spoil himself if he did not carry out his guarantee.

Mr. Joseph Railt Davis called in and examined:

2539. Chairman.] What is your occupation? Car-builder.
2540. Where are you employed? At the Old Atlas Works at Pyrmont.
2541. By whom are you employed? By Carson Woods and Co.
2542. What work are you doing at the present time? Building cars.
2543. What kind of cars? Dump-cars.
2544. Have you built many of them? Quite a number.
2545. What experience have you had in ear building? My experience.

2545. What experience have you had in car-building? My experience is limited. I have had about twelve years' experience of railroading, and I have been altogether about two years car-building

2546. Have you had any experience in the manufacture of rolling stock in this Colony? No, this is my

first experience here, with Carson Woods and Co.
2547. What class of woodwork is in these cars? I consider it first-class woodwork.
2548. What description of wood? The best pitch pine for the stringers, the best of oak for the head stocks, and the best of oak for the trucks.

2549. How are the buffers attached to the head-stock? With four \(\frac{3}{4}\)-inch bolts passing through the headstock.

2550. Do you think there is any likelihood of the head-stock breaking with a severe shunt? No, not in fair shunting; no iron-work on the cars will break.

2551. Have you had any experience of shunting on our lines? No.

2552. So that you are unable to say with what severity they will be shunted? Engines of about the same diameter of cylinder will give the same power, and a man that will break a buffer as strong as this is should be discharged from any railway employ. He would be in America by any private Company. They are not Government railways there.

2553. Is this buffer attached to the head-stock in the same way as to similar rolling stock in America? No; in America there is just one buffer; the draw-head and buffer are combined; there is only one coupling

2554. Have you had any experience in the use of side buffers? I have not; I never saw them till I came to this country. 2555.

Mr: 30 Sept., 1884.

J. R. Davis. 30 Sept., 1884.

2555. How is the body of the truck attached to the bogie frame? With a king-bolt and strong heavy key above and below.

2556. Is there any likelihood of the body becoming detached from the bogie frame? No, not in ordinary 1186

2557. Have you examined the axles of these cars? Yes.

2557. Have you examined the axies of these cars? I es.
2558. Do you think they are capable of carrying 20 tons? I think so; they have been carrying it for years in America, and we have never had any of them broken unless by accident.
2559. What is the size of the axles? 3\frac{3}{4} inches; perhaps a little larger than that.
2560. What kind of wheels are on these cars? Cast-iron chilled wheels, the same as in use all over

America; they are using them on all their cars there.

2561. How many miles will they travel? I do not know; I never saw one of them worn out. I have seen them go 60 miles with the brake thoroughly tight the whole 60 niles, and I never saw one worn out; I have seen them even red hot with the friction.

2562. Mr. Poole.] Are you a mechanic? I would not consider that I am a mechanic. 2563. In what capacity were you employed in America on railways? The first two The first two years I was brake-

man, the same as you call guard here; from that on I was conductor.

2564. And since you left the railways you have been car-building somewhere in America? No.

2565. I understood you to say you had had two years' experience in car-building? I did not say when;

it was before I ever went to railroad work I was car-building. 2566. Where at? At the Central Pacific car-shop in California.

2567. How long were you there? A year and eight months.
2568. What were you doing during that time? Working at car-building.
2569. In what capacity? In all capacities.

2570. Were you a carpenter? Yes, I am a carpenter. I worked as a carpenter for one year before I left New York, my native State.
2571. Are you a blacksmith? No.
2572. You are now employed by Carson Woods and Co. to put these cars together at Darling Harbour?

No, we are building these cars.

2573. What do you wish the Committee to understand by "building" them? We are building them.

2574. Are you forging the axles? No.

2574. Are you forging the axles? No.
2575. Or making any iron-work? Some of it.
2576. What kind? If we get anything broken we weld it together again.
2577. You are building the cars there, you say. I want to know what you are doing that comes within this general term, "building." Are you forging any iron there? No.
2578. Are you casting any wheels there? No.
2579. Are you preparing any timber there? Some of the timber is prepared there.
2580. What part of it? The flooring is prepared there; some of the stringers are prepared there; some of the head-stocks are prepared there: some of all the wood-work is prepared there.

of the head-stocks are prepared there; some of all the wood-work is prepared there.

2581. The timber itself—the lumber—is all imported? I have nothing to do with the importing of it.

2582. But it is so, is it not—it comes there with the axles? Yes.

2583. Have you any machinery there for shaping wood, at the Atlas Works? Not at present.

2584. Are the alterations you make with the timber just done with ordinary planes, saws, and chisels? There are several alterations to be made in the timber.

2585. What do they consist of? Really I could not tell you; I am only employed on certain cars; I might have alterations to make in mine that others would not have.

2586 You might have to ease the timbers together a little? I do not know what you consider easing

timbers together.

2587. How many years have passed since you were employed in car-building before this? It is all eleven

years—about eleven years.

2588. Were you employed assisting to build this particular kind of cars? No, I was not.

2589. Had you any experience in building this kind of cars till you came here? No, I had not.

2590. Mr. Wright.] Did you ever see these dump-cars used in America? Yes.

2591. On what lines? On the Northern Pacific and Central Pacific.

2592. How long since? About five years was the first car I ever saw in my train, when I was on the Central Pacific line.

2593. Were they used to any extent? They came over quite frequently in our trains. We considered them foreign cars when they got east; cars coming from the Eastern States into California are considered foreign cars; on the Atlantic side they were considered foreign cars, and we particularly noticed them when first they came in our trains; they used to come quite frequently, loaded with iron and all sorts of things

2594. Did you ever hear any complaints about their unsuitableness or insecurity? No, I never heard anything of the kind.

2595. Did you ever hear any complaints that they were unsafe? No, I never heard a complaint about them; we always considered them as safe as any other sort of car.
2596. Are the cars you are now building equal to the sample dump-car? I have examined the sample dump-car, and I consider the cars we are now building excel the sample car in many respects. If I was running a train I would sooner have these cars than the other.

2597. Are what we call bogies, and you call trucks, universally in use in America for this description of car? Yes, we call them trucks. There is no rolling stock in America that has not got cast-iron wheels, and the same axles as are used in these cars.

2598. I am talking of the trucks or bogies? Yes, the diamond trucks are used all over America.
2599. Do you consider, from your experience, that the bogie or truck you are now constructing is equal in strength to the truck in general use in America? Yes.

2600. It is of the same general design? Yes, in fact nearly all the trucks in America are of about the same design.

2601. Is the iron-work about the bogies here the same in size as in common use in America? Yes.

2602. You have said chilled wheels are universal? Yes.
2603. They are used under passenger trains? Yes; in quite a number of passenger trains now they put paper wheels; they run stiller and smoother; but nine-tenths of the passenger coaches in America at present have chilled wheels. **2**304.

2604. The same class of wheels as are used for these dump-cars? Yes. 2605. Have you ever known one of these dump-cars to dump itself while in motion? Never; and I think if it had happened we should have heard of it; we used to hear of all the casualties that happened on any of the roads; we took in the Railroader, a paper that gives all railway information, casualties and their causes, and everything.

2606. As far as your experience goes you consider the chilled wheels imported by Carson Woods & Co. equal to the chilled wheels used ordinarily in America? I do consider them equal in every respect; you could not tell them apart; they are made the same.

2607. Do you know by whom they were manufactured? No, I do not; it is on the wheels, but I never

2608. I understand there are firms in America who do nothing else but manufacture these wheels? Yes, hundreds of them do nothing else.

2609. Have you examined the iron-work, or seen it tested? I have examined it, and seen it tested. 2610. In what way? By bending the bolts in all manner of shapes, and they could not break them; they

put a strain on the rods to see what they would hold, and they never could break one of them.

2611. Has that been done at the Atlas Works? The hooks were taken under a trip-hammer, and pounded out together, and still they would not break. I said I had seen them tested; I beg pardon; I should have said I have seen them after they were tested—the hooks.

2612. Do I understand that all the tests made with the iron to be used in the dump-cars were satisfactory?

Yes, they were satisfactory as far as I know, and I think I know of all the tests that were made.

2613. From what you know of the use of dump-cars, do you think there is any possibility of the car being knocked off the under-carriage while in transit, going round a sharp curve, or owing to unnecessarily severe shunting? No, I do not think it is possible going round a curve.

2614. Do you think it is possible with rough handling? Anything is possible; steam will break anything. I have seen a car doubled right up with shunting. If you take a train of cars and run them into a stationary car something must give; but these cars will stand as much rough usage as any cars will stand.

2615. There is a king-bolt, I believe, in the new car you are now erecting? Yes.

2616. And there was none in the sample car? No, I believe not; as far as I could see I could not see any in the sample car.

any in the sample car.

2617. You are a carpenter, I think you said? Yes; I do not consider myself a first-class carpenter; most of my time I have been railroading.

2618. You said just now that portions of these cars are pitch pine and portions white oak? Yes.

2619. Are those the woods in common use for freight cars in America? Yes.
2620. You have no continuous draw-bars under these cars in America? No, the draw-bars in America are like what is on the sample car; one centre coupling; the draw-bar acts as a buffer at the same time.

2621. Do you think the truss-rods of this car, going through the two head-stocks, are sufficiently strong to make the cars perfectly safe. There is no danger of the head-stocks being pulled of? No, not the least. I have seen the same cars going up steep grades in America without any danger of that; continuous draw-bars are seldom used in America.

2622. You stated, in answer to Mr. Poole, that you considered the buffer's quite strong enough to stand any ordinary usage? Yes.

2623. You are aware that the buffer is fixed to the head-stock? Yes.

2624. Is this head-stock sufficiently strong to withstand the concussion in shunting on our lines? I think

2624. Is this head-stock sumciently strong to withstand the concussion in shunting on our lines? I think it is quite strong enough. Of course in shunting you can break anything, if you do not shunt properly. Occasionally a car of the best manufacture will break.

2625. You think this head-stock is sufficiently strong to stand any fair average shunting? Yes; the head-stock on these new cars is much stronger than on the sample car. There is $2\frac{1}{2}$ inches difference in the size of the stringer; there is $2\frac{1}{2}$ inches of solid oak more than is in the sample car.

2626. In the depth? Yes, in the depth; they are the same thickness, but one is deeper than the other; one is $9\frac{1}{2}$ inches the other is 12

one is $9\frac{1}{2}$ inches, the other is 12.

2627. You draw the car in America from the central draw-bar? Yes, the draw-head and buffer are com-

2628. Did you ever know an instance of a head-stock being pulled off an American car? Yes, quite frequently.

2629. In what way? In collisions.
2630. I mean pulled off in fair work? I have seen draw-heads pulled off, but I never saw a head-stock

2631. As far as your experience goes, will these dump-cars do all the work that is performed by ordinary freight-cars in America? Yes, they are used there as ordinary freight-cars nine-tenths of the time, especially on the North Pacific Railway.

2632. Mr. Suttor.] I understood you to say you were twelve years acting as brake-man and conductor?

2633. And for a year and eight months before that you were engaged as a carpenter, car-building? I never mentioned where or when; where I worked as a carpenter was in New York State, before I left to come to the Pacific Slope.

2634. You worked there as an ordinary carpenter, not in connection with railway work at all? No, not in connection with railway work at all

2635. In what capacity were you employed during the time you were car-building? I was on the Central Pacific Railway which extends from Ogden to San Francisco, over 600 miles. I was working as a general hand in car-building at , in California, repairing cars in a car-shop, as well as car-building.

2636. That is all the practical experience you have had before coming here? Yes.

2637. Chairman.] You said in reply to a question a little while ago that some breakages were renewed in the workshop at the Atlas Works—all the breakages that occurred in constructing the cars? I do not think I said that; I said if anything was broken we repaired it.
2638. Have you had any breakages here? Yes.
2639. What breakages? Well, really now, I will send you a list to-morrow; I cannot exactly call to

mind what they are now. 2640. Were any of the chains broken? I am not aware.

MINUTES OF EVIDENCE TAKEN BEFORE THE SELECT COMMITTEE 2641. Can you tell any parts that were broken? Yes, I can tell quite; a number of things that got J. R. Davis. broken with rough handling in unloading; some castings got knocked about. 30Sept., 1884. What part of the car did they belong to? I cannot tell you just now; I can tell you all that was broken if you wish a statement of it, but I think that is very unimportant.

2643. Mr. Wright.] Is any portion of the wood-work of these cars in frame when it comes here? Some portion of it is. 2644. Are the mortices and tenons cut? Some of the mortices are made, and some of the tenons are .2645. Is any of the wood planed up? Yes, there is some planed, and some that we have to plane. 2646. What you call the side posts;—are they planed up and tenoned ready for use—the posts that support the side of the car? Yes, they are squared and tenoned.

2647. The axles are forged entirely when imported? Yes; I did not see them shipped.

2648. As far as your knowledge goes they are made in America? Yes; I understand they are made there.

2649. The iron-work of the car, the steel springs, and the truss-rods, and all that, are made in America? Yes, I should say so; that is my impression.

2650. What is your definition of the term manufacture? Manufacture is to build and put up, I consider.

2651. If you were manufacturing a wheeled vehicle here for me, what would be your interpretation of that? I should say it was putting it together for you, no matter where I got the material; if I had the material I would make it myself. 2652. If you were to contract to make me a car here, what would you understand by that? I would 2653. Would you prepare all the wood-work here? That would not come under the head of what you say. 2654. Will you describe what you call making it here? I consider it would be building it here. 2655. What process would you go about to make it? I would hire men and put them on to the work and complete it for you. 2656. From the raw material? Yes, if I could not do better. 2657. Mr. Poole.] Did you receive any request from Mr. Carson Woods to attend this Committee? No. 2658. How did you know you were wanted here? I got a summons to come here; I think Mr. Stephen Jones signed it. Mr. William Henry Burgess called in and examined:-Mr. W. H. 2659. Chairman.] What is your occupation? I am a carpenter and truck-builder. Burgess. 2660. By whom are you now employed? By Mr. Batchelder, for Carson Woods & Co. 30 Sept., 1884. 2662. What are you employed upon? Building dump-cars, the Americans call them. 2663. At so much a-piece? Yes. 2664. How much are you getting? £5 each. 2665. Have you been getting that all along? 2666. Are you a mechanic? Yes. Yes, I was the first that started at it: I and three others. 2667. Where were you employed previously? At T. Wearne's; at Moyes & Donald's at Newcastle; and at Glassen's. I have worked on all general rolling stock, going on ten years, except first and second class 2668. As a carpenter? As a carpenter and truck-builder. 2669. Have you anything to do with the iron-work? I am putting the iron-work in.
2670. I mean with regard to manufacturing the iron-work? No, that is not in my line; but still I know a bit of iron when I see it. 2671. What is the size of the timber on this car? The timber of the sole-bars and the head-stocks is what is called 5-inch stuff— $12\frac{1}{2}$ by $4\frac{3}{4}$ inches; the stringers are longitudinal— $8\frac{3}{4}$ by $4\frac{3}{4}$. 2672. Have you examined the way in which the buffers are attached to the head-stock? Yes. 2673. Is there any difference between the way they are attached on this car and on the ordinary rolling stock? Yes. 2674. What is the difference? On these cars it is fixed in a far better style; it goes right through, whereas the others are let in with a mortice; these go right through without any mortice. 2675. Is there anything at the back of the buffer to resist the strain? No. 2676. Is there anything on the other rolling stock? Yes, there is a set of iron braces on the ordinary rolling stock; but they are merely to hold the diagonals; as there are no diagonals in the dump-car the stringers go right fore and aft.
2677. What are these diagonals placed there for in ordinary rolling stock? To try and strengthen it; they have no longitudinals going right through; but these longitudinals are stronger, I think.

2678. Mr. Poole. You are putting these trucks together for Carson Woods & Co.? Yes, I am working for them. 2679. Under contract? Yes. 2680. And you get £5 for each car? Yes.
2681. What do you do for that? We fit and put them together, clean out the mortices, and different other things; in fact I have to use all the tools I would use in any other shop. We fit, mortice, saw, plane, and bore.

2682. You take the imported material, wood and iron, and put it together, cleaning out the mortices and easing the shoulders of the tenons, as the case may be; and you put a truck together, and get £5 for it? Yes.

2683. Are there 200 sets of materials imported, sufficient to make 200 trucks? Yes.

2683. Are there 200 sets of materials imported, suncient to make 200 trucks? I es.
2684. You take a set of material of each kind and you put that together to form one truck? Yes.
2685. And for that Carson Woods & Co. pay you £5? Yes.
2686. That comprises the whole of the building done in this country? Yes.
2687. You, as you say, build the car; that is, you take the various pieces of material—timber and iron, chains, wheels, axles, and all the rest—and you put it together and bolt it up, and put the truck on the road for £5? Yes; but we do more work than what you are stating.
2689. What else? There is a lot of boring to do, a lot of sawing, and a lot of planing.
2689. Whatever you do is comprised and paid for in the sum of £5? Yes, £5 a car.
2690.

2690. And there is no other labour of any kind on that car except what you do? Mr. Woods has other. Mr. W. H labourers there is no other habour of any kind on that car except what you do? But. Woods has other labourers there that carry the heavy timbers and such like.

2691. They are not employed in the building of the car? No, we do that for £5.

2692. Mr. Sutherland. Were you not building these cars at first for £4? No, we contracted for twenty-five of them at £5 each; what other men are getting I know nothing about.

2693. There are other men working there? Yes, between thirty and forty.

2694. You have only four in your party? Yes, we work four in our party; we started with four men and a boy, but the boy has not been with us for the last few days.

2695. Were you the first men that were working there putting these cars together? Yes, we built the first.

2695. Were you the first men that were working there putting these cars together? Yes, we built the first. 2696. What you mean by building is simply putting them together and setting them up ready for the road? If I was working in any other shop I would not have more work to do on any car. 2697. Has not the whole of the tenoning been done before they came here? Yes, by machines. 2698. Has not the whole of the mortising been done by machinery? Yes, but we have to fix them just

the same.

2699. Has the whole of the planing been done that is necessary to be done on all that part that is mortised and tenoned? Yes; the same as the head-stocks and sole-bars.

2700. Everything is planed and squared up, mortised, and tenoned, before it comes here? Not every-

thing; the floor is rough from the machine—we have to cut and fit it.

2701. You say it is rough from the machine—the flooring for the bottom of the trucks—and you have to cut and fit it here? Yes, and bore the different holes that are required.

2702. Mr. Wright.] You have had some considerable experience in the manufacture of railway rolling stock for the Government? Yes.

2703. What is your opinion of these cars—the workmanship, as far as strength is concerned? My opinion is that the dumping is an excellent idea.

2704. I am asking your impression of the strength of the material and workmanship of the dump-car, say as against the ordinary rolling stock we have in use? I think the way in which the dump-car is trussed is stronger than anything we have, and the longitudinals running fore and aft are quite as good as the diagonals in the other trucks. They are bolted securely together with three strong bolts underneath.

2705. Mr. Sutherland.] You say these dump-cars are better trussed than ours? Yes, most undoubtedly. 2706. Mr. Wright.] I gather from your answers that in your opinion the dump-cars you are now employed upon are stronger and more durable than the trucks now in use? I would not say that as far as the timber is concerned, but I believe the dump-car has more strength and will carry more weight on account of these trusses.

2707. What kind of wood is used in these dump-cars? American oak and pitch pine. 2708. From your experience is the wood good? The very best—I never saw better.

2709. Are there any attachments about the dump-car that you think weak or likely to break? No; the iron-work is of very good quality; the bolts are particularly good—we have never been able to break a bolt since I have been there, and we have most powerful spanners.

2710. There is no central draw-bar in these cars like we have in our ordinary rolling stock? Yes.

2711. Not a continuous one? No.
2712. Do you consider that with a train of (say) fifteen trucks there is any danger of the head stock being pulled off by the draw-bar? No, it is morally impossible.
2713. Is it physically impossible? It is physically and merally impossible, even if there were forty

2714. I understood you to say that you consider the longitudinal trussing of this car superior to that adopted in our ordinary trucks? Yes, most decidedly. There are four of these truss-rods in the dump-car; in our G car there are only two truss-rods, and they are not actually under the car: 2715. If you were ordering cars for your own use would you take the dump-car or the ordinary cars? I

would take the dump-car in preference to anything you have got.

2716. That is if you were personally concerned you would take these cars in preference to our own? I would indeed.

2717. And that is your opinion as a mechanic, after considerable experience of our stock? Yes; I have been on all sorts of work except first and second class passenger carriages.

2718. You have some knowledge of iron-work, I presume? Yes.

2719. Do you consider the iron-work on these trucks strong enough to do the work proposed for it to do?

Yes; the whole of it is of the very best quality.

2720. Is the iron-work strong enough to bear the strain it is proposed to put on it—to carry 20 tons? I think so. They are 13th I think, all sound, and of a very fine quality of iron; we have never been able to strip a bolt or to break one since I have been there.

2721. Do you consider the frame of the body of the car strong enough to stand a load of 20 tons in general use? Yes, I should think so. Of course I do not profess to be a judge, but I should think they will carry 20 tons; the trusses will carry it and more; in my opinion they will carry it.

2722. Do you know anything about the axles? No, I could not give an opinion about the axles; the

iron appears to be good.

2723. Have you examined the bogies? Yes.
2724. Is the workmanship good—the wood-work? Yes, very good.
2725. What is the wood? American oak.

2726. What is the wood? American oak. 2726. Is the iron-work good? Yes it app. 2727. What is the control of the Yes it appears to be of first-class quality.

2727. What is the general workmanship about the sample car;—do you consider the work good, bad, or indifferent? I think the work is all of good quality.

2728. Is it rough? It is not like what you see in a first-class carriage; first-class work has to be sand-papered and all that; that is not done in these cars.
2729. As to the question of building, what do you mean by the word "build"? To make them—to put

2730. If I asked you to build me a weatherboard house, what would you understand me to mean? I should understand you to mean that I was to erect it—to put it up.

2731. To work the raw material into its place? No, not the raw material. If I am building a house,

and I get my architraves and other material ready prepared, and put them in their places, I am a builder.

Mr. W. H. Burgess.

2732. If I asked you to build me a carriage or a cart here, what would you understand by that? Simply that I should make you a cart—that I should go and buy the materials; naves for instance, I could not

make them; spokes to make the wheels, and so on.
2733. You would not import the cart in frame, would you. I understood you to answer Mr. Sutherland to this effect, that the materials of these dump-cars were imported roughly in frame? Yes.

2734. In these dump-cars I presume that every part is interchangeable—the head-stock, for instance, will do for any car? Yes.

2735. And so in the frames—the parts are interchangeable? Yes.

WEDNESDAY, 1 OCTOBER, 1884.

Present:-

Mr. CHAPMAN, Mr. POOLE,

MR. SUTHERLAND, Mr. WRIGHT.

SYDNEY SMITH, Esq., IN THE CHAIR.

Mr. John Hough called in and examined:

Mr. J. Hough. 2736. Chairman.] What is your occupation?

2736. Chairman.] What is your occupation? Carriage-builder. 2737. By whom are you employed? By Mr. Carson Woods. I served my time with the London and

1 Oct., 1884.; North-western Railway Company.
2738. What are you doing now? Building cars.
2739. What kind of cars? Dump-cars.

2740. Have you a contract to build them?

2741. What price are you getting? That is a matter of private interest. 2742. The Committee wish to know? We are getting £5 a car.

2743. How long have you been carriage-building? I have been carriage-building for sixteen years. 2744. Where—in this Colony? No, not all the time. I served my time at home.

2745. Were you employed carriage-building before you came to this Colony? Yes, for eleven years. I have been in the Colony five years.

2746. Do I understand that as a carriage-builder you have been employed in the manufacture of rolling-

stock of all descriptions? Yes.

2747. What class of stock have you been engaged on? I have been engaged in building all kinds, from

coal trucks up to a dining-saloon; that includes them all. 2748. Have you noticed any difference between the construction of the body of the dump-car and the construction of our ordinary rolling-stock; the D trucks, for instance, or G trucks? The dump-cars

have no diagonals, the D trucks have.

2749. Do you consider that an improvement? In the dump-car the diagonals are not required.
2750. Why are they not required? Because the inside stringers go from end to end.
2751. How are the buffers attached to the head-stocks? By bolts right through the head-stock to hold the buffers.

2752. Do you think they are strong enough to resist a sharp strain? Certainly, just as strong as the ordinary D truck buffer.

2753. Have you noticed whether there is continuous draw-gear? No, there is not continuous draw-gear on this dump-car. You mean a draw-bar; no there is not a continuous draw-bar. 2754. You are speaking of the cars now being imported? Yes.

2754. You are speaking of the cars now being imported? Yes.

2755. Do you not consider it would be an improvement if there was a continuous draw-bar? No, I do not see that it would. You have no continuous draw-bar on the D trucks.

2756. What weight do they carry? From 5 to 7 tons.

2757. What weight do they day to the day of the cars of the continuous draw-bar on the D trucks.

2757. What weight do these dump-cars carry? I have never been told exactly what weight they are intended to carry, but I understand it is from 20 to 25 tons.

2758. Do you think the extra weight makes any difference to the safety of the draw-gear? depends upon the brakeman.

2759. What is the size of the timber of the head-stock? $12\frac{1}{2}$ inches deep by $4\frac{3}{4}$ inches. Originally they were 5 inches; when they went into the mill they were 5 inches, but when they came out the planing and dressing reduced them to $4\frac{3}{4}$ inches.

2760. What mill? I think it was in America.

2761. Have you examined minutely the way in which the body of the car is attached to the bogic frame?

There is a king-bolt in the centre keyed at both ends.

2762. Do you consider there is any danger of the body of the truck becoming detached from the bogie in a sharp shunt? No, that is impossible; it cannot be done without the bogie being knocked to pieces.

2763. Supposing the king-bolt were to break? Then the body of the truck would not come off.

2764. Would there be any likelihood of its jumping out of the socket? No.

2765. By building do I understand that you are merely putting the cars together? We are doing more

than putting them together.

2766. Most of the material has been imported from America? As far as I know all the material has been imported from America, but we have a lot of work to do on that material to make it fit into its place before we can build the car. We have a lot of tools to use, just the same as in any other shop in the

country.
2767. The £5 you get is supposed to include all the work you refer to now? Yes.
2768. Do the Committee understand that all the material is imported to the Colony, and you make it up here and fit it in some places? Yes, we fit it in some places.

2769. Is not most of the timber imported in such a shape that you can put it in ready prepared? Most

of it is imported ready prepared.

2770. Have you had any experience in iron-work? No, I have not had much experience in iron-work, only when I have had to put it in carriages or anything like that.

2771.

Mr. J. Fletcher.

1 Oct., 1884.

2771. Have you had practical experience that will enable you to give a definite opinion as regards the Mr. J. Hough. I have had experience of bolts and nuts and the like of that, but as regards castings 1 Oct., 1884. quality of the iron? and heavy iron-work I have had none.

2772. Mr. Poole.] You have been carriage-building at Hudson Brothers? Yes. 2773. Did you make trucks and waggons under contract? Yes.

2774. Did Hudson Brothers find you all the timber, the forgings, the castings, and all ready to be put into

place? Yes.

2775. And having these materials furnished to you you put them together so as to form a truck? Yes.

2776. And that is exactly what you are doing now? Yes, exactly.

2777. With the exception of easing a few pieces of timber together here and there, and sawing a board here and there—easing the timbers where the hinges and other iron-work is fitted—with these exceptions

it is all prepared to your hand? No, it is not prepared to our hand with those exceptions.

2778. Will you explain to the Committee what is not prepared? We have a lot of holes to bore — 2779: To receive the iron-work? To receive the iron-work; and we have all the floor-boards to cut; we have to manufacture our own ends of the trucks and bore out the holes for that.

2780. But taking a connected view of the whole subject, the whole of the labour necessary to, as you say, build the trucks, is comprised and paid for in the sum of £5? Yes, that is what we receive to commence and finish a truck.

2781. You have had considerable experience as a carpenter? No. 2782. What then? A carriage-builder.

2783. You have had considerable experience as a carriage-builder;—have you given any attention to the

qualities of the various kinds of wood? Yes.

2784. What in your opinion is the durability of the timber used in these dump-cars—the American 2784. What in your opinion is the aurability of the similar ascallant and the same with the timber that you used to put together for truck purposes at Hudson Brothers;—will it last longer or shorter, in your opinion, under the same kind of treatment? I should like a sample

truck from Hudson Brothers to compare it by.
2785. You have been building there for years? You must remember these are different-sized trucks

The head-stocks are.

altogether; the timbers put into Hudson Brothers' trucks could not be put into these.

2786. Take the head-stocks and stringers;—are they of American oak? 2787. What are the stringers? Pitch pine.

2788. Have you had any experience of pitch pine? Yes.
2789. How long will it last;—will it last as long as Oregon pine? I am hardly prepared to answer that

question.
2790. When it gets dry does it not get very short in the grain? It just depends upon what part of the tree it is cut from. Pitch pine and Oregon pine are two of the best timbers you can get for cars of this length, and one will last just as long as the other, because they are both of the same nature of wood. 2791. You think, then, that pitch pine, taking it all in all, can be compared favourably with Oregon for durability and elasticity? Yes.

Mr. James Fletcher called in and examined:-

2792. Chairman.] What is your occupation? Carriage builder.
2793. By whom are you employed? By Carson Woods & Co.
2794. What work are you doing for Carson Woods? Making dump-waggons.

2795. How long have you been engaged in the manufacture of rolling stock? Sixteen years. 2796. Where? In England; and four years in this Colony.

2797. Where have you been employed in this Colony? I was eight months in Victoria and four years at Hudson Brothers.

2798. Have you got a contract to make these dump-cars in the Colony? Yes.
2799. What price are you getting for them? £5 each.
2800. Does that include all the work in connection with putting them together? Making them complete.
2801. Are all the materials imported? No, not all the materials.
2802. What materials are not imported? Screws and bolts.

2803. What else? Nails.

2804. What else? Some of the timber.

2805.What timber? Flooring

2806. What do you think would be the value of the screws, bolts, nuts, nails, and timber not imported, per truck? About £3. 2807. Is all the other material imported except these? I cannot tell where it comes from.

2808. Have you reason to believe it is imported, or have you reason to believe it is made in the Colony? There is some made in the Colony, that I know. 2809. What is made in the Colony? Bolts.

2810. Anything in addition to what you have already stated? The floor plates are all made in the Colony, and the hooks for the levers.

2811. How is the buffer attached to the head-stock? It is bolted on.
2812. Is it attached in a different way from the way it is attached to our ordinary rolling stock? Yes, it is different from the D trucks for instance.

2813. What is the difference? The heads are let into the D trucks; these are solid.

2814. Is there anything to resist the blow in the D trucks that is not in the dump-car? I do not think there is.

2815. Are there not diagonals in the D trucks? Yes. 2816. Are there any in the dump-car? No. 2817. What kind of timber is used in the dump-car?

American oak and pitch pine.

2818. Have you had experience regarding the durability of American timber compared with our Colonial timber? I have had experience of American timber at home; American oak is used in England and in France for waggons and rolling stock generally, 2819. Do you think it is as durable as our Colonial wood? Yes, I think so.

2820. Mr. Poole.] Do they use pitch pine in England on the under frames of carriages? Yes. 1043— \dot{M}

J. Fletcher.

2821. In what position? Longitudinal sole-bars.

2822. In the same position as you are using the pitch pine stringers here? Yes, in some of the same positions.

2823. For what kind of rolling stock do they use it? Under carriages and waggons.

2824. What kind of waggons?

2825. Mineral trucks? Yes.

2826. What weight do these trucks carry—the English rolling stock, where they use pitch pine stringers? From 10 to 15 tons.

2827. Are they dumping-cars? No.

2828. Speaking of material that is not imported, you mentioned screws, bolts, and nails;—are these made at the Atlas Works, where you are putting new carriages together? The bolts are made at the Atlas Works, and the screws and nails are bought.

2829. What bolts are being made at the Atlas Works? Bolts 14 inches long for the bogies.

2830. What part of the bogie? To go through where the lap is on to take the link for the dumping.
2831. For the stud? Yes.
2832. That holds the cast-iron plate on to the bogie frame? It is a stud sticking out that is bolted right through the truck.

2833. What is the diameter of the bolt used? Three quarters of an inch.

2834. And with the exception of these trifling matters all the rest of the material is ready to your hand? No.

2835. What is not? We have the ends to make, holes to bore, the sills to cut out for the levers, mortices to clean out and make, and the tenons to make and ease.

2836. All this putting together of the cars, and all the slight alterations you have to make in easing the pieces together are covered by the sum of £5, as the price of each car? Yes.
2837. Mr. Wright.] Did you come here under engagement to work for anybody in the Colony? No, I came out through a letter coming to me.
2838. Who was the letter from? Mr. Chambers.

2838. Who was the letter from? Mr. Chambers. 2839. Who is Mr. Chambers? He used to be foreman at Hudson Brothers.

2840. Did he ask you to come out to work for Hudson Brothers?

2841. Your experience is English previous to coming here? 2842. Have you seen the dump-cars? Yes.

2843. Are you engaged working at them now? Yes.
2344. Will you kindly look at that plan;—do you consider that framing as strong as the framing used in our own rolling stock in this Colony? Yes.
2845. Do you consider it stronger? I consider the head-stock is stronger.

2846. Do you consider it as a whole as strong as our ordinary rolling stock? Yes.
2847. Do you think there is any danger of the head-stock being pulled off—suppose there were a train of twenty of these trucks, the first truck would have to bear the weight of the whole number—do you think there would be any danger of the head-stock being pulled off? No, the four tension rods will be sufficiently strong to prevent any danger of the head-stock being drawn off.

2848. Is that the way the buffers are fixed upon the head-stock, as shown on that drawing? Yes. 2849. Do you think, from your knowledge of railway rolling stock, that there is any danger of that head-stock being broken by rough shunting? No.

2850. In our Colonial rolling stock we have diagonal struts? Yes.

2851. Do you think diagonal struts add very much to the strength of the cars? I do not think so, because there is a lot cut away which makes the timber very weak. 2852. So that there is increase of weight without adding much to the strength? Yes.

2853. And you think these head-stocks are sufficiently strong, without angle pieces, to stand ordinary work? Yes.

2854. Have you had any experience of American timbers? Yes.
2855. What are these dump-cars made of? Pitch pine and oak.
2856. What material is used in England for similar purposes? Oak and pitch-pine.

2857. So that the frame of this car is made of exactly the same material as what they make English rolling stock of? Yes.

2858. Do you think, from your general knowledge of railway rolling-stock, that these cars are sufficiently strong to carry the weight marked upon them—40,000 lbs.? Yes.

2859. Do you think the cars are sufficiently strong to carry that weight under all the circumstances of our traffic, shunting and running and everything else? Yes, I consider they are strong to carry it. 2860. Did you notice the way the bogies are constructed? Yes. 2861. Do you think they are strong enough for the work? Yes, they are very good bogies, I think. 2862. This bogie is much more simple in design than English bogies? Yes. 2863. Do you think there is much difference between the weight of this bogie and the bogies under our ordinary rolling stock? This would be a lighter one.

2864. Then I understand that you, a mechanic of sixteen years standing, express an opinion that this car is strong enough to do all the work it is proposed to do? Yes.

2865. Mr. Chapman.] Do you know anything of our railway traffic? I have travelled from here to Melbourne.

2866. Mr. Poole.] You say you consider the head-stock of the dump-car stronger than the head-stock in use on our ordinary rolling stock? Yes.

2867. What weight do the cars you are contrasting it with carry? I am contrasting it with the D truck. 2868. How much does the D truck carry? 7 tons. 2869. And this car about twenty. Do you think, looking at the weight it is to carry, this is a stronger headstock? Yes, it is stronger built.

2870. I mean compared with the weight the cars have to carry. This has to carry 20 tons, and the D truck, you say, 7 tons—I think generally they are marked at 6? Some 6, some 6½, and some 7 tons. 2871. Is this three times as strong a head-stock as that in use on the D trucks? I consider this head-This has to carry 20 tons, and the D stock will pull three times as much the way it is built.

2872. What is the size of the head-stock on the D trucks? 10 inches by 4.

2873. What is the size of this head-stock? $12\frac{1}{2}$ inches by $4\frac{3}{4}$.

2874. So that the cross sectional area of the head-stock of the D truck is 40 inches, and of this one about 56 inches—that is an increase of 16 inches in the cross section. You think that makes this head-stock stronger in relation to the weight it has to carry than the head-stock on our D truck? Yes; this is not cut away the same as the head-stock of the D truck is; the head-stock of the D truck is cut away by a diagonal, and these bolts are let in; the four tension rods I consider help the draw-gear.

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2875. You answered Mr. Wright that you considered the head-stock on this car stronger than the head-stock on the D truck—I asked you did you consider the difference in the weight this car has to do with, compared with the weight carried by the D truck? Yes.

2876. What I want to call your attention to is the difference in the weight the two trucks have to carry —that this truck has to carry 20 tons and to stand all the thrust of shunting consequent on that weight. Do you consider this head-stock is stronger proportionately than the head-stock in use on our D truck that only has to carry 7 tons? I consider this head-stock is sufficient to carry the weight.

2877. I ask if you intend the Committee to understand that you give your answer deliberately in relation to the weight this truck has to carry compared with the weight the D truck has to carry? I understood Mr. Wright to ask me the difference between the two head-stocks, and I say I think that is a stronger

head-stock than the head-stock of the D truck.

2878. On the English railways are there any trucks built to carry 20 tons? Yes. 2879. What kind? Long trucks.

2880. Are they double-bogie trucks? 2881. Do you know our G trucks here? Yes.

2882. Are they framed and put together similar to our G trucks? Yes.

2883. The G truck we have here is very similar to the trucks you have alluded to as carrying 20 tons on English railways? Yes, to some of them.

2884. You say the bogie-frame in the dump-car is much simpler than the bogie-frame in use here—In what way is it simpler? The big iron plate that goes all round the G truck is not on this, and where this carries the brake it is a deal simpler than on the G truck.

2885. And you consider that on our G trucks there is unnecessary weight without any benefit to their strength and durability? Yes, it only carries the brake.

2886. Mr. Wright.] Pursuing Mr. Poole's question about this head-stock, do you consider the head-stock

in use on our ordinary rolling stock bigger than it need be? It is the ordinary size.

2887. Do you think a smaller head-stock would answer the same purpose? No, I do not think so.

2888. These long trucks you speak of, are they built of the same material as this truck is built of? Yes.

2889. And about the same size of material? Pretty near; the head-stock and the outside frame are about the same.

2890. Are our Colonial trucks of any sort as strongly built as this—have they got these four truss-rods?

2891. What truss-rods have they? The G truck has a truss-rod on outside but not to end of truck.
2892. Supposing a longitudinal frame were put on to this truck, and a longitudinal frame were put on the

2892. Supposing a longitudinal frame were put on to this truck, and a longitudinal frame were put on the G truck, which would you think would be the first to sever apart longitudinally? The G. 2893. Why do you think that? The longitudinals are in one length in this—in the G truck they are not. 2894. And the G truck would come in two, while this would remain intact? Yes. 2895. Mr. Poole.] The application of the power is very different on the G truck from what it is on this, is it not, owing to the difference in the draw-gear? The G truck has a longitudinal draw-bar. 2896. And that means continuous draw-gear right through the truck? Still this has one too. 2897. The whole strain is thrown on to these stringers by this draw-gear, and on our trucks it is transmitted right through the central draw-bar? Yes.

2898. But in this case the whole pull of the engine is thrown on to these stringers? No, on to the trussrods and the springs at the bars.

Mr. Charles Paul called in and examined:-

2899. Chairman.] What is your position? I am Railway Station-master at Darling Harbour. 2900. Were you present at a trial of a dump-car some time ago? Yes, on one occasion, some Yes, on one occasion, some consider-

able time ago.

2901. Will you favour the Committee with your opinion upon its adaptability for the purpose, after having seen it tried? I had instructions to load it for trial; getting nothing definite we loaded it with long billet-wood, which I consider was not fit for dumping; it might have done well enough for hauling, but downing it with the sides on with long billet wood. I do not consider was a fair test at all. When it but dumping it with the sides on with long billet-wood I do not consider was a fair test at all. was dumped the wood caught in the sides, and only a portion of it went out. Another thing was, that there was no elevated road to dump it on, and therefore I did not consider it a fair trial.

2902. Were you present at any other test? That was the only test that day; there was another test

some time after.

some time after.

2903. Did you see it? I did not see it turned out, but I was on the ground soon after. They could not dump it all out in one place, because the road was not elevated. There is no doubt at all in my mind that if there had been sufficient space it would have come out right enough.

2904. What took place at the first test you were at? That was with the wood.

2905. How many billets came out? I should not like to say how many; a number of them fell out. We put nearly three trucks of wood into it, and all the top wood went right off, but, being long wood, nearly all the rest got jammed in between the doors and the top rail.

2906. What weight fell off? We put about 14 tons on it, and, speaking as near as I can, I should think from 3 to 4 tons fell off; all the top part of the load went off, and some fell through the doors.

from 3 to 4 tons fell off; all the top part of the load went off, and some fell through the doors.

2907. How did you unload the balance? We loaded it up into other trucks again. Through the wood getting jammed between the door and the ground, through the door being fastened, it was difficult to get it out.

2908. In the test you were present at with ashes --? I was not present at the time it was done;

I was there just after; I saw the ashes that had been dumped.

2909. Were you asked for an opinion as to the suitability of this truck for our lines? No. I admit that at the time when it did not dump the wood out, in general conversation I said that with the sides on it would be useless for that kind of work, because the wood could not get out. 2910.

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Mr. C. Paul. 2910. You have had a good deal of experience at Darling Harbour with the wood traffic? Yes.

2911. Do you think it possible to dump wood, billet-wood, &c., on the road as at present laid down at Darling Harbour, without raising them? It could be dumped, but the sides of the car would have to be left off

2912. Supposing the sides to be left off, do you think it could be satisfactorily dumped then? It could be done, but it would have to be done in two places, which would take up the length of two cars; that would take up too much space, but if the roads were elevated we could use them properly. No doubt that would cost the Department a great deal of money.*

2913. Are not the consignees supposed to unload billet-wood? They are allowed twelve hours to do it; but it does not suit the Department to let it remain so long in the trucks—to keep the trucks going we have very often to unload it ourselves.

2914. Do you think it would be a convenience to consignees to have such large consignments of wood—20 tons in one truck? They could not get 20 tons into them.
2915. Supposing they could? As far as my experience goes such large loads would not be suitable for

many of them; for large buyers they would.

2916. Speaking generally of the class of buyers at Darling Harbour every morning, do you not think it would create a monopoly in the hands of a few if the Department insisted on carrying such large loads? It might do; I would not like to express an opinion.

2917. Is all the wood sold by auction at Darling Harbour? Not all of it.
2918. The principal part of it? The principal part of it is.
2919. Mr. Wright.] From what you saw of the dump-car, are you under the impression that it could be used satisfactorily for our traffic? Do you mean for ordinary traffic?
2920. For any special purpose or for ordinary traffic? I certainly think we could use it the same as our

ordinary trucks.

2921. Mr. Chapman.] Without dumping? Yes; there is a great deal of traffic at the present time that it would be suitable for; I wish we had them in use now—we are in want of trucks.

2922. Mr. Wright.] In loading and unloading firewood does it matter whether you have a door on the

truck or not? Not if we were using it as an ordinary truck.
2923. If it were used as an ordinary truck the wood would all have to be pitched out by hand as it is now? Yes.

2924. I understand you that if these sides were fixed it would do very satisfactorily for loading and unloading wood? Yes, the same as our present cars without dumping.
2925. What other classes of traffic would the dump-car be suitable for with the dumping? It would be first rate for the gravel traffic from Emu Plains, which is very heavy, about 4,000 tons a month. We use a good deal of gravel ourselves for making up the Redfern and Eveleigh yards, and it would answer very well to dump that but not many private records who had to cart it away would care to have it dumped well to dump that, but not many private people who had to cart it away would care to have it dumped,

because they would have to shovel it up off the ground.
2926. Nearly all the gravel thrown into the Redfern yard, I think, is thrown on to the ground? Yes, they

could dump it all out there; they could dump half and move the train along and dump the other half.

2927. If you had 200 of these cars in use would they facilitate the traffic? Yes, for that class of traffic, because they carry such a lot. For instance, our D truck will carry 6 tons, and in these we could put 20 tons. Of course that would be a saving of trucks and would give us more yard room, as well as be a great saving in running dead weight over the lines. Then there is the coal traffic; I certainly think these cars would be a great advantage in the coal traffic. We have about 400 tons a trock from Newcostle and in the busy time of the year it is a very serious matter to provide trucks. tons a week from Newcastle, and in the busy time of the year it is a very serious matter to provide trucks for this traffic. If we had these dump-cars in use we could put 24 tons in each of them to go to Redfern, besides the coal we send to all the different branch lines.

2928. Chairman.] Would you use them fixed or dumping? Either way.
2929. Unless you had an elevated road you could not dump them? I stated that we could dump them on the level sidings by dumping half in one place and then moving the cars and dumping the rest.

2930. Mr. Wright.] If you had a raised road you could use these cars to very great advantage? Yes, most decidedly. The want of a raised road is the difficulty. As I said, the place where the car was tested was not a suitable one.

2931. If these dump-cars were used, for instance, in carrying coal from Lithgow, would they, in your opinion, be satisfactory for use to take goods back up the country? Yes, because they are equal to our G trucks for general use. I think they would be very useful for general mercantile traffic—tea, sugar, and so on.

2932. Is it not a fact that, owing to all our present rolling stock having to be unloaded by hand, we require a much larger number of trucks than we would otherwise want; if we could dump out coal, gravel, and other matters of that kind, could we not do with less rolling stock than we have now? at all our suburban stations, if there were suitable places for unloading, one man could do as much as four or five throwing the stuff out by hand; at such stations as Newtown, Ashfield, Petersham, if we had raised roads, one man could do as much as four at the very least, or perhaps half a dozen; and it would be a great saving of rolling stock, and also a saving in time.

2933. Have you noticed the springs in use in the dump-car? Yes.

2934. I suppose you have also noticed the springs in use in our own trucks? Yes.

2935. Has there been any damage done to the springs of our stock in shunting? Yes, there always has been a good deal.

:2936. Do you think the springs under the dump-car are liable to the same damage? I do not think so; I saw one loaded with 24 tons, and it made only half an inch impression.

2937. Do you think the dump-car springs are better for load-carrying springs than those in use on our stock? Yes, they are not so liable to be broken.

2938. And they are much lighter, are they not? Yes; for the weight they carry I never saw any spring like it; it is far lighter than the spring on our G truck.
2939. Do you think the porters and persons employed about the railways would have any difficulty in dumping these cars? No; I have been trying them myself a bit; I have not dumped them with a load, but I should think there would be no difficulty in any one dumping them, as far as my judgment goes.

^{*} NOTE (on revision):—I am not aware of having said anything about the cost. † Revised:—6 tons and 6 tons 10 cwt.

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2940. In sending out coal what trucks do you use now? We use D trucks to go to the mountains.

2941. What weight do they carry? They are not allowed to take more than 6 tons.

2942. What is the weight of the truck itself? They run 4 tons 19 cwt., 4 tons 15 cwt., 4 tons 16 cwt. 2943. And they are loaded with 6 tons? Yes.

2944. Do you know the weight of the dump-car? Yes. I would like to mention that some of the old D trucks are only 4 tons 10 cwt.

2945. Then we may say they run from 4 tons 10 cwt. to 4 tons 16 cwt? There are some only 4 tons 4 cwt., but not many of them. The new ones run 4 tons 15 cwt.
2946. And they are loaded with 6 tons? They are not all limited to that; some carry 6 tons, some 6 tons

10 cwt., and some 7 tons.
2947. What is the weight of the dump-car? About 9 tons 10 cwt.
2948. What does it carry? It is marked for 40,000 lbs. on the side.

2949. Do you think the dump-cars will carry 20 tons of coal?

2950. So that practically one dump-car will carry as much as three average D trucks? Yes.
2951. And will weigh considerably less than three D trucks? Yes.
2952. Of course the same remark will apply to gravel? They will carry more than that. The dump-car will carry the same number of bales of wool as the G truck.

2953. Do you think the adoption of these dump-cars would save much time at Darling Harbour? Certainly, because they will carry so much more than the ordinary trucks.

2954. Two of them do not occupy more space on the line than three D trucks? About three and a

quarter.
2955. And the two dump-cars would carry 40 tons, against 18 or 19 tons in the three D trucks? Yes, $19\frac{1}{2}$ tons.

2956. Two dump-cars will be the length of three D trucks and a quarter, and they will carry 40 tons

against (say) 20? Yes.

2957. You have stated that at the time the dump-car was tested with wood you condemned it? Yes, because there was a good deal of talk about it at the time, and when it did not turn the wood out as we thought it would I thought it was a mistake; but at the same time I knew it was not a fair trial, because it was not likely to send it out with the centre bar at the top; as it was constructed it was not a fair trial, and it was on level ground.

2958. Having condemned it at that time, why do you recommend it now? For general traffic I could not condemn it; in reality it is like one of our G trucks, so that I would have to condemn them too if I condemned this. For general traffic I could not condemn them; and as to the dumping I have since had time to look into and study the matter. I could see at the very commencement that if we had elevated roads it would make a great difference.

2959. Do I understand you to say that you approve of these cars for special traffic for coal, shale, gravel, and so on? Yes, and for ordinary traffic they are equal to our G trucks; I do not see any objections at all. 2960. The dump-car has the advantage of being lighter than the G truck, and carrying a bigger load? Yes, the G trucks run about 12 tons in weight—some a little over.

2961. And the dump-car is also marked to carry a larger load than the G truck? Yes, the G truck only carries 15 tons.

2962. Do you consider, from your knowledge of railway rolling stock and your past experience, that the dump-car is strong enough to carry the weight it is made to carry, 40,000 lbs.? I took very particular care in examining the wood-work and these long bars and the truss rods; the body of that truck I consider is strong enough to carry 24 tons; I have seen one loaded with 24 tons of iron, and it made very little impression on it. The wood is very strong, and the four truss rods go right through, with large washers and bolts. Our G truck has only two truss rods. The joists, I suppose they call them, in the dump-car are very thick and deep, so that the truck is really very strong, while the top work is light, but quite

strong enough in use.

2963. Then you think, as far as your knowledge goes, that these dump-cars are quite strong enough for the purpose for which they were designed? Yes.

the purpose for which they were designed? Yes. 2964. Will you kindly look at this sketch—that shows the framing of this truck; this is where the buffers are fixed;—do you consider that head-stock strong enough to resist the shock of shunting—that being $12\frac{1}{2}$ inches deep by $4\frac{3}{4}$ inches. You have had large experience of shunting at Darling Harbour, where there is more shunting than in any other yard in the Colony;—do you think there is any danger of that piece of wood being broken in any ordinary shunting? Not in any ordinary shunting, because there is such a short space between the supports. The space does not appear to me to be so wide on the car as is shown hore.

2965. At all events, having seen the dump-car, and having had large experience of shunting, you consider that head-stock strong enough to stand any ordinary shunting? Yes, ordinary shunting.

2966. Any shunting it is liable to be subjected to? Yes, I should think so. Of course there may be

rough knocking about, but for any ordinary shunting I should think that is strong enough. 2967. Mr. Poole.] You say you have 4,000 tons of gravel a month from Emu Plains? Yes, sometimes a little over, sometimes under; and we have about 3,000 tons of shale, sometimes about 2,000. 2968. You think the dump-cars are quite equal to the G trucks for ordinary traffic? Yes. 2969. What do you charge usually for loading and unloading? Wheat, and that kind of traffic, 1s. a ton,

and wood is.

2970. Do you conceive that for ordinary traffic purposes these cars are useful, seeing that the gates are top-hung;—are they as useful to load and unload as our ordinary trucks? With that exception, for miscellaneous traffic, and for shale, coal, and that kind of thing, they are.

2971. I am not speaking about unbreakable freight, but breakable freight—unbreakable, we will assume can be dumped out, but breakable freight, that you have to handle to load or unload it from your dock or cart on to the floor of the truck, you would have to hoist it over the gates? The gates are easily undone; there is no fastening in the bottom; you have only to undo the bolts.

2972. To take the gate away altogether? Yes, take it down; there is nothing to prevent that. In our G trucks there are four doors, and when you want to undo them you have to

G trucks there are four doors, and when you want to undo them you have to

2973. You can take the doors of these dump-cars off as quick as you can let down all the doors of the G

2974. And in that way you could utilize them for ordinary traffic? Certainly.

Mr.C. Paul. 2975. What is the weight of our new G truck? The last ones out are 11 tons 19 cwt. 2 qrs., and 12 tons; there are some over that. 1 Oct., 1884. 2976. And they carry how much? 15 tons.

2977. So that there is much greater tare in these trucks in relation to weight carried than in the dump- Υ es. cars?

2978. And so far as the facility for loading and unloading is concerned the dump-car will be in no way at a disadvantage for ordinary service? No, only with that little exception about the doors, and they could be easily taken down.

2979. Your experience of rolling stock is chiefly confined to Darling Harbour? , At Darling Harbour

and Redfern I have had twenty years' experience.

2980. Have you noticed the draw-gear of the dump-cars? Yes.

2981. Do you consider it equal in efficiency and non-liability to accident to that in use on our other rolling stock? I am not an engineer, and would not like to give an opinion about that.

2982. Mr. Chapman.] Do I understand you that it requires considerable alteration to make these dumpcars available for ordinary traffic? No, only just the doors.

2983. For instance, if you want to roll in sheets of lead or large stones? Heavy articles are always lifted by cranes; anything over what men can handle. We need only take the doors down, and the bolts are movable for that purpose.

2984. Will you not have to refit the doors the other way? No; only take it off. 2985. And leave it off? No; when the load is on the truck it can be put on again.

2986. Can you use the dumping at all to advantage unless you have elevated roads? We could use it for ballast for filling up purposes; such work as we are doing a lot of down there now; so much stuff could be thrown down in one place and so much in another; now the navvies have to throw it out of the trucks with shovels; if they had these cars they could dump a portion in one place and a portion in another.
2987. Have you not 200 ballast trucks now that are not being used? Not that I am aware of. We have

only a few ballast trucks.

2988. Mr. Sutherland.] Are there not a lot of them standing idle at Eveleigh? Are you speaking of the

trucks with patent couplings?

2989. Mr. Chapman.] What are these trucks that are fitted with the Cowdery-Thomas couplers? They are D trucks; there is only the difference in the coupling.

2990. What are they used for? We have been using a great number of them for wood. We used to run thirty-five of them, I think it was, for the wood traffic, and then the Ballasting Department got some

2991. Are the dump-cars of any service to you for dumping without elevated roads? Yes; as I said before, you could do it by moving the truck along—throwing out half and then moving along to deposit the other half.

2992. Would you not have occasion to send men with shovels to clear the rails? Not if you dump it in two places; if you dump the whole load in one place, on a level, you would have to do so.
2993. Then unless you have elevated roads the dump-cars would not be a success? Not without moving

the car along, that is for dumping purposes.

2994. Mr. Wright.] Is it not a fact that the bulk of your ballasting for what may be called the home circuit is carried in the ordinary A and D trucks? Yes, principally D trucks.
2995. These trucks are not provided with any drop hatches in the centre? I think there are only about half a dozen on the railway with a hole in the middle.
2996. So that all the ballast has to be shovelled in and shovelled out?

2997. They have to fill it by hand in either case? Yes.

2998. And they have to discharge it by hand by shovelling it out now? Yes.
2999. Whereas the dump-car would discharge it without shovelling? Yes.
3000. Mr. Sutherland.] Have you measured the length of these cars? Yes; it is 28 feet inside for

carrying.
3001. What is the length they stand on the rail? 31 feet to a few inches, from buffer to buffer.
3002. What is the length of the D truck measured in the same way? The D truck is 15 feet long inside; 3003. You have weighed these trucks? No, I have not weighed the dump-car.
3004. You gave us the exact weight? Yes, from what is painted on the side of them.

3005. Are you running the trucks fitted with the patent couplings for the ordinary traffic? Not all of

them; some of them.

3006. You said you were running a great number of them for wood and for other purposes? Yes, there

but not lately: they have been using them on the ballast trains were a good many of them run for wood, but not lately; they have been using them on the ballast trains and for locomotive coal and coal for Newtown, bricks for the bricklayers, and stone brought by water from Newcastle for the sidings. We have not used many of them for wood lately.

3007. Is there any reason why you are not using them for wood. They are lying idle in the yard. Is there any reason why you are not using them for all or any purposes you require trucks for? I do not know the reason why they are not using them all. I think a good many of them are loaded with stuff out there, and some are marked off for repairs

there, and some are marked off for repairs.

3008. They have been standing there for months and getting no repairs? I know we have not got any at our station that are not in use; in fact we load them every week for locomotive coal, and whenever we

our station that are not in use; in fact we load them every week for locomotive coal, and whenever we have any stone to go to the sidings we use them.

3009. We have it in evidence that there is no rolling-stock allowed to go on the railway without the authority of the Locomotive Engineer; has the Traffic Department ever received any authority from the Locomotive Engineer to use the trucks with the patent coupling? I could not say.

3010. Do you use any without that authority? I have used them, but I could not say whether the authority was given. I know they have been used.

3011. Are you sending ballast from Darling Harbour to Blacktown in them? Yes; I saw some of the patent coupler trucks being loaded with ballast this morning.

3012. For Blacktown? Yes, taking metal from Darling Harbour. They have been taking it away for these six months; they are reballasting the suburban line.

these six months; they are reballasting the suburban line.

Mr. A. Clark. 2 Oct., 1884.

THURSDAY, 2 OCTOBER, 1884.

Present:—

Mr. G. CAMPBELL, Mr. CHAPMAN,

Mr. POOLE Mr. WRIGHT,

Mr. SUTHERLAND.

SYDNEY SMITH, Esq., IN THE CHAIR.

Mr. Alexander Clark called in and examined:

3013. Chairman.] What is your occupation? Car-building. 3014. By whom are you employed? By Mr. Carson Woods. 3015. How long have you been in his employ? For about four weeks. 3016. What work are you engaged in? I am building dump-cars. 3017. Are you a mechanic? Yes. 3018. A carpenter? No, a car-builder.

3019. How long have you been engaged in that? I have had fourteen years experience of it. In 1867 I went to the Michigan Car Works.

3020. How long have you been in this Colony? Since the 27th February last.

3021. Then I presume you have had no experience of rolling stock on our Colonial Railways? No, not much. I started to work for Mr. Wearne about two weeks after landing here, to build the combination tram-cars, and I was engaged with him until the six combination tram-cars were finished.

3022. Have you built any D trucks? No; I do not know anything about them at all.
3023. Have you built any freight trucks? I have built a good deal of freight cars. Freight car-work was the work I was mostly engaged in in the United States for the Union, Pacific, Michigan, Central, Erie, and North Shore, and all the different lines in America.

3024. Is this dump-car built in the same way as the ordinary freight-cars in use in America? I never saw a dump-car in America.

3025. How long is it since you left the United States? I left in 1879.
3026. You have never seen any of these cars in use? No.
3027. Therefore you are unable to give the Committee any information about their suitability? I can talk as to the suitability of the cars, of course.

talk as to the suitability of the cars, of course.

3028. I mean their suitability for dumping purposes? Yes.

3029. Have you had experience with regard to their dumping? Yes.

3030. Where? Here. I have built about fifteen of them now.

3031. Have you seen any of them fully loaded and dumped? No. I have seen cars in America that opened in the centre, and some that opened in the bottom, with doors, but I never saw these cars.

3032. What are the cars you speak of used for in America? For coal, for dumping over a stage.

3033. These are drop-bottom waggons you are speaking of? Yes.

3034. Are the buffers of these drop-bottom waggons attached in the same way as on the dump-cars? No,

3034. Are the buffers of these drop-bottom waggons attached in the same way as on the dump-cars? No, that is quite a new thing to me; I never saw a buffer till I came here; they are all central draw-bars in America

3035. Mr. Wright.] What is the difference between the truck or bogic under the dump-car and those in general use in America? I do not see any difference.

3036. Are the trucks, as you call them in America, as strong as these bogies? Yes.

3037. Is the general design of the trucks or bogies in America the same as that of the bogies under the dump-cars? Yes.

3038. Are the bogies imported here as good in design, material, and workmanship as those in use in America? I know of none being imported.

America? I know of none being imported.

3039. Those you are working on, I mean? Yes, they are equal in every respect.

3040. Equal in strength and everything to those in common use in America? Yes, they are.

3041. Do you think these bogies are sufficiently strong to carry the weight of the car and 20 tons of loading besides. The cars are calculated to carry 40,000 fbs.? I expect they are. I do not know anything about that, or about their springs, but they tell me they have loaded 40 tons on a car.

3042. Chairman.] Do you mean this dump-car? Yes, they told me so.

3043. Mr. Wright.] Is the framing and timber of the dump-cars of the general size in ordinary use in America? Yes.

3044. Do you think the wood employed is as large in its different parts as for the common rolling stock in America? Yes, even larger; the dump-cars have 5-inch sills; there we only put 4 inches.

3045. Did you ever know in America cars that would carry 20 tons—any freight-cars—I am not speaking

of dump-cars? The weight of the Erie and North Shore car is from 18 to 20,000 lbs., I think, and it is supposed to carry double its own weight.

3046. Did you know of your own knowledge any cars in use in America which carried anything like the weight that this dump-car carries—twenty American tons, 40,000 lbs.? Yes.

3047. Are they in common use there? Yes.
3048. Are they built any stronger or of any heavier material than these dump-cars? No.

3049. You are a mechanic, I presume? Yes.

3050. Do you consider there is any danger of this car being pulled to pieces by the strain—any danger of the head-stock being pulled off? No, I do not see that it can.

3051. Supposing this car was run up a steep incline attached to an engine and with twenty other similar

loaded cars behind it, do you think there would be any danger then to the head-stock? No. 3052. You know that on English railways what are called continuous draw-bars are used? Yes. 3053. Do you think the attachment of continuous draw-bars to these cars would add much to their strength or safety? No.

3054. Can you tell me how the draw-gear is fastened in this car? You mean the link that comes out from the centre?

3055. What it is drawn by? By this and two other little ones that hold the first link the centre one is connected with a spiral spring with a washer and key. 3056. Mr. Poole.] At the back of the spring, I presume? Yes. 3057.

[Mr. A. Clark. 3057. Mr. Wright.] This is a plan of the framing of the truck. (Shown to witness. See separate Appendix 2.) This is the draw-gear; it is fastened, you say, by a spiral spring? Yes, this is the spiral spring; 2 Oct., 1884. a washer comes in here, and there is a little key.

3058. What I want you particularly to answer me about is this: Is this car next the engine, with twenty other loaded cars behind it, in any danger of the head-stock being pulled off or the draw-gear being pulled

off? No.
3059. You notice the position of the buffer? Yes.
3060. Do you think that with the rough usage in ordinary shunting that this car is likely to get—the

same as all other rolling stock gets—there is any danger of the head-stock breaking? No. 3061. This is not a question of haulage, it is a question of back motion. Suppose the engine is driven back to shunt it, do you think this cross-head sufficiently strong to stand any ordinary shock of that kind? Well, of course the space between the stringer and the outside sill is considerable; the buffer comes almost in the centre; but I do not consider there is any danger of the head-stock breaking.

3062. Is the frame of this car any larger or stronger than that of the cars in general use in America? It

is larger and stronger.

3063. It is in fact, as far as the frame is concerned, a model of all American rolling stock? Yes, of cars, as I said. I did not know anything of dump-cars in America.

3064. This frame is exactly the same as that in use in America? Yes, the frame is, only larger sills.

3065. Have you noticed the mechanism by which this car is dumped? Yes.
3066. Do you consider it secure under all circumstances to which rolling stock is liable—going round Yes. sharp curves or up or down steep grades—against self-dumping?

3067. In shunting, for instance, when it gets a hard knock from the engine running back against it, will there be any danger? No, I think not.

3068. There will be no danger of its self-dumping under any circumstances? No. 3069. Do I understand from you that the body of the dump-car and the trucks under it are identical in design and weight of material and workmanship with the rolling stock in use in America? Yes, they are, with some exceptions.

3070. Mr. Poole. You have already informed the Committee that your business is that of a car-builder, but you have had no experience in the management of rolling stock? Not in the Colony; I have had in the United States.

3071. You do not recollect with any degree of certainty what weight the American cars of this pattern carry? No.

3072. You do not know of your own absolute knowledge what weight this car is designed to carry? No. 3073. But in its general outline it is similar to trucks or cars of that class used in America? Yes.

3074. Mr. Wright asked you if you thought the head-stock was sufficiently strong to stand the thrust or the pull, whichever way the engine might be acting upon the car. Supposing there were twenty cars in a train loaded with what they profess to carry, their combined weight would amount to about 400 American tons;—do you consider that head-stock sufficient to stand the dead pull one way, or the thrust the other, with that enormous weight behind it? Yes.

3075. That is your deliberate opinion? Yes.

3076. Have you had any experience of the working of cars designed to carry these large weights on heavy inclines with sharp curves? 3077. None at all? No.

3078. Are you aware that on many of our principal railways the inclines are very steep and the curves exceedingly sharp? Yes.

3079. And taking a connected view of the whole mechanism of the car, do you think it is perfectly safe I know the cars in transit, under the circumstances I have named, on steep inclines and sharp curves? that are built in the United States, and these are just equally the same as them. The curves I know nothing about; it is not my business; but I know the cars I built have gone round the curves in

America; and as this car is the same it must go round the same curves.

3080. You are employed by Carson Woods & Co. in building these cars at Darling Harbour? Yes.

3081. What does the building consist of? We get the trucks, or bogies as you call them here, with the wheels attached; we have a certain amount of work to do on these before we can put the upper timbers on—the stringers or longitudinals; we have then to run them into our truck, and we start and build on that.

3082. Have you to forge all the iron-work and prepare all the timber? I do not know anything at all about the iron-work.

3083. You simply put it together? We build the car with the materials supplied to us.

3084. You can build it in the same way as you can build a house, if somebody finds you the bricks, and somebody else the floors, and somebody else the doors, the windows, and so on—you can put them together?

Yes, then we can build it.
3085. Does the building in the case of these cars consist in selecting from the stock of materials at Darling Harbour—we will not bother whether they are imported or not—the parts necessary to make up the truck, and putting them together? Yes, doing such work as may be necessary to make them complete.

3086. And for that you either occupy so many days or get a certain lump sum of money? Yes.

3087. As an old car-builder in America you know what the wheels used there are, whether iron or steel?

3088. What are they? They are iron.

3089. The wheels under these dump-cars are precisely the same class, are they not? Yes. 3090. Precisely the same kind of wheels as are used under American cars? Yes.

3090. Precisely the same kind of wheels as are used under American cars?
3091. And the axles are the same class, I presume? Yes.
3092. And the general framing throughout is the same? Yes. 3093. As to the peculiar machinery for dumping purposes, you do not care to give any opinion upon its adaptability or otherwise, do you? Yes; of course I have to see that the car dumps properly before I receive any money for it; and before we lay the flavor when the dumps properly.

3094. As far as your judgment goes, do you consider the dumping apparatus quite sufficient for the purpose for which it was designed? Yes, I do.

Mr. J. Nelson. 2 Oct., 1884.

3095. Mr. Wright.] Are wheels of this kind broken frequently in America or not? No, I never saw Mr. A. Clark. them broken. I have had occasion to repair cars of the North Shore Road in America. I took a contract to repair them all as they came in; we were building Erie and North Shore cars all the time. I had a book in which I made a note of all the cars as I built them, and took down the numbers; and all I saw the matter with the wheels were where they were the hards.

the matter with the wheels was where they were worn by the brake.

3096. Mr. Poole.] Worn into a flat? Yes; and that had to be taken off; but I never saw a broken wheel. We have taken these wheels off and broken them up, but I never saw a wheel broken in use.

3097. Mr. Wright.] I presume from that answer that a broken chilled cast-iron wheel is really a rarity in America? It is a great rarity in America for any of these wheels to come in broken.

Mr. John Nelson called in and examined:-

3098. Chairman.] What is your occupation? Railway carriage builder.
3099. Where are you employed? I am employed by Mr. Carson Woods.
3100. Have you had much experience in the Colonies? About eight years.
3101. What have you been principally doing? Rough work; and fine work in the Colonies.
3102. What class of rolling stock? Goods trucks.
3103. Have you made any of our D trucks? No; cattle and sheep trucks, horse-boxes, and brake-vans.
3104. You have not made any what are ordinarily termed freight trucks—D or G trucks? No.
3105. What is the difference in the size of the head-stock on the dump-car and the head-stock on the ordinary rolling stock you have been engaged in? That is a question I cannot answer. I think there ordinary rolling stock you have been engaged in? That is a question I cannot answer. is about an inch difference in the thickness as far as I can remember.

3106. What is the size of the head-stock in the dump-car? 5 inches thick and a foot deep.

3107. Do you know what it is in the D truck? I think it is 4 inches or $4\frac{1}{2}$ by 8; I forget now; I have

3107. Do you know what it is in the D truck? I think it is 4 inches or $4\frac{1}{2}$ by 8; 1 in not a good memory for figures or recollection of sizes.

3108. Mr. Wright.] How long have you been a car-builder? About seventeen years.

3109. In this Colony? Eight years in this Colony.

3110. Where have you worked? In Italy and England.

3111. Are you an Englishman? I am not.

3112. An Australian? I am not.

3113. From what country then? I am an American.
3114. Have you done any work, car-building, in America? Yes.
3115. What kind of work? Passenger cars.

3116. Have you been engaged in the manufacture of freight-cars? No, not in America.
3117. In any part of the world? No, except out here; I have had most of my experience with Mr. Ritchie, at Parramatta; I was with him for seven years.

3118. Are you a mechanic? I am.

3119. What trade? Railway carriage builder.

3120. What part, wood or iron work? The wood work.

3121. You have noticed American rolling stock, I presume? Yes.
3122. Have you noticed any particular difference between American rolling stock and this dump-car—I do not mean with reference to the dumping, but the general outline of the car? In my candid opinion I think these are a grand lot for strength and durability.

3123. Have you noticed any difference between the design of these cars, the size of the material and the material itself, from those in use in America? They are just the same. There are a good many running on different lines there; but there were very few when I left.

3124. I am not speaking of this as a dump-car but as an ordinary freight-car? Yes, they are just about

the same as this.

3125. As far as your memory serves you, is the material of the same size and strength? Yes. 3126. Do you know what is called the big G truck? Yes.

3127. Can you give me the size of the timber used in that? Not from memory.

3128. The head-stock of the dump-car is $12\frac{1}{2}$ by $4\frac{3}{4}$? I believe that is correct.

3129. Is that larger or smaller than the head-stock used in the big G truck? Larger.

3130. This is a plan showing the framing of the dump-car (sketch shown to witness—separate Appendix 2);—do you consider that that framing is as strong as that used in the G truck? I believe it is just as strong,

3131. Will you say why you think it is as strong? In the G truck there are only four stringers; in this

there are six—four centre ones and two outside ones.
3132. Do you notice these four-truss rods;—do you consider that they add much to the strength of the car? Yes, of-course they do.
3133. Are there similar truss-rods under the G? No.

3134. Are there any truss-rods under the G truck? Yes. 3135. Where? Two; one on either side.

3136. Do you know the dimensions of these truss-rods? No; but I think they are about an inch and a

quarter. 3137. Do you know the measurement of the truss-rods on the outside of the big G truck? I think they

3138. And there are only two in that car as against four in the dump-car? Yes.

3139. Do you think the diagonal braces in the big G truck help the strength of the car very much? Yes, a good deal. 3140. There are none in this dump-car? No.

3141. Still you think this car is as strong as the G without them? Yes. 3142. You notice the head-stock, that is $12\frac{1}{2}$ by $4\frac{3}{4}$; the buffer stands on it midway between the outer and one of the centre springs. Is there danger of the head-stock being broken while the car is being shunted? No, not in ordinary use; a collision, of course, is another thing.

3143. Do you think that if one of these dump-cars fixed to an engine, loaded, and had twenty other loaded cars behind it, there is any danger of the head-stock being drawn off? No.

3144. Why? Because the four truss-rods would hold it, if everything else was away from it. 1043--N

MINUTES OF EVIDENCE TAKEN BEFORE THE SELECT COMMITTEE

3145. You know that the rolling stock in use by the Government of New South Wales has a continuous Mr. J. Nelson. draw-bar? Yes. 3146. Do you consider that these four tie-rods are equal to that draw-gear? Yes. 2 Oct., 1884.

3147. Do you consider that this system of coupling, without continuous draw-gear, is as safe as with it?

No. 3148. Can you tell me what is the size of the continuous draw-bar used in the railway rolling stock in New South Wales—what diameter? I think it is 2 inches; I will not be sure about the size of the iron, because I never measured it.

3149. Is it round or flat? Partly round and partly square. 3150. Have you noticed the mechanism of the dump? Yes Yes.

3151. Do you think there is any danger of that becoming self-acting in transit—of the car dumping itself while in motion? No, I do not see that it is possible.

3152. Or would there be any danger of its becoming self-acting in shunting, in the event of its getting a

sudden and severe blow? No. 3153. From your knowledge of car-building, do you think the framing of that dumping car is sufficiently strong to carry 20 tons in ordinary traffic? I do not think so; it would carry from 10 to 15 tons, but I would not say 20; I would not like to put 20 tons on every one of them; I think it would be putting too much on it, as far as my knowledge goes.

3154. Do you know anything of the freight traffic of America? Not much—I only worked for Pullman

3155. Have you ever seen any freight-cars there as big as these? Yes. 3156. Were they of the same general design as these? Yes, something like our G.

3157. Mr. Poole. They were not dump-cars? No. 3158. Mr. Wright. Have you any knowledge of the weight carried by freight-cars in America as a rule? From 10 tons to 30 or 40 tons.

3159. Did you ever see in America what is called the grain cylinder? Yes. 3160. Have you seen the bogies under that? Yes.

3161. Are the bogies or trucks of the same design as this under these cars? Just the same; there might be a little difference in the rocker.

3162. Are you aware that the usual weight carried by grain trucks in America is 60 tons? 'I do not

know; 40 tons I have seen carried on cars similar to these.

3163. I am speaking now of the bogie portions—I understand you to say that you have seen as much as 40 tons carried on two sets of trucks or bogies? I have.

3164. Mr. Poole.] Would the bogies be the same as these? Yes, all the same, except the rocker.

3165. No stronger? No.

3166. Mr. Wright.] It is not within your knowledge that 60 tons are carried on grain trucks or bogies the same as these? I have read of that.

3167. Do you consider this truck good, fair, workmanship—the car you are building? I do. 3168. Do you consider the material is good? The material is grand.

3169. Is the material used in building these cars of the same class of material as is used in car-building in America.? Yes, just the same

3170. What is the material? White oak and pitch pine.

Yes, carriage-building.

3171. Were you car-building in America? Yes, carriage-building.
3172. Have you any knowledge what rolling stock in England is built of? Yes, I had a year's experience

on the Midland Railway.

3173. What was the material used? The principal part of oak, and part of Baltic timber something like pitch pine.

3174. I understand you that you think this truck safe under all conditions of traffic, with a load up to 15 tons? I do.

3175. Mr. Poole.] You are building these cars at Darling Harbour for Mr. Carson Woods? Yes. 3176. What do you consider building the cars? Putting them together:

3176. What do you consider building the cars? Butting them together:
3177. The bogic frames and all the various parts that form the car are all ready to your hand, are they not? No, not quite, we have a good half day's work in getting the truck ready to put the upper frame on.
3178. Do you build them under contract? Yes.
3179. How long does it take two of you to build a car? It would take two of us about a week, but two could not build a car—they could not lift the timbers; there must be four of us in a party.
3180. The four of you, I suppose, would build two or three cars in a week? Yes.
3181. Chairman. You said you had had some experience in regard to rolling stock on the Midland Railway? Yes.

Railway? Yes.

3182. Do you know the weight the trucks are supposed to carry there? They load about 6 to 8 tons. 3183. Have they trucks to carry any greater quantity? Not that I have seen.

3184. Have you ever examined the freight-trucks running on the Midland line? Yes.
3185. What size of timber is used there—the head-stock, for instance? Something near the same—a foot wide and 4 inches thick—about that.

3186. And yet they do not carry more than from 6 to 8 tons? No. 3187. Do you know the dead weight of the dump-car? No.

3188. Do you know the dead weight of any of the ordinary trucks on the Midland Railway? No. 3189. Mr. Wright.] Were you employed by the Pullman Palace Car Company? Yes, in Italy and in

England. 3190. Had you the firm's interest at your disposal—were you employed to make arrangements for the sale of the cars? No, I was under the orders of the Manager. 3191. You were a workman? Yes, I was foreman.

3192. I presume from that that you were a trusted employé of the firm? Yes.

Mr. S. Cook. 2 Oct., 1884.

Mr. Sydney Cook called in and examined :-

3193. Chairman. What is your occupation? Coach-builder. 3194. By whom are you employed? Mr. Carson Woods. 3195. What doing? Building dump-cars.

3196. Have you had any experience in the manufacture of railway rolling stock? I have had all my time

at it—sixteen years.

3197. What class of rolling stock? The class now running on the New South Wales lines—passenger carriages and goods trucks. I served my time with P. N. Russell & Co.

3198. Where were you engaged before you came into the service of Mr. Carson Woods? With Mr. R. A. Ritchie, at Parramatta and Newcastle.

3199. In what capacity? I was foreman for two and a half years.

3200. You are employed now in building dump-cars for Carson Woods & Co? Yes.

3201. What is your opinion about those cars, as to strength, in comparison with the rolling stock we have in use here? Of course they are not framed the same as we frame them on this line; we have diagonals, and they have longitudinals running straight through, and four truss rods with 3 feet 6 inches from centre to centre of the truss rods, four of them within that; then there is the drawhook in the centre. do not see myself how anything could give way.

3202. Do you consider them as strong as the rolling stock we have? I do. 3203. Is the timber as heavy in size? It is heavier; the stringers are heavier, and the sole-bars and head-stocks are heavier.

3204. Have you worked any of the white oak of which the head-stocks are composed? No, I have not to my knowledge.

3205. Then you cannot form an opinion as to its quality and strength? By the look of the timber, and from what I know by working over there, I think it is very good timber; I never worked any of it to my knowledge before working it over there, but I believe it to be first-class timber.

3206. Mr. Wright. Do you think the dump-cars you are now building are strong enough to carry a load of 20 tons over our lines? Yes, I do, if they are well looked after; if the truss-rods are allowed to get loose of course there may be an accident.

Are they as strong, in your opinion, as the large G truck? I do not think they are any stronger. 3208. The dump-car is marked to carry 20 tons, and the large G truck to carry 15 tons;—do you think the dump-cars are strong enough to carry 20 tons? I think they are.

3209. Then I suppose you consider the large G strong enough to carry more than 15 tons? I do.

3210. There are no diagonal braces in these dump-cars? No.

3211. Do you consider that in running without a continuous draw-bar there is any danger of the head-stock being drawn off: supposing there were fifteen or twenty of these trucks loaded behind an engine, do you think there would be any danger of the head-stock of the first one being pulled off? Not unless these truss-rods gave.

3212. Do you think there is any danger of that? I do not think there is—not with the quality of iron in these truss-rods. The quality of the iron in these truss-rods is so good that with a diameter of 11 inch

I like them better than our own at $1\frac{1}{2}$ inch.

3213. I understand you to say there is no danger of the head-stock being pulled off? No. From what I have seen of coal trucks at Newcastle they are all done the same way, and they get more knocking about than the G trucks.

3214. Is there any danger of the head-stock breaking? No, I do not think it.
3215. Do you think the design of the framing of the dump-car is as good as the design our rolling stock is framed on, or is it better? I do not think it is better; I think the centre part is better, but you could

not put diagonals into these dump-cars.

3216. I am speaking of it as it is. Do you think it is as good, or better, or worse than the design of our rolling stock? I do not think it is worse, and I do not think it is much better.

3217. You have noticed the way the doors are hung in the dump-car; -what would be the cost of altering these doors to hang from the bottom instead of the top-to hang the same as on our own cars? I could

not give you an answer to that.
3218. What do you think it would cost, roughly speaking? I do not think it would exceed £5 for each truck,

Mr. Jonathan A. Murray called in and examined:—

3219. Chairman.] What is your occupation? Car-builder.

3220. By whom are you employed? Mr. Carson Woods. 3221. What doing? On the dump-cars.

3221. What today? On the dump-cars.
3222. How long have you been in the Colony? Five years.
3223. Where have you been employed? A year and a half at Mr. Bray's, at Newtown; a year at Mr. Wearne's, at the Glebe; a year at Newcastle, and a year and a half at Hudson Brothers.
3224. Have you had any experience in building rolling stock, such as D and G trucks? No—almost all

passenger and tram-cars.

3225. Have you had any experience of freight trucks? Hardly any; I have worked on a few; my trade is the building of railway passenger cars.

3226. Do we understand that you are unable to give us any practical information regarding freight trucks? I have a pretty good idea of what they should be; where there are passenger cars building,

Just a small amount on freight cars.

3227. Have you had any personal experience of them? Just a small amount on 3228. Mr. Poole.] Have you had any America experience in building cars? America; I worked six years at it in Boston—that was where I learnt my trade. Yes, it is my home-

3229. The employment you are now in is practically your first experience of freight-car building? No, I built a couple at Newcastle.

3230. What kind of cars were they? Cattle waggons.

3231. Mr. Sutherland. Are you in partnership with any one in building these dump-cars? My partner, Mr. Sydney Cook, was here this morning. He and I are partners over there in building some of these cars.

Mr. A. Murray. 2 Oct., 1884.

Mr. 3232. How many of you are in partnership? Only two—Cook and I. J. A. Murray 3233. How many different parties are there now building dump-cars? A good many; four, I believe. 3234. Four different parties building or putting together the cars? Yes. 2 Oct., 1884. 3235. Putting them together—that is what you mean by building them? Hardly.
3236. What do you mean then by building them? Putting up any article we call building.
3237. Is it not putting them together that you mean? There is a good deal of other work to do—boring bolt-holes and sawing, and all these matters. 3238. Are the bolt-holes not all bored? No. 3239. Mr. Poole.] A great many of them? Yes, a great many of them, but not all. 3240. Mr. Sutherland.] Has not the whole framing of the car been fitted and the holes bored in America? They have been fitted together, but not put up in America. 3241. What do I understand that you mean by building;—put your own meaning on it. What is your own definition of building a car? All car work is always morticed by a machine; the mechanic has to clear out the mortices and put it together. out the mortices and put it together. 3242. I want to know what is your definition of building a car; —you say clearing out the mortices? And putting it up; that is what we call building it; putting it up; it is all in a heap on the ground. 3243. You cut the flooring to suit the framing, after you have it screwed together, do you not? Yes. 3244. I want your definition of what you call building a car? We call it car-building, what we are doing over there.

3245. Then, if I understand you, you mean by the term car-building putting the various pieces together, screwing them up, and fixing the car ready for use? Yes; but all these holes have not been bored in 3246. I am not asking you about the holes, but your definition of the word building? Erecting anything I would call building.
3247. Is not putting together and building the same thing with you? -3248. Mr. Poole.] Mr. Sutherland wants you to tell him what it is you consider to be car-building?—
3249. Mr. Sutherland.] I shall ask you the question again, and I shall have an answer before you leave here in some way or other, or the Chairman must protect me. I am here to ask you a question, and you are not to say whether you will answer it or not. I know you can answer it if you like. The question I will be not not got a definite appropriate in what do you mean by car-building:—do you put to you, and that I have not got a definite answer to is, what do you mean by car-building;—do you mean putting the various pieces of wood together to make a car of? Yes, I call that car-building. Up at Hudson's, where I have been employed, all these articles are morticed by their machinery and are brought out to me, and I just put it up; we call that car-building; everything is morticed by machinery.

3250. That is simply putting the materials together after they are morticed, tenoned, and the bolts all made, and the nuts on them. You have to put all that together, and that makes a car—and that is what you mean by building a car? Yes. It is all flat on the ground, and when I erect that and stand it up, I build it; it is not the old style of doing it by hand; the machine prepares all the work.

3251. Mr. Poole.] I will just call your attention to this plan (sketch of framing of dump-car shown to witness, and the various parts pointed out)—Now is it not a fact that the whole of these pieces are cut, tenoned, morticed, the holes bored in them according to a template, and sent out in numbers for you to select from, in order to build a car? They are. 3252. All these pieces are cut as duplications from the template, both here and in America? Yes. 3253. These bogie frames—you get them in sets; the four wheels and two axles in the frame, that is one set; and the same for the other; that is all ready for you? Yes. 3254. And you simply take these pieces and put them together, run the bolts through, and screw them up; all the main parts of the car, even including the dumping arrangement, you get in sets, and you then simply put it together, and after that you cut the flooring? And the ends; there is boring and sawing about the ends and the floors too.

3255. For that you receive, I suppose, a lump sum? Yes, we have a price per car. 3256. Have you any objection to tell the Committee what the price is? £5 per car. 3257. For the building of each car? Yes.

3258. That includes all the labour that is put upon it in the Colony? That is what I put it up for.

Mr. James Graham called in and examined:-Mr. 3259. Chairman.] What is your occupation? Engine-fitter.
J. Graham. 3260. In whose employ? In the employ of Carson Woods & Co., working on the dump-cars here
2 Oct., 1884. 3262. Where have you been employed? I have been employed a good bit with railway contractors; I was employed by Amos Brothers on the extension between Dubbo and Nyngan. 3263. Have you a contract to put these cars together? No, I am working for the last witness; he gives me so much a week to do the iron-work. 3264. Have you had any experience of what are termed freight-cars or goods-trucks? I have had three months' experience in repairing them for Amos & Co.
3265. Have you had any experience in regard to manufacturing railway rolling stock? No, only 3266. You are therefore unable to give the Committee an opinion as to whether the dump-cars would carry 15 or 20 tons? I can form my own opinion. I can find it out by measurement. 3267. Have you measured the cars? I have not. It is an arithmetical question. My work is entirely on the iron-work; I am doing nothing on the wood-work.

3268. What are you doing on the iron-work? Putting in the tie rods, runnings all the bolts down, screwing the bolts up, setting the washers, and so on, It requires four men to build a car, and half the time is taken up in labouring work, pulling things about and lifting them; no mechanical work about that at all.

Mr. J. W.

2 Oct., 1884.

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Mr. John William Brierley called in and examined 12 10y fo years well 2853 3269. Chairman.] What is your occupation? Car-building, enoul one suiting the right year woll 2823. 3270. What description of car? I am engaged at present on a shirt the color of car? I am engaged at present on a shirt the color of car? I am engaged at present on a shirt the color of car? I am engaged at present on a shirt the color of car? I am engaged at present on a shirt the color of car and guitting dimplears together? I not since I came here.

3272. Have you been putting dimplears together? I Not since I came here.

3273. You have not put any of the dumplears together in the Colony? I not ment guitting ton it at 1823. 3274. Mr. Poole. You are employed by Mr. Woods' foreman? Yes sun its ban guitting ton it at 1823. 3275. What kind of a sheep-car is it you are employed upon? A double-decked car. A loos of the color of the 3277. Is it a pattern in use in America? So Yes our to game a recovered and some and some into generally used there for sheep? Not it has been lately introduced there; it had not come into general use when I left America. The not come into general use when I left America. The not come into general use when I left America. The not come into general use when I left America. The not come into general use when I left America. The not come into general use when I left America? I landed here on the 6th June by the City of the come in the state of the same of the come in the state of the come in the same come in the s 3280. Is this a patent car? all believe it is not a guidhood to notified the root it is down and the will stand the car it is about all the difference there is between the cars in use here and the car I am at present engaged on. and the car'l am at present engaged on.

3282. Do you know what is the gauge of the wheels? 4 feet 8½ inches.
3283. Is it a double-bogie truck? (Yes. the true true true to the word of the wheels? 4 feet 8½ inches.
3284. Have you any idea what the weight of it will be when completed? I have not.
3285. How many sheep will it carry? About sixty, I think.
3286. Chairman.] Is this car' being put together for the Government? I believe it was sent here as a sample car. sample car. sample car.

3247. Is not putting togeth T act to the Government of the constant in the constant to the Government of the constant of the Government of the Government of the Coole. The constant of the Government of the Coole. The constant of the Government of the 3288. Chairman. In your evidence before the Committee some questions were asked you with respect to the patent for the dump-car, and I find you state here that you have it in town and you could get it if we wish. Have you got it here? No; I can send it in to the Clerk of the Committee. out to me, and I just put it up; we call that car-building; everything illine in the part of the same stnemusch of the state of the sall flat on the ground, and when I erect that and stati it all flat on the ground, and when I erect that and stati it is all flat on the ground, and when I erect that and stati it is all flat on the ground, and when I erect that and stati it is all flat on the ground, and when I erect that and stati it is all flat on the ground, and when I erect that and stati it is all flat on the ground, and when I erect that and stati it is all flat on the ground. yea wean by building a car? Yes—It is all flat on the ground, and when I erect that and starit about starit about 2. Yes. It is all flat on the ground, and when I erect that and starit she be said in the property of the start of the property of the start of the plan (sketch af t.* gainsom worrom-ot, in the start of 3292. Mr. Sutherland.] How many of the witnesses that you gave a list of to the Minister for Works have tendered, morticed, the holes bored in them according to a template, arwond tonioh laussband been examined that you what to there any of those witnesses not yet examined that you wish to have examined that you wish to that the second with the second beautiful to the sec all possible information given to the Committee, although at the same time Hammost anxious to close it, because the inquiry is a great loss to me—a very heavy loss; or und the not committee and Read 3294. Has this Committee refused to hear or take the evidence of any witness that you have suggested for sent his name in to be summoned? I None that I know of the transparent of the refuse of the result of th sowing about the ends and the floors too. 3297. Will you give their names to the clerk ? Yes. At this present moment there are only two more that I can remember—James Kendall and Thomas Jubbanan) and test of northeside year over all 3228. Are they present now? No. 3299 a.We want to give you every fair play? on Candidly, I do not see that I am don my trial at all; I am here just to give information to the Committee as a volunteer.

Mr. James Graham called in and examined .-

TUESDAY, 7-OCTOBÊR, 11884 po vou of stard who will be send of the control of the

H. G. C. Voods, Esq.

2 Oct., 1884

Mr. T. Jubb.

^{*}Note (on revision):—The Right Honorable Lord Loftus granted to me the patent upon the dump-car on the 29th of June, 1883, I presume by the advice of the responsible Law Officer. I will produce this patent—show it only. For any further information I most respectfully refer the Select Committee to the Crown officers who advised its being granted.

Mr. T. Jubb. 3308. Do you contract to build these dump-cars? Xes.

3309. What price are you getting? £5.

3310. Is that for putting them together? Yes.
3311. That is all the work, as far as you know, that is being done on them in the Colony? Yes, as far as I know-that and the painting.

3312. How are the buffers attached to the head-stock? By four belts.
3313. Is there any difference between the way they are attached to the dump-cars and the way they are attached to the D trucks? Yes, a great deal. In the D truck the buffer is much weaker, because there is so much more boring and morticing in them.

3314. In the D truck is there nothing to stand the pressure against them? Nothing further than the

3315. Nothing behind the head-stock? Yes, there is the diagonal. 3316. Is there any diagonal in the dump-car? No.

3316. Is there any diagonal in the dump-car? No.
3317. How far is the buffer from the sole-plate in the D truck? I cannot say; I do not remember.
3318. Is it closer than in the dump-car? Yes.
3319. Does it add much to the strength, being closer? Yes, I should imagine it would.
3320. Do you not think the diagonal behind the buffer is an element of strength? Yes, as far as it is concerned, but the letting in of the tenons weakens the head-stock.
3321. Do you think that with a heavy shout there is any likelihood of the head stock or huffer break. Yes, as far as itself

3321. Do you think that with a heavy shunt there is any likelihood of the head-stock or buffer breaking?

No, I think not; the buffer may break, but not the head-stock.

3322. Do you know anything about the iron-work? As far as I have seen it is very good.
3323. Have you had any experience of iron-work? Nothing further than putting work together such as I have stated.

Mr. Thomas Midelton called in and further examined:-

Mr. T. Midelton. 7 Oct., 1884.

3324. Chairman.] You were requested by the Committee to furnish a return showing the accidents that have occurred in America from the use of chilled cast-iron wheels;—have you that return? Yes, I have it here. This Return (produced and handed in—See Appendix J1) refers to broken wheels; and this (produced and handed in—See Appendix J2) to broken axles. This (newspaper produced) is one of the journals it is culled from—the Railroad Gazette. It is one of the standard mechanical journals of America. These returns are carefully got out from a six months file of this journal—the first six months of 1884. This is a number for 1883. You see the character of the journal—it is as good as an English paper in every respect; and I take it these are official records supplied by the Railway Companies themselves. 3325. You were also asked to produce a comparative table of the weights, cost, and carrying capacity of the various carriages in use or designed for the Government Railways of New South Wales? Yes, this is it. (Handed in. See Appendix J3.) You will find everything you asked for in that paper; that refers to carriages only. refers to carriages only.

refers to carriages only.

3326. Have all these carriages been manufactured in the Colony? All except the Ashbury carriage. This return (handed in—see Appendix J4) refers to waggon stock.

3327. Have you any other plans? Yes; I have plans of the G waggon, my four-wheeled waggon, and my double bogic waggon. The Commissioner gave me permission to bring any plans or documents that might be asked for. I put the question to him and he said, "Yes, you can take anything you have in your possession to give the Committee information." (Plan of new iron platform bogic waggon, No. 855, handed in Secondard Argandin 2)

in. See separate Appendix 3.)
3328. Will you kindly explain the construction of this car, and how you propose to work it, and for what purpose? It is a locomotive coal waggon. It is customary in England to use waggons specially set apart for the Locomotive Department. The London and North-Western Railway Company have 4,000 waggons, which they use exclusively for coal waggons. They have about 50,000 altogether. I have always contended that we should work our own coal trains with our own engines and our own waggons for locomotive purposes. You see it has iron sole-bars; in fact you may call, it an iron waggon throughout. It is intended to carry thirty iron boxes, each 3 feet square and 2 feet 6 inches deep. Each of these boxes holds 10 cwt. of coal, so that the coal is measured and weighed. When these boxes are on this platform they are filled at the mine, and the waggon then contains 15 tons of coal. The coal is never handled at all from the time it leaves the mine till it is put on the (engine) tender, when the boxes are lifted off the said they are niled at the mine, and the waggon then contains 15 tons of coal. The coal is never handled at all from the time it leaves the mine till it is put on the (engine) tender, when the boxes are lifted off the said waggon by means of a crane and swung round, and the coal is tipped over into the tender 10 cwt. at a time. The waggon is not only available for coal but for wool, copper, hay, timber, straw, potatoes in bags, or any stuff that will ride on a platform waggon. This waggon might also be used for taking the ashes away from the locomotive ash-pits; the boxes, after being emptied of coal, might be put into the ash-pit on which the engine stands, and the fireman might rake or wash his ashes out of the ash-pan into the box and the box might be lifted with the crane referred to and put on the waggon or on to a ballast the box, and the box might be lifted with the crane referred to and put on the waggon or on to a ballast waggon which could be attached to the crane; so that the scheme embraces a locomotive coal-waggon and also provides a means for getting rid of the ashes. In the wool season this waggon, of course without the boxes, could be used for carrying wool, and the boxes could be used at a locomotive station. The cost of our present coal stages would have paid for the boxes and they have the adventure of being portable. boxes, could be used for carrying wool, and the boxes could be used at a recommendate of our present coal-stages would have paid for the boxes, and they have the advantage of being portable. 3329. Mr. Sutherland.] How many bales of wool will this waggon carry? Ninety-nine. It has continuous draw-gear of a very strong description, and the usual standard buffer; but the draw-gear is specially enlarged in dimensions, and the bogie is very simple and strong. The wheels are wrought-iron, with seel and they cannot be used at a recommendate of the strong of the releasing the result of the releasing the result of the releasing the result of the releasing the result of the releasing the result of the releasing the result of the releasing the result of the releasing the result of the releasing the result of the releasing the result of the releasing the result of the releasing the r enlarged in dimensions, and the bogie is very simple and strong. The wheels are wrought-iron, with steel tires, fastened on a plan of my own so that they cannot come off the wheel if they break, and they cannot turn round if they get slack. The axles are of steel, of a larger and stouter description than hitherto

3330. Chairman.] What is the size of the axle? The axle is $4\frac{1}{4}$ inches in the middle, 8 x 4 inches in the journal, and 5 inches in the boss of the wheel. That is a very stout axle.

3331. What is the difference between the size of the axle in this car and the dump-car? The dump-car is either $3\frac{3}{4}$ inches or $3\frac{5}{8}$ inches in the centre; I have not measured it, therefore I do not know what size

it is in the journal, because the boxes are on and I could not measure it.

3332. Is there any difference in the size of links? No. I have depended wholly on the middle draw-bar. I have put the usual side-chains for safety, but I depend on the enlarged draw-bar, hook, &c.

3333. Is it much stronger than in the dump-car? Very much stronger. The hook on the dump-car is the one usually adopted; I claim this hook as my hook.

3334. Have any orders been given for trucks of this description? I have received the Commissioner's

authority to build these waggons.

Mr. T. Midelton. 3335. How many? I took it to mean that I was to build 250 for coal purposes. The coaling papers referred to in my previous evidence show that. I am only speaking from memory now. There was a 7 Oct., 1884. skeleton drawing of this waggon supplied with the papers to show what I intended.

3336. How long is it since these trucks were approved of? I think last January twelve months; some

time before the dump-car was brought under my notice.

3337. Were these waggons ordered for coaling purposes? I understood the Commissioner's minute to mean that these waggons were to be substituted for the G waggons, or rather for 250 coal waggons that were ordered at that time. I think, if you refer to the papers, you will find a minute to that effect. This (Plan handed in—See Separate Appendix 4) is a four-wheeled waggon for the same purpose; it carries that half the weight 7 tons 10 cent instead of 15 tons, the weight of it is given in the table I have just half the weight, 7 tons 10 cwt., instead of 15 tons; the weight of it is given in the table I have handed in.

3338. Does it show anywhere the description of material? The drawing shows it. It is all iron, except the floor

3339. With iron wheels and steel tires? Yes.
3340. Mr. Poole.] What is the weight of this four-wheeled waggon? The four-wheeled waggon has a little advantage; one is 8 tons 10 cwt. empty, the other is 4 tons 2 cwt.

3341. Your idea, with respect to those waggons, is that they are practically travelling coal staiths? I would hardly say that; I would say they are loaded at the mine and hauled to the locomotive depôt, and when the coal is taken off with the crane it is both weighed and measured at the same time.

3342. In measuring the coal by boxes you ascertain the weight? I measure it in the boxes, and ascertain the weight, because a small weighing-machine is hooked on to the crane. It is weighed and measured

both.

3343. Your idea is that what you lose in the weight of the coal carried, by the use of the boxes you save in the less handling? Yes, most decidedly.

3344. You consider that the Department gains more than the equivalent for the loss of the coal carried? Yes, considerably more.

3345. In having practically no handling? There is no handling to do, either of coal or ashes. I proposed this scheme to the Berrima Coal Company when they were talking about laying their tramway down, in

3346. Mr. Sutherland.] Before you were in the Government service at all? Yes; and instead of getting

weaker on the scheme I have got stronger on it ever since.

3347. Mr. Poole.] I want to call your attention to evidence given by the Commissioner on the 3rd of September. At question 614 the Commissioner says:—"I was aware that Mr. Midelton had some scheme of his own for the coal traffic, depositing the coal on the ground and picking it up by means of a crane and putting on the tender—a scheme which met with the approval of neither Mr. Cowdery nor Mr. Scott (Mr. Midelton's superior officer), and from inquire I made it seemed clear to me that the time Scott (Mr. Midelton's superior officer); and from inquiry I made, it seemed clear to me that the time that would be occupied in such a method of loading the tenders would be altogether too great." That is the Commissioner's answer to a question put by the Chairman. But if I understand you rightly, you are under the impression that the Commissioner approved of the platform waggons, of which you have just submitted a plan? That was what I understand submitted a plan? That was what I understood.

3348. Have any of these waggons been made? Not yet. This was approved when I was Acting Locomotive Engineer. Mr. Scott came back to office just about the time I was going to commence building them, and I have not had the opportunity of building them now. I am only second officer in the Locomo-

tive Department.

3349. You are quite clear that the Commissioner approved of these plans? There is no doubt I think about that; the coal papers show that, as I said on a previous occasion. I am sorry I cannot agree with what the Commissioner says; he must forget what has taken place I think with regard to these matters; I have discussed it with him over and over again, without any written record. Besides, I never proposed

to put the coal on the ground.

3350. It was never any part of your intention to put the coal on the ground, but your idea was to lift it off the platform waggon on to the tender at once? Yes, direct; but I also acknowledge that I said that in the wool season the coal waggons could come in full to the locomotive depôt, and the crane could pick the coal-boxes off and tip it out in a heap on the ground, when there were no tenders ready to receive it, so that the waggons could be used at once for carrying wool, in which case I should have to pick it up off the ground again. But that would only be when we were pressed for waggons.

3351. You could either tip the boxes or let them stand full? Yes, I should leave them full; that would

be the sensible thing to do, and the waggons could go away.

3352. Chairman.] Have you any other papers to lay before the Committee? I do not think there is anything just now. 3353. $Mr.\ Poole.$] I will recall your attention to some answers given by you, on the 17th September, to

questions put by me:—

"1279. Did you then express to the Minister a favourable opinion as to the adaptability of the dump-car to our traffic purposes? I do not remember having done so. I do not think I spoke to the Minister at all until after we left the trial and went round the goods-shed. I do not remember expressing myself in favour of the car to him.

1280. Did you advise the Minister to purchase the cars? Certainly not.

1281. You are quite clear on that point? Yes, I am quite clear. If he had asked my opinion as

to purchasing the cars, I should have said decidedly not to purchase them. How could I do otherwise in the face of a minute like that on the printed papers.

1282. You are quite sure that you never expressed a favourable opinion of the cars to the Minister, or advised him to purchase them? I am quite sure of that, sir."

That is your evidence. Are you still of the same opinion, or do you desire to give the Committee any further explanation? I do. If you remember, when I was here last, your question to me was as you have just read, and ever since then I have been uneasy, thinking it would imply that I had advised the Minister to purchase these dump-cars.

3354. Pardon me, your evidence is quite the contrary? Your question to me led me to think you thought I had advised the Minister to purchase the cars; that is what I have been thinking of ever since; but the

contrary is the case.

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T. Midelton.

7.Oct., 1884.

3355. You never advised him to do so? Certainly not. If the question had been put to me, I should There is not a man in the Colony who can say I have ever been in favour have said emphatically, No. of the dump-cars.

of the dump-cars.

3356. Did you speak in terms of commendation as to any particular portion of the car? Yes, I was talking to the Commissioner about the first of the G waggons, which came down according to my instructions; I had the G waggon brought down purposely to compare it with the dump-car; I pointed out to the Commissioner the absurd dead weight of the G waggon compared with the lightness of the dump-cars; I give them credit where credit is due; and I think I said something in favour of the bogic and springs, either to the Minister or the Commissioner, I cannot tell which; in favour of the bogic only, nothing else, and it passed off at that time. If he thought I was in favour of the car as a whole, I am sorry for it, but I cannot help it; most emphatically he did not ask me my opinion about it nor did anybody else. I told the Commissioner the disadvantage of the dead weight of the G waggon compared with the light weight of the dump-car, considering their respective carrying capacity.

3357. Having had time to think over the matter, and having had your memory refreshed by your evidence on the 17th September, you are quite clear that beyond expressing a favourable opinion as to the bogic ——? As to the bogic frame; I did not say a word as to the wheels

3358. Beyond that you expressed no favourable opinion of the cars whatever? No; except as to the

3358. Beyond that you expressed no favourable opinion of the cars whatever? No; except as to the lightness of them; I might have said they were a light car; I say that still; but the designers have not succeeded any better than I succeeded myself; on the contrary, my car is a ton lighter than theirs. You saw a letter in the Evening News cracking up the advantage there would be in these cars on account of their lightness. Well, considering my car is a ton lighter, and of iron instead of wood, I think I have the balance of argument in my favour.

3359. You are quite sure that on the occasion you have just referred to, when the Minister for Works, the Commissioner, and others, were present, you never expressed a favourable opinion as to the wheels, the axles, the head-stock, or the general adaptability and durability of the dump-car? No. In conversation with the Commissioner in his office, I think I have a recollection of speaking of the advantage of these cars being light, but not specially referring to any part of it as being of extraordinary elever design, because we could design a similar thing ourselves, or perhaps better. It is not by any means a

new thing to me in any shape or form.

3360. Mr. Sutherland. You have stated in your evidence that the wheels on both these proposed cars of yours are different from the wheels we are now using—the wheels and axles;—will you please describe the difference? The axles are stronger in proportion to their increase of size, and the wheels are lessened somewhat in weight, and the tire is fastened in a way which is my own, to prevent its coming off the wheel if it breaks, and it also prevents its turning round on the wheel if it gets slack; you can cut the tire into six different pieces, and it cannot come off the wheel. There are forty or fifty different schemes for doing that; but I claim that this is as good as any of them. It is approved, and about a thousand wheels of this pattern are coming out for the use of the Department. Mr. Goodchap has approved of it, That was just after he came back from England, and it is about the only thing he and Mr. Scott also. has approved I think.

3361. Mr. Poole.] The ordinary way of fastening the tire on to the body of the wheel is by counter-sunk bolts or rivers? Yes, right through the middle of the tire—a systém which Captain Tyler twenty years

ago told the Railway Companies in England was a barbarous system.

3362. You do not fasten through the wheel? No, mine hooks on to the outside of the wheel; it is a sort of double dovetail. (The witness explained by making a sketch.) The tire can wear from $2\frac{1}{2}$ inches down to 1 inch thick without coming off; it cannot come off; it is an impossibility in fact; the tire can break, but it cannot come off.

3363. Mr. Sutherland.] You say there are a thousand of these wheels on the way out now?. Yes, there are a thousand ordered and expected here now.

are a thousand ordered and expected here now.

364. Mr. Suttor.] Have you patented any of these inventions? I have patented the coaling scheme for locomotives, and I have also patented a bogie; but the Government have the use of them.

365. Mr. Poole.] They do not pay any royalty? No.

366. Mr. Suttor.] Have you patented the waggon? Yes, the coal scheme; I have patented that. It is patented in New South Wales, and applied for in England and America.

367. Before the Commissioner approved of this plan of yours, did you make any arrangements as to what your remuneration should be? I asked if he had any objection to my getting a patent for it; and he said he had no objection. Of course the Government will have the use of it. If he gives me the credit I am satisfied, and will leave the remuneration to him.

368. You submitted the proposed cars to the Commissioner without at the same time making any claim?

3368. You submitted the proposed cars to the Commissioner without at the same time making any claim? I left that to his generosity. I thought that, as a servant of his, he would treat me as a man should be treated. I want to do the best I can for the Government I am employed by, or the Board of Directors, or whoever it may be; it is immaterial to me so long as I am appreciated. 'I have made no claim, and do not intend to; but if the Government think proper to award me something I shall not refuse it. 3369. These boxes are standing on the floor of the waggon? Yes. 3370. Have you any means of keeping them in their places? Yes, a little piece of iron $2\frac{1}{2}$ inches wide goes round the extreme edge; that keeps them from sliding about. The weight in the boxes keeps them

steady on the floor.

3371. What is the weight of this waggon of yours? 8 tons 10 cwt. the double bogie.
3372. And it carries how much? It is all on the table I have handed in. My waggon is a ton lighter than

the dump-car.

3373. Chairman.] You consider it is your duty as an officer of the Government to do the best you can?

Yes; and the duty of the Government is to give me the best remuneration they can.
3374. Mr. Poole.] Your duty is to do the best you can with regard to economy? Yes.
3375. Mr. Sutherland.] You said something about the springs under this proposed waggon of yours being different from the springs under the ordinary rolling stock? I do not think I said anything about the The springs, of course, are stronger on account of the extra weight they have to carry; and they are a different class of springs from what we use now. There is a stronger spring and a stronger axle on the double bogie waggon.
3376. Is it not a fact that in the whole of the rolling stock we are using now it is the weakness of the

Mr.

T. Midelton.

springs that causes the weight they carry to be limited—the D trucks for instance—to the $6\frac{1}{2}$ or 7 tons marked upon them? The carrying capacity of any wgagon or car is in proportion, of course, to the strength of the springs and axle. I should like to see our D waggons made for 10 tons instead of 7. 3377. If you had power to put stronger springs and axles on them you would carry 10 tons on the D waggons you are now using? Certainly.

3378. What would be the difference in the cost of a spring on a waggon—the four sets? Not more than a pound difference in each to really it carry 10 tons.

a pound difference in each to make it carry 10 tons. But we cannot do it unless we strengthen our axles. We could not do it on our present axles; but in the next five years' contract the axles are being made stronger. The waggon will carry more by increasing the strength of the axles and springs.

3379. Chairman.] Do you remember the date of the trial with the billet-wood? No, I cannot remember the date. Mr. Seatt same back about the latter and of Tune 1892 and it must have been within about

the date. Mr. Scott came back about the latter end of June, 1883, and it must have been within about three weeks of that; I think it was within three weeks of his return, as near as I can remember; but surely somebody in the Traffic Department will have some record of it. It was a sort of show day, and we were all requested to attend.

3380. Were you acting Locomotive Engineer at that time? No, Mr. Scott had resumed duties, and was responsible then. The only thing I am responsible for is that first minute, when the design was sent to

me. I gave my opinion before I ever saw the car.
3381. You know Mr. Stanley? Yes.
3382. Did you express an opinion favourable to the dump-car to Mr. Stanley? I might have said it was light, the same as I did at the time you referred to, to the Minister. If Mr. Stanley thought I was in favour of it he misunderstood me. I avoided saying anything at the time about the car as a whole.

3383. I think the Committee will understand this, that when you admit having told various gentlemen that the dump-car was very light in comparison to our rolling-stock, you in no way intended that to be a measure of praise? No, except in that respect; it was a measure of praise as regards the dead weight. But this is the point: what is there in it to show an advantage to the Government in using it. That is the point I want to get at. I have never expressed myself in favour of that.

3384. I suppose you or any other locomotive engineer could design a car, even very much lighter than the dump-car to carry the same weight, but for a short period? Of course we could. There would be no miracle in that. I hope there are as clever men in Australia as in America.

3385. In designing cars for freight you keep in view first the dead weight of the car in relation to its carrying capacity and the life of the car in work? Yes, certainly that is the foundation.

3386. The mere lightness of the car and its first cost is not the sole consideration?

look upon it as if I were working the line myself, not as if I were making cars to sell. I look at it from an administrative point of view.

3387. Does not the problem resolve itself in your mind into this—first cost compared with after maintenance cost? First cost, consistent with strength, durability, and safety.

3388. And cost of maintenance? Most decidedly.

3389. To put it in another way: you keep in view not only the first cost of the car and the work it will do, but the cost per year it will take to maintain the car in reasonable efficiency for the calculated period of its life? Exactly; that is the very ground.

3390. In designing a car you take into consideration whether that car shall, in your opinion, last (say) for

five years, ten years, or fifteen years, with reasonable repair? Certainly.

3391. And the balance of your opinion is that it is better, all those points considered, to expend a reasonably large amount of money on the building of the car, in order to insure its greater durability and less annual cost for maintenance? Certainly, in every respect I agree with that; and it applies not only to cars but to engines and everything else, stations and all; it does not matter what.

3392. Mr. Suttor.] Have you any car now working that will carry more than twice its own weight? No,* the only car I know of is the dump-car, and that is not working; but provision was made before the dump-car was introduced for doing the same thing: if I had remained in office as acting Locomotive

dump-car was introduced for doing the same thing; if I had remained in office as acting Locomotive Engineer, I daresay it would have been accomplished before now. My Redfern carriage is a lighter vehicle than any passenger carriage we had before made; and the dump-car is the lightest freight waggon we have at the present for its carrying capacity.

3393. Mr. Poole.] Looking back over the whole of your evidence with respect to the workmanship, material, general design, and adaptability of the dump-car for our railways, do you desire or have you modified your opinion upon any essential point, from the evidence you have previously given? No; it is exactly the same now as it was eighteen months ago. I am not a man to change my opinion very often. When I put anything down in writing I mean it.

Augustus Morris, Esquire, called in and examined:-

3394. Chairman.] What is your occupation? I am an agent for some American and some English firms. A. Morris,

3395. Have you seen the dump-car? I saw a model which Mr. Scott showed me.
3396. How long since? Some months ago; I could not remember exactly; it must be seven or eight 7 Oct., 1884.

3397. Do you remember expressing an opinion regarding the suitability of the dump-car for our purposes? I expressed no opinion of my own; but I had a private conversation with Mr. Read, of the Traffic Department, and I must say I am astonished to see that any private conversation should be retailed; and Mr. Read did not report the whole of the conversation.

3398. I presume you saw Mr. Read's report in the papers, laid upon the Table of the House? You told me about it, and I saw it just now; since I came into this room I looked it up.

3399. Mr. Read, in the papers recently laid upon the Table of the House, states, "In a conversation I had with Mr. Augustus Morris recently, he informed me that these waggons were not a success in America." Is that correct? What I told him was that a friend of mine who was an American engineer, and had been employed on the Pennsylvania railroad, had said that the dump-cars which they had at one time in use were not a success for coal—they were inconvenient for delivering coal—but that for ordinary freight they were very good. That is what I told Mr. Read.

A. Morris, Esq. 7 Oct., 1884. 3400. Will you point out in what way they were inconvenient for coal? In regard to the dumping. He said he did not care for the style of dumping. Since my friend made that observation to me I have seen him again, and he said he had not at that time seen this dump-car, and that it is a very great improvement upon those that the Pennsylvania railroad abandoned.

3401. Is that gentleman in the City now? He is.

3402. What is his name? Mr. Rhodes. He is a travelling agent for the Baldwin Locomotive Company. 3403. Have you received any orders from the Government for rolling stock from America? Yes; I act with Mr. Rhodes as agent for the Baldwin Locomotive Company; I received an order about six months ago for twenty locomotives.

3404. Did you receive an order for any other stock? Not lately.

3405. Are you acting in conjunction with any person or firm in the City? No, only with Mr. Rhodes, as

the sole agent for the Baldwin Company.

3406. How long have you been so acting? I have been their agent for four or five years.

3407. Sole agent in Sydney? I am their sole agent. All orders have to pass through me; I made that a

condition with the Baldwin people.

3408. What kind of engines have been ordered? Ten are what are called Mogul engines, heavy goods engines, and ten are mixed passenger and goods engines, but so powerful that a single one will be able to

take the express train to Albury instead of two as now.

3409. Were tenders called for? No, no tenders were invited. I got the order through the agent for an English firm coming to me and saying, "Now is your chance; they want these engines within three months and we cannot supply them within eighteen months." We undertook to supply them within three months after receiving the specifications at the works—that is, they were to be delivered f.o.b. at

3410. Is it usual to invite tenders for rolling stock? No; we never get orders for anything unless other people cannot supply them. They only come to us when nobody else can supply their order, and we do them very cheaply.

3411. In the case of the twenty engines you speak of, no tenders were invited from any other American firm? No, because the Department required them to be made in special ways which it would have taken some months longer to get any other firm to do. This order could not have been supplied from England under two years. A large portion of the order will be here in seven months, being now more than a month at sea.

3412. Have you ever brought under the notice of the Government a car known as the Allison freight-

car? Yes.

3413. With what result? They said they did not require them; they did not require any more cars just now. 3414. What was the price of that car? It is a pity you did not send me notice what information you required. I can scarcely give the price from memory. I will add it to my evidence. 3415. Mr. Teece.] You have travelled a good deal in Allican Company? Not more than twolve months.

3416. How long have you been acting as agent for the Allison Company? Not more than twelve months, certainly within twelve months.

3417. Do you think the Allison dump-car is superior to the other? How can I tell you that?

give you a description of all the Allison cars.

3418. Is it the custom in America for persons to manufacture and take out patents for cars and to get other leading firms to do business for them. Is it the custom for people like Allison & Co. to take out patents and get other leading firms to get orders for them? Allison & Co. is the leading firm in the United States in car-building. They make more cars than any other firm in the world.

3419. Do you know that the firm of Cameron & Co. do any business for Allison & Co.? Yes, it was

through Cameron & Co. that I received the agency.

3420. And you have had that agency for twelve months? Yes.
3421. Do you know who was acting for them before you? No one was ever agent for them here before me. I wrote to Cameron & Co. asking them to send me the prices of American coal and freight car. At that time I had Queensland more in view than New South Wales.

3422. You are quite certain Cameron & Co. had no agent here? Cameron & Co. had no agent here; no agent whatever in this matter but myself. I am quite willing to show you their letters to prove that. I am corresponding direct with Allison & Co.

3423. You said that the Government bought some Mogul engines;—what was the price agreed upon for

those engines? I can scarcely say from memory.

3424. Was it £2,000? We only deliver free on board, so that you would have to add freight, &c. You could get that better from the Commissioner.

3425. What firm supplied the Mogul engines? The Baldwin Company is to supply them.

3426. Have you done any other business with the Government on behalf of the Baldwin Company? Yes,

I have supplied them, a good while ago, with Seller's railway turn-tables. 3427. Have you sold any motors to the Government? Yes. 3428. How many? Fifty or sixty.

3429. Say within the last twelve months? Certainly from fifteen to twenty, including the Downes compound motors, which all passed through me, although ordered while Mr. Downe was in America. 3430. How many Downes motors were ordered? Only six. 3431. You have not received any further orders? No. We have offered to supply thirty at a very

moderate price.

3432. Who are the orders sent through from here, or who is the payment made to? My agents here are Towns & Co.; they do all the money business. They are Messrs. R. W. Cameron & Co.'s agents, and the engines come by their ships generally.

3433. Have you ever acted in conjunction with Towns & Company? No, except as agents between me and the Baldwin Company.

3434. They are your agents? Yes.
3435. Mr. Suttor.] They are the medium between you and Cameron & Co.? Yes; but I deal direct with Baldwin's; Towns & Co. are Cameron & Co.'s shipping agents, and everything is shipped through Cameron

3436. Mr. Teece.] Is the money paid through Cameron & Co.? No. 3437. Is it paid through Towns & Co.? Yes. The Baldwin Company draws for 85 or 90 per cent. on

the Agent-General in London, sending of course the account and the insurance policy and all necessary documents.

3438. But all moneys are paid to Towns & Co.? Yes, that is what is receivable in the Colony. 3439. Irrespective of the Mogul engines and the Baldwin motors, have you sold to the Government any 7 Oct., 1884. springs or brakes or couplers? I have never sold any brakes; no brakes whatever.

Esq.

H. G. C.

Woods, Esq.

A. Morris,

3440. Have you ever offered any brakes? No. Springs I have—of course the order was through us—from the Baldwin people. There was a Beale's brake sent here through Cameron & Co., and the Government tried it, and I believe it was not a good thing. None were ever sold to the Government through me. 3441. Did you ever act in the capacity of agent for Carson Woods & Co.? No; I never saw Mr. Woods

till I was introduced to him just now outside this room.

3442. Have you sold any couplings to the Government? No. 3443. Did you ever offer any? No, never. 3444. Do you know the Parry coupler? No; I am only agent for the Baldwin Locomotive Company, Wm. Sellers & Co., and the Edgmoor Iron Co. made wrought-iron turn-tables, but I never sold the Government any. I offered them, but as the Department drew out a specification for turn-tables which only suited English patterns, we never competed, and the consequence is it cost the Government-£80 or £100 more, being the extra cost in setting them; and it takes three men to move an English table round, while the American one only takes one man, or even a boy, a power of lilb. at the end of the lever being sufficient to turn an unloaded table.

3445. Mr. Poole.] Where is the table you are alluding to put down? I do not know where the English

tables are set.

3446. Mr. Teece.] You are quite certain no order has been accepted for any more of the combined motors and cars? Quite certain.

3447. Is your offer accepted? No, it is simply declined, I understand, till they have made some tests or some inquiry. I have offered them thirty.

3448. And none of these agencies were transferred from Towns & Co. to you? No, I was the original

agent, but I act with and often through them. 3449. But all the moneys are paid to Towns & Co.?

3449. But all the moneys are paid to Towns & Co.? Yes.
3450. Towns & Co. are the agents for Cameron & Co.? Yes, and have been for many years.
3451. You are sure they have not acted for the Baldwin Company? Only through me. Their connection with the Baldwin Company is simply through me. with the Baldwin Company is simply through me, I having first obtained the agency.

3452. Have you had any communication with the Department as to Railway bridges? For years I have

been incessantly at the Government with respect to them.

3453. Did you make any suggestion to the Government as to the bridge over the Hawkesbury? Yes, I suggested to the Government that they should call for tenders, with designs, all over the world, showing no favour to any one; and I will say that I know, absolutely know, that my advice will reduce the cost below the estimate at least £250,000. That I guarantee.

3454. Mr. Poole.] And the bridge will last as long? And the bridge will be a better bridge than ever was in the Colony before. I think I might as well say I have also drawn the attention of the Government to the appropriate and of iron winds to incompany advents on of iron winds to incompany advents on of iron winds to incompany advents on of iron winds to incompany advents on of the graph of the appropriate the same and the pr

the enormous advantage of iron viaducts in going through the mountains, instead of having these sharp curves and steep grades; and I have said, and I say now, that on the Illawarra Railway they would have saved £100,000. If you had an American locating engineer he would have saved hundreds of thousands on the Western Line; and you need never have had a Zig Zag at all if you had adopted iron trestle viaducts.

Henry Gilbert Carson Woods, Esquire, called in and further examined :

3455. Chairman.] You were asked to produce certain papers in regard to the patent? Yes, I have them (Papers produced.)

3456. Will you inform the Committee whether any duty has been paid upon any material used in connection with the dump-cars? I do not know 3457. Have you paid any? Not personally. I do not know. 7 Oct., 1884.

3458. From whom can we obtain that information? My managing man attends to all that. 3459. Who is your managing man? Mr. Campbell. 3460. What was the consignment invoiced as? Do you mean the bills of lading? 3461. Yes? I think it was material for the manufacture of dump-cars.

I think it was material for the manufacture of dump-cars.

3462. Mr. Teece.] Have you ever offered to the Government any Perry car-couplers? I sent in a sample

3463. Who acted as agent? I think I acted myself in that case

3464. Did you ever speak to Mr. Augustus Morris about it? No; the first time I have seen Mr. Morris to my knowledge was this morning, here.

3465. Mr. Suttor.] In submitting your price to the Government for these dump-cars I suppose you calculated all details as to what they would cost you? Yes.

3466. Did you take into consideration the Customs duties? No, I did not.*
3467. Were you under the impression, at the time you sent in your estimate, that you would get your

materials admitted free of duty? Yes, I was.

3468. Was that after inquiry? No, I made no inquiry.

3469. You cannot say whether you have paid any Customs duties or not? No; I do not see why we should; but that is not an answer to the question. I never calculated on paying Customs duties.

3470. You calculated on not paying them? I calculated on not paying them.

3471. Have the Government applied to you for any power-of-attorney in regard to the patent for the dump-car?

dump-car? Yes.

3472. Have you furnished it? No. I have not replied to their letter yet. 3473. Do you intend to reply? Certainly.

3474. How many applications have been made to you? One.
3475. Have you got a power-of-attorney in your possession? I have. The Government are only licensee under that patent; I hold the patent still; they will only get a license from me for their own use. That patent is good for the whole Colony still.

Mr.* Here again Mr. Woods made an appeal to the Committee to be permitted to send, for examination on dump-cars, the two aforementioned engineers.

MINUTES OF EVIDENCE TAKEN BEFORE THE SELECT COMMITTEE

Mr. George Downe called in and further examined:

G. Downe. 7 Oct., 1884. 3476. Chairman.] What is your position? I am the Superintendent of Tramway Rolling Stock.

3477. How long have you been so engaged? A little over three and a half years. 3478. What was your previous employment? I was in the Existing Lines Branch.

3479. In what capacity? As draftsman.

3480. You designed a motor called the compound motor? Yes.
3481. How long is it since you designed that motor? I commenced to make drawings of it last December

3482. On what date was the drawing approved of? I think somewhere about the first week in February of last year. I think that was the date of their completion.

3483. What was done to give effect to your recommendation? I was sent to America to get a motor made. 3484. Was any price arranged for? No.

3485. Who was that left to? I think it was left to Cameron & Company.

3486. Who are they? They are the agents of the Government in New York. I think they were to

arrange for the payment, but no price was arranged for making the motor.

3487. Cameron & Company are merchants? Yes.

3488. It was left to them to arrange everything as regards price? I do not think there was any arrange-

3489. Was any alteration made in your design by the American authorities? No. I may as well tell you what I did when I went to America. I was instructed by the Government to place myself in correspondence with them and to talk the matter over with them as regards any defects which we found in the motor. 3490. Mr. Poole.] That is, with the Baldwin Company? Yes. I told them that I had worked out a design

which I thought would overcome some of the difficulties we had experienced, but that I was prepared to talk the matter over with them and if they could give me something better than I had brought I was prepared to take it and to say that they had taught me something. We discussed the matter for parts of three days, and eventually they decided to make a motor according to the design which I had brought. That was done.

3491. Chairman.] Were any trials of the motor made? There were.
3492. What kind of trials? We ran the motor for several hundred miles on the Philadelphia and Reading Railway.

3493. Was the trial considered a success? It was considered satisfactory.

3494. Were any alterations made in the motor after it had been brought to the Colony? I think not.

Yes; we have had to make some little 3495. No alterations in the working parts of the machinery? alterations in the machinery. In this as in all other new designs little sore places were sure to crop up. We have had these little difficulties to contend with, but as they have risen we have grappled with them, and we are now, I think, getting pretty nearly to the end of them. 3496. Have any other motors been ordered? I think not.

3497. How many have the Government received altogether? Six.

3498. What did they pay for them? I cannot speak from memory. The cost is given in the Return which

was recently laid on the Table of the House.

3499. Have these motors proved the success which you anticipated that they would prove? I think I may

safely say yes. 3500. How many times during the last six months have they been repaired? Let me explain to you some of the little sore places which we have found, and you will perhaps then understand the matter better: When we were discussing the details a discussion arose between the Baldwin people and myself as to what description of piston valve I should put in. I had designed for rings and they considered that as we were working vertically, solid piston valves would do as well as rings. We did not agree upon that point, but I said, "In order to make a test we will make one side according to your idea, and the other side according to mine." We did so, and on the last day of the trial the rings broke on the one side. I said, "It is not worth my while to remain on this side for another month; you seem to have rather the best of me in this matter; make the other side solid and pack the motor away so that it can catch this mail." "It is not a very important item," I said, "we will make some further tests on the other side." That was done. In making the other solid piston they made it a very slack fit; consequently, when the motor was tried on the road here I did not get the result which I had obtained in America. After some little examination and trial we found that the valves were leaking steam very badly on account of the bad fit. I immediately brought the matter under the notice of the Commissioner and Minister, and by that time the other five motors which I was authorized to obtain had arrived. On another examination we found that they also were fitted badly. I brought the matter under the notice of the Minister, and told him the probable cost of the alteration. He immediately decided that the Baldwin Company should pay the cost. had another piston made and fitted in and it was tried, but it did not give satisfactory results, and I decided to drop back to my original idea of the rings. The motors have since been fitted with rings and they are giving very good results. Another matter which has given us trouble, another sore place, is the plan adopted for giving motion to the valves; it is what is understood as the Joy-motion. Joy has two kinds of motions—one a sliding link, and the other a pin motion. At the time that I designed the motor I knew only of Joy's link-motion, and consequently the link-motion was fitted on the first engine. The last day of the trial Joy's agent came down to go out with us. He then showed me the pin-motion. It is certainly superior. There are less frictional parts about it. It is simpler, easier to make, and easier to repair. After consulting with the Baldwin people I decided to put this pin-motion into the other five motors; but instead of adhering to Joy's design they altered it and made it lighter. We found in practice that they had so weakened the design that it was necessary to make it stronger in order that it might do its work. The result of this has been that we have broken one spindle and have bent some ten or eleven. I happened to have a print of Joy's own design, and I decided to follow it out. The motors have been so altered as to carry out the design in its entirety. The motors on the road with that alteration are not exhibiting any weakness in the parts in which it was apparent before.

3501. Was it a part of the contract that on condition of the motors here giving satisfaction the Government would order (say) twenty more from the Baldwin Company? If I remember the correspondence rightly it was stated that if the motors gave satisfaction here an order would be given for fifteen more. I think fifteen was the balance.

Mr.

G. Downe.

7 Oct., 1884.

3502. At the same price as the others? The price was a matter to be agreed upon.

3503. Was it not possible to carry out this design in the Colony? I think not.

3504. Why? There was not time to do it.

3505. How did you ascertain that there was not time? The position in which we were placed in regard to rolling stock was this: That we wanted an increase of motive power as quickly as we could get it. It was not obtainable from any firm in the Colony; they had not the power to supply it with the necessary speed. No firm, even in England, would have given me this motor in anything like the time—say double the time in which I got it made in America.

3506. But when you went to America you had no proof that the motor when made would be the success which was anticipated? When I went to America I took with me only a general outline, and after discussing the matter with the Baldwin people, and deciding that they could give me nothing better than I

had brought, I had to work out all the details of the design.

3507. Could they not have been worked out in the Colony? Yes; but not in the same time.
3508. How long is it since the first motor was imported? You are losing sight of one fact, and it is this: that there was delay after I arrived in the Colony. For this of course the Baldwin people are not responsible. No firm in England or in America could have turned out the work in the time in which they did.

3509. But it took a certain amount of time for you to go to America, to come back to have the motors fitted, and to have these trials;—are you taking that into consideration? Taking that into consideration no other firm could have turned out the work in anything approaching the time.

3510. Did you ascertain that? I knew the firm, and I knew their capabilities pretty fairly.

3511. Were any other firms in the Colony asked to do the work? I did not see my way clear to recommend it at the time. I did not think they could give us the work in sufficient time.

3512. Is it not usual in ordering rolling stock of this kind to invite tenders? But you must understand

that this was a new design, a departure from anything we had got, and we wanted to get a motor made and tested as quickly as possible. I suggested that after we had obtained sufficient to meet the demands coming upon us we should call for tenders in the Colony.

3513. I noticed a paragraph in one of the papers in which it was stated that one of the motors had been repaired twenty times? The information furnished to the House upon this point is strictly correct.

3514. Where did you obtain this information? From the reports as they occur.

3515. Mr. Poole.] Were you present at all the trials made on the Philadelphia and Reading Railway?

3516. Have you any note as to the days on which the motor was run? I do not think I have.

3517. Was the Superintendent of the line present? Mr. Steevey, the Inspector of the Philadelphia and Reading Railway, was present on behalf of the Railway Company.

3518. At all the trials? Yes.

3519. Are these motors numbered? Yes, from 70 to 75.

3520. I suppose the motor numbered 70 was the first made? Yes.

3521. And the first imported here? Yes.

3522. Are there any motors of this class running in America? There are not; it is my own design.

3523. Then the templates and every separate piece of machinery would have to be made in America? Scarcely, and for this reason—that in designing we brought in as much as we could of anything which they had got made. The cylinders and valves had to be new, but there were many parts in which we worked in some of the templates and other things which they had.

3524. But for every part of which they did not happen to have a copy a pattern had to be made? Yes. 3525. And these patterns and templates are in possession of the Baldwin Company? Yes. 3526. Will not that give them an enormous advantage over any other firm if tenders are called for any more of these motors? It will give them an advantage decidedly.

3527. And our Government has paid for these templates. That would be necessarily included in the cost of the first five or six motors? Well, I should say that they had. Of course some of the parts are from their own designs. They worked in all that they could.

3528. Previous to your appointment as Superintendent of Tramway Rolling Stock had you any locomotive

experience? No, I had not.

3529. What is the peculiar advantage which you claim for the motor which is now known as the Downe's motor? The advantages I claim are these: That we save in the weight of an independent motor by giving adhesive force on to the wheels of the engine from the car and the live loading. I also adopted the compound principle, as it is universally admitted to be economical. - I work the steam twice over, and thus effect a saving of fuel, and the motor is so arranged that it can be worked by one man instead of by two on each shift.

3530. You use the steam in the small cylinder first? Yes.

3531. Does that exhaust into a separate cylinder or direct into what you term the low pressure cylinder? Direct.

3532. Is there not a back pressure on the high pressure cylinder equal to the pressure per square inch on the low pressure cylinder? Of course there is.

3533. You claim for your motor that it saves one man—that is a fireman? Yes.
3534. Does the driver fire continuously? Very little attention is required to firing. The heating capacity of the boiler is increased to effect this.

3535. That is not an answer to my question, which is: Does the driver fire? Very little; he does not fire on the road.

3536. Does he fire at each terminus? There is no occasion to touch the fire after leaving Redfern for Bridge-street until he returns to Redfern. We have stationed an extra man there on each shift to attend to We have had to keep two fuelmen there to attend to the other motors; these men also attended to the two combined motors. Since four combined motors have been put on an extra man on each shift has been necessary. These men do the firing, occasionally also watering and oiling. 3537. How long have these four motors been running? Since yesterday.

3538. Previous to yesterday there were two? Yes. 3539. Running continuously? Continuously since June.

3540. Previous to that? There was one running from the beginning of May.

Mr. G. Downe. 7 Oct., 1884.

3541. It is necessary to have a "V" or a turn-table to turn these motors, is it not? Yes, or a circle, the same as we have at Coogee.

3542. How many men does it take to turn a motor around at Bridge-street? Two; one has been known to

do it; but two can do it easily.

3543. Independent of the driver? Yes; he does not touch it; when the engine comes in the car-cleaners. turn it around.

3544. If you had the whole of the service worked by these motors you would have more turn-tables at Bridgestreet than you have now? Yes, unless we adopted a triangle or a circle.

3545. Is there room for either? We could adopt a circle if the Act of Parliament would allow it. This

system would make the yard much better than it is, as it would avoid shunting to every train.

3546. Is there room there? I think so; we might put down another turn-table.
3547. Is there room for a circle or a triangle? Not in the present yard.

3548. Supposing that these motors were adopted generally, you would require a turn-table, a circle, or a triangle at each terminus? Yes.

3549. In the summons which you received to attend to-day were you requested to bring any drawings of the motors? No.

3550. Chairman. Was not such a request written on the inside of the sheet? I did not notice it.

3551. Mr. Poole. You have a working model of the valve arrangement? Yes.

3552. Is that the only working model which you have of any part of the motor? 3553. Can you bring it here? Yes.

3554. Have you drawings in detail of the whole of the machinery? Yes.

3555. Can you furnish us with those? Yes.

3556. Do you find from your experience of the working of the motors that there is any saving in the cost of repairs compared with that of the Baldwin motors—take the first four that you had out; I think that they were of the class which you call heavy motors? We call them independent motors. I think that I am safe in saying that we do find that there is a saving.

3557. To what extent? I will give you one instance: We find that the side rod brasses of the ordinary

motors require a new set all around once in about every six weeks. 3558. As often as that? Yes; because the wear on them is so heavy. In that time they do something over 3,000 miles of running. One combined motor has done nearly 5,000 miles, another has done something over 4,000, and the others have done between 1,000 and 2,000. The two which have done the greatest amount of mileage are as good now, as far as the side rod brasses are concerned, as they were when they were put on the road.

3559. Are there no other repairs peculiar to these motors—motors from 70 to 75—beyond those to the valves and spindles? Nothing beyond the bending of the valve spindles. I may mention another thing: I was induced to try a metallic packing which in a great many instances is giving very good results, but it did not give satisfaction on these motors, and I have had to replace it with the ordinary glands and packing. 3560. Are we to understand that with the exception of the weaknesses which have been discovered in the valves and spindles and the packing that the new motors require no other kind of repairs? They are far lighter on repairs than the other motors.

3561. They cast very little strain on your repairing department? A much lighter strain than the other motors

3562. When are they repaired? At night, when they are not on the road. Very few repairs are done to them. 3563. The other motors are repaired at night are they not? Yes. The repairs booked to the new motors at night are much lighter than those booked to the others.

You commenced these motors with No. 70? Yes.

3565. Then I presume that you ran motor 71, and that you have kept these two motors running until quite lately; you have not used the whole of the motors? We have had to keep the traffic requirements supplied. Thus when the spindle of one motor was bent or broken we had to put another motor on. 70, 71, 72, 73, and 75. 74 was not started until yesterday. I kept it in until all the alterations were made to the valve gear throughout.

3566. In relation to the amount of work done by them—the number of passengers which they carry—do you find that they are more economical in the consumption of coke than the other motors are? Much more. 3567. What percentage? With all the drawbacks against which we have had to contend—such as leaky valves—I find that since the motors have been running—taking the whole consumption throughout—we have saved about 30 per cent. in fuel. That is more than I calculated we should gain—my estimate was 20

per cent.
3568. How is the fuel supplied to them—by baskets or by weight? By baskets, two of which take a bag The fuel is served out in the same way to the other motors.

3569. Was there not an inquiry in your Department lately with respect to the difference between the amount of coke received and that tallied out? I have to make a return of that every month.

3570. Was there not a discrepancy over a given period? There is always a discrepancy between the drivers' sheets and the quantity received; there is bound to be.

3571. What did it amount to on the last occasion? I could not tell from memory. 3572. Was it 30, 40, 50, 60, or 70 tons? I cannot say from memory. 3573. The fuel is supplied in the same way to all the motors? Yes.

3574. Do you find when the new motors are in steam that they prime at all? They did at first. 3575. Do they do so now? Very rarely. I get no complaints from the drivers to that effect.

3576. Has the cast-iron saddle spanning the boiler on which the two sets of cylinders are bolted been found

strong enough? No, we have strengthened them.
3577. How many have been broken? Three, I think; but we have strengthened the others to make sureof their not breaking.

3578. Are all the repairs to the new motors done at night? The alterations of the valves and valve spindles. have been made in the day-time.

3579. Is there a distinct record kept of the repairs done to these motors and to the other motors? Yes. 3580. Has any complaint reached you of the new motors sticking up on the hill coming up from Belmore

Yes. Park 3581. With one car attached? Yes. 3582.

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3582. What do you think is the cause of that? Shortness of steam and defective valves. Owing to the G. Downe. blowing of the valves the engines have used considerably more steam.

3583. Would it not arise from priming? Yes, if they did prime; but I have had no complaint of their 7 Oct., 1884. priming recently.

within

3584. Since when? I have had no complaint of priming within the last two months.

.3585. Are the drivers who are working them satisfied with them ? They have made no complaint to me. 3586. What are the names of the drivers? Harris No. 2 and H. Walker on one; Bastian and Cheval on

3587. These are the men who were driving up till yesterday? Yes.
3588. Are they working now? Cheval has had to be relieved on account of sickness.
3589. Who is working in his place? Bullis.

3590. Have any other of the men had to be relieved? No.

3591. Who are driving the new motors put on recently? Harris No. 1 (I forget the name of his mate), and Black and Osborne.

3592. Who is immediately under you—more directly over repairs—at Randwick? Mr. Howe. 3593. Who is under him on the day-shift? Mr. Garforth. 3594. Who is the night foreman? Mr. Allen. 3595. He is over the fitters at night? Yes. 3596. Who is at the Pitt-street yard? Mr. Davey by day, Mr. Brown by night. 3597. Who is immediately over the drivers? Mr. Hondy was the supplier foremen. 3597. Who is immediately over the drivers? Mr. Hendy was the running foreman. 3598. Who occupies the position now? Mr. Albert Brown.

3599. Is that the Brown you mentioned before? No.

3600. I suppose that you would be able to give the Committee a drawing showing the grate space, the water space, the clear room above high water mark for the steam space, the steam capacity, and the consumption of steam per throw of the piston-rods? Yes.

3601. Taking the thing all in all, is it your opinion, after some four or five months' experience, that if the Government adopted this system of motor it would result in a great annual saving to the Department? Yes. 3602. That is your deliberate opinion? Yes.

3602. That is your deliberate opinion?

3603. Can you tell the Committee what the percentage of saving would be as compared with the present motors? For the number running at present from £15,000 to £20,000.

3604. Per annum?

3605. That is your deliberate opinion as to the financial result in saving? Yes.

3606. Coming back to the design;—that, you inform the Committee, is solely your own? Yes. 3607. Prior to making that design how long had you been in the Colony? About nine years.

3608. And of course you were well acquainted with the capabilities of not only the Government workshops but of the workshops of all the Colonial firms who lay themselves out specially to make locomotive machinery? I think I know them pretty well.

3609. Are you aware that locomotives have been built in this Colony? Oh yes.

3610. Where? At the Atlas Works, Vale & Lacy's, and Mort's Dock.

3611. Anywhere else in this Colony? I do not remember.
3612. In the Government workshops? Yes, they have been built in the Government workshops.

3613. And they are constantly making large repairs at the Government workshops? To engines—yes.

3614. What I want to know is, what special reason you had for going to America,—we have pretty good workmen here, I presume? Yes.
3615. And fair machinery? Yes, for a general shop.
3616. And a reasonably large number of motors have been built in the Colony? Engines—yes.

3617. Then I should like to know what were your special reasons for going to America, you being the designer and having all the plans? You must understand that I had only a general plan; the details had to be worked out afterwards.

3618. But you worked out the details? I worked out the details with the draughtsmen employed there. Sometimes four or five men were employed.

3619. Then you felt the necessity of obtaining assistance from the draughtsmen employed in Baldwin's place? Not a necessity to obtain the assistance of those particular men, though there can be no doubt that having men thoroughly used to that kind of work as they are it could be done more rapidly than by men who would do the work as an occasional job.

3620. But you came before the Committee as the inventor of the combined motor and car, and I presume that you had fully considered all the details? Yes.

3621. Well I wish you to inform the Committee what special reasons there could be for you to go to America to have the details worked out when you were thoroughly master of the position here? What you are speaking of and what I have in my mind are two different things. There was no necessity for me to have the Baldwin people to work out the details; I could have worked them out here as well, but the necessity arose in consequence of the shortness of time. We were in want of rolling stock and we had felt for a long time that the Baldwin motor was a very expensive motor and that something more economical was The Government were constructing new lines and we were forced to order Baldwin motors to keep those lines going. It was necessary therefore that the design should be worked out in the shortest possible time, and it was considered that the Baldwin works, with the appliances at their command, could furnish us with a motor made from that design in as short a time as such work could possibly be done.

3622. When did you go to America? Last February 12 months.

3623. And up to within a week or ten days ago you had only two additional motors on the road? Yes.

3624. That is to say that so far as this idea of yours is concerned, the tramway rolling stock has received

the benefit of two motors only of the new class up to within a few days ago? Yes.

3625. Does it not appear to you that assuming the new motors to have all the merits you claim for them, no great harm, even financially, could have resulted from ordering a couple more of the ordinary Baldwin motors until you had thoroughly worked out your design here? While I was away twelve of them were ordered, and they were landed after my return.

3626. In reality, whatever press there was upon the Department to furnish additional motive power owing to the extension of the tramways, it has only had the benefit of two of those new combined motors up to

Mr. G. Downe. 7 Oct., 1884. within ten days ago? Yes, but there is another thing to consider: When I was in America I wrote, giving the particulars required for a table to turn the new motors so that they might be put on the road directly they arrived. After I returned to the Colony there was a delay of six months before the table was ready, although the motor was ready, so that the whole of the delay must not be saddled on the motor.

3627. How many cars have you that are adapted to run with these motors? Seven.

3628. And when was the last combined motor imported;—the last five were imported in one batch, were they not? No, they came in three batches; two by different steamers,—and then one came by a sailing vessel, if I remember rightly.

3629. When did you get the last? The last one came, I think, in May of this year.
3630. And then as well as now you were pressed for locomotive power; you are pressed for locomotive

power now, are you not? Yes.

3631. When had you the seven carriages? I should think that the last was delivered about two months ago. 3632. Then can you explain to the Committee why the whole of the motors have not been running? I have limited the accommodation at Randwick for performing the work of the motors that are running, so that I have been longer on that account in remedying the little sores or defects in the new motors.

3633. That is why the delay has occurred? Yes.

3634. Then it has taken you since May last to overcome these minor matters? Yes.

3635. Owing as you say to the want of machinery and men to perform the necessary work?

3636. Now, I wish to ask you a few questions with respect to the cars themselves. Some of them-Nos. 100 and 101—were the two first cars running, were they not? I think No. 101 was, but I am not quite sure.
3637. Have any of the cars shown signs of deflecting from the horizontal line? Yes.

3638. Whereabouts? Near the junction, between the engine-cab and the sitting capacity.
3639. What is the extent of the deflection? Well, with a load on I suppose it is fully an inch and a half.
3640. But without a load is there any deflection? Yes, slightly.
3641. How do you propose to remedy that? There is no fear of any danger arising from the deflection that is at present shown. That was felt to be a weak part in the car when it was designed, and in order to overcome it I divided the sole-bar into two parts, carrying an iron flitch-plate the whole width of the sole-bar, between the two parts, and extending it back some 4 feet beyond the weak point. The inside one, which forms the hinge of the door, is also a flitch-plate carried back about 4 feet beyond the cab connection.

3642. By a flitch-plate you mean a covering plate, do you not? It is like a flitch-beam in a house between two pieces of wood. There is one of them between the two parts of the sole-bar and another on the inside of the sole-bar, and they are carried about 4 feet beyond that point of connection between the cab part and the passenger part, and secured by bolts through the sole-bar.

3643. But in spite of that protection the cars have deflected? They have deflected a little.

3644. I take it that there is simply a butt joint and that the flitch-plate makes a connection between the two? No; the sole-bar is in one piece right through, and there is a flitch plate between the two parts of the sole-bar carried back for 4 feet. The inner flitch-plate is carried back in the same manner so that the whole thing is in one piece.

3645. Have you detail drawings showing this? Yes. 3646. And you can produce them to the Committee? Yes.

3647. The motor here numbered 70 was the only one under steam in America? Yes.

3648. The only one that you saw under steam there? Yes; they always tried them under steam before they sent them out.

3649. When you came to put the motor together here did you experience any difficulty in getting rid of the condensed water from the cylinder? None that I am aware of.

3650. Provision was made for that in America? Yes, there are always relief cocks.

3651. If they had not relief-cocks they would knock the cylinder end out?

3652. You are confident that they were in when you saw the motors in America?

You had no difficulty in fixing the boilers to the framework? No.

3654. The stude went into the holes ready for the frame? Yes; we eased the holes to allow for expansion. 3655. What workmen have been particularly engaged in the repair of the combined motor? There is one

named Davidson who has been at work on them.

3656. Anyone else? There have been others; but I cannot just now recollect their names.

The foreman you know? Yes.

3658. Have you made any report to the Government with respect to the superiority of this motor over the ordinary Baldwin motor? I have expressed the same opinion as that which I have expressed to the Committee.

3659. Summing up the whole matter, are you of opinion that if the whole service were supplied with this particular class of motor—the Downe's motor—there would be a saving of from £15,000 to £20,000 a year?

3660. Have you taken into consideration in that estimate the extra accommodation and appliances in the shape of turn-tables, circles, or triangles, which would have to be provided at each of the outlying termini? No, I have not taken into consideration the interest. I have not taken these matters into consideration at all, but my own running simply.

3661. Have you not running now Baldwin motors which have been running four months without the slightest repairs? Not one.

3662. Have you any that have been running two or three months? I think there is one which has been running two months.

3663. I include in that reference to repairs the alterations to the side rod-brasses? There have been none on the ordinary motors which have run for two months without repairs.

3664. Are you quite sure of that? I am.

3665. How long has Mr. Howe been with you? He was transferred to the Tramway Branch when I went to America.

3666. Is he a mechanic? Yes.

3667. And he is well used to locomotive machinery? Yes.

3668. He is competent to give an opinion? 3669. Is Mr. Davey a mechanic? Yes.

3669. Is Mr. Davey a mechanic?

3670. And also competent to give an opinion? I do not know that he has looked into the matter. 3671. If you requested it he would do so? I have no doubt he would.

Мr.

3671. If you requested to he would do so? I have no doubt no notice of the Pitt-street yard? He is the mechanic in charge of the Pitt-street yard? Oct., 1884. at night.

D. W.

Campbell.

7 Oct., 1884.

J. Powell,

Esq.

3710.

3673. Mr. Hendy;—is he a mechanic? Yes.

3674. A good man? A fair young man.

3675. How long has he been employed as running foreman? For the last two years and a half.

3676. But he is not running foreman now? No. 3677. What position does he hold? He is temporarily filling the position of officer in charge of the Pittstreet yard in the day.

3678. You say that Albert Brown is a running foreman? Yes.

3679. Is Brown an engine-fitter? Yes. He came from America with the first motors.

3680. He is a fitter—not a mere driver? He is a fitter; I believed he served his time at the Baldwin works.

3681. Mr. Allen—is he not foreman of fitters? Yes.

3682. How long has he held this position? About two years.

3683. And of course you have found him a trustworthy man? Yes.

3684. The trifling repairs which have been found necessary in the combined motors have been effected under his immediate superintendence? Yes. It might facilitate your inquiry if I were to send up the book in which the repairs are entered, containing everything that is done to every engine every night.

3685. Mr. Teece.] What is the difference in cost between the Baldwin and the combined motors? The

Baldwin and the combined motors cost about the same.

3686. What is the cost of the combined motor and car delivered on board a vessel in America? The cost of the car, if I remember rightly, was from £530 to £540. The last five motors have been built at a cost of £1,150 each—that is delivered.

3687. What is the price of the Baldwin motors? It varies according to their class. to over £1,200. 3688. Very few? All the large ones; and the bulk of those we have are of the large class.

3689. How many Baldwin motors have you altogether? About sixty-five I think; I am not quite sure. 3690. How many out of that number are running—that is to say approximately? About forty-five.

3691. You say that only two of the combined motors have been running;—where have the other four been? I explained that the limited accommodation we have prevented me from getting the valves altered and getting them out sooner.

3692. Then none of the four have been running? We have running Nos. 70, 71, 72, 73, and 75. No. 70 has done 4,882 miles; No. 71, 2,311; No. 72, 1,809; No. 73, 4,008; and No. 75, 1,386 miles.

3693. Mr. Poole.] About what mileage per week do the motors run—say to Waterloo and Marrickville, and taking another point of about equal distance, say Waverley? They average from about 70 to 90 miles a We have two which are running from Moore Park to Randwick and Coogee, 120 miles a day.

3694. About 600 miles a week? Yes, or over 2,000 miles a month.
3695. What is the highest rate? 4,882 miles is the highest a combined motor has made.

Daniel William Campbell called in and examined:

3696. Chairman.] You are in the employ of Carson Woods and Company? I am.

3697. Can you inform the Committee whether duty is paid on the timber imported for the dump-cars? No. 3698. Nor on any of the material? It was imported as car material and we passed it as car material.

3699. No duty was paid? No; there was a small duty on nails.

3700. What amount? Between £2 and £3.

3701. There was no duty on the timber; No.

WEDNESDAY, 8 OCTOBER, 1884.

Mr. CHAPMAN, Mr. POOLE,

Present:-MR. SUTHERLAND,

Mr. TEECE,

Mr. WRIGHT.

SYDNEY SMITH, Esq., IN THE CHAIR.

James Powell, Esquire, called in and examined:—

3702. Chairman.] You are Collector of Customs? I am.

3703. Are you aware whether any dressed or undressed timber has been received at Dibbs' Wharf on which no duty has been paid? I am not aware.

3704. Is it usual to charge duty on any dressed or undressed timber arriving at any of these private 8 Oct., 1884. wharves? It is.

3705. What is the duty chargeable on dressed or undressed timber? 2s. on dressed and 1s. on undressed

timber per 100 feet superficial. 3706. Has your attention been directed to the receipt of any dressed or undressed timber consigned to

Carson Woods & Company? No. 3707. Or to Mr. J. C. Dibbs? No. My attention would not be called to it unless there was something special in reference to the parcel.

3708. Whose duty is it to see to the payment of the duty in such a case? The officers connected with the

Department of Customs.

3709. Can you tell the Committee what officer was in charge of that particular wharf? The landing-waiter on the station would be responsible for any dutiable timber landed there. 1043—P

J. Powell, Esq. 8 Oct., 1884.

3710. I may tell you that we have sent for you as we have been informed that the materials for 200 dumpcars have been landed, some at Dibbs' Wharf and some at Darling Harbour, at the old Atlas Company's works, on which no duty has been paid? If the goods were for the Government and entered by the Government they would be admitted free of duty. They could not possibly be entered free by any private

3711. Mr. Poole.] That could only happen when goods are consigned direct to the Government? Or

imported for the use of the Government and entered by the Railway Department.

3712. Would that affect materials imported into the country under contract to supply the Government with certain articles? My instructions generally are that I am to be satisfied that any goods entered free by the Railway Department are consigned to the Government. That is the general instruction under which I have On one occasion, when I found that railway material had been imported and entered free of duty under a declaration that the goods were for the Government, I demurred, and was informed that the contract allowed the admission of the goods free of duty, but until I was so informed I hesitated to admit them and always have done so. As a rule I only take the entries of a Government office—say the Railway Department or the Works Department—with a declaration that they are imported for the use of the Government. 3713. Your attention having been called to the subject will you make inquiry in your Department and inform the Committee who made the declaration and on whose behalf it was made? Yes, I will undertake to do that in half-an-hour. (Witness withdrew; and, being subsequently readmitted, his examination was continued.)

3714. Chairman.] Do you now produce the papers in the case before referred to? I produce the papers of the ship "Earl Granville," from Boston, the Custom-house free entry for 9,555 packages of frames and buffers for car-trucks; also an entry for two cases of car-couplers, free of duty; also an entry for thirty-two kegs of nails, found contained in the frames of the cars, upon which nails duty was paid; they were landed with the frames and buffers, and according to the practice the landing-waiter called for the invoices and examined them, and charged the duty on the nails. They were entered by Carson Woods & Co., by their agent, Mr. L. F. Ebsworth.

3715. Mr. Poole.] These articles are on the free list. We consider them free; we do not regard them as timber either rough or dressed; they have undergone a process of manufacture. A number of other articles are imported in the same way-settees, chairs, waggons, buggies-these are admitted free, as

having been made up. I should add that these goods are valued at £2,000.

8716. Mr. Wright.] That value is merely for statistical purposes? Yes, and is not very reliable.

3717. Chairman.] Can you inform the Committee at what wharf these goods were landed? I cannot say where they were landed; I believe they were landed at the Government Wharf, at the head of Darling Harbour.

3718. Is it not usual to charge wharfage rates on all goods landed? Yes.

3719. Do you know whether any wharfage has been charged? I do not know. That would be a private matter between the importer and the wharf-owner.

Mr. Henry Bryant Howe called in and examined:-

Mr. H. B. Howe.

3720. Chairman.] What is your occupation? I am general foreman of the Tramway Locomotive Works. 3721. Have you been long in that position? Since February, 1883. 3722. Where were you employed previously? In the Railway Locomotive Department:

8 Oct., 1884. 3723. How long altogether have you been in the service of the Government? Over twenty years.

3724. During your term of office as foreman of tramway locomotives I presume you have had opportunities of judging of the merits or otherwise of the combined motors? I have so far.

3725. Will you kindly inform the Committee what is your opinion of the combined motor—that is, whether it is better or equal to the ordinary motors, and in what way you think it is so? It is better in some

respects as to economical working.

3726. In what way is it better? As to consumption of fuel, &c.

3727. Do you find the maintenance of the combined motor costs more than that of the ordinary motor in regard to repairs? For repairs for general wear and tear there has not been sufficient time to demonstrate it

3728. How long is it since the first combined moter ran? I believe it was about the 1st of May of the present year; I am not sure. 3729. How many have you in stock at present? Six engines and seven cars.

8730. How many are in daily use? Four.

3731. There are four running at the present time? Yes, in traffic.

3732. How long have the four been running? The four have been running from the beginning of the week, starting last Monday.

3733. How many were running previous to that? Two for some considerable time.
3734. Why were not the others running before? They were not completed; some slight alterations were being made to them.

3735. Since the four have been in use, during the present week, have you had any breakdowns? No.

One had a slight mishap the other evening through the diaphragm rubber bursting.

3736. In what way do you consider them superior, besides the economical use of fuel, to the ordinary motor? Well, I can say nothing unless it is as to the ultimate development of wear and tear; there might be a saving in that respect. There is a saving of a fireman on them; there is no fireman used on

3737. Have you heard of any complaints from any of your men driving these combined motors? I have not.

3738. Have any of them asked to be removed from the motors? Not to me. I know that driver W. Cheval asked to be removed because he had not been well, and because his father was ill at the same time; he asked to be allowed off.

3739. Did he attribute that to the driving of the motor? Not to me.

3740. You are aware of the terms of the contract with the Baldwin Company for the supply of these engines? I am not.

3741. I presume you are aware that the combined motor was designed by Mr. Downe, of Sydney? Yes. You are acquainted with the various workshops in the Colony, and have had large experience with

regard to machinery? Yes, thirty-two years experience.

Mr. H. B. Howe.

3743. Do you not think it is possible for this design to be worked out in the Colony? It is possible for 8 Oct., 1884. it to be done, but it would take a long time to do it.
3744. How long do you think it would take? There are no appliances and conveniences for doing

anything of that kind here at present.

3745. Have any motors been manufactured in the Colony? Yes, one motor.

3746. Do you think we have workmen here and machinery capable of manufacturing motors? Yes. 3747. Do you think they could make them equally well or better than they are made by the Baldwin Company—more serviceable or otherwise? Quite equal, if not better; better, I think. 3748. In your time you have made locomotive engines? I have.

3749. What is your experience of the merits of American engines and of engines made out here at the workshop under your charge? Our own are superior in workmanship and durability.
3750. What about the cost? They cost more.

3751. Do you think the extra cost is repaid by the durability? I would like to qualify that answer. Those that were built at the Railway workshop, which you allude to, I presume, were built under difficulties. The repairs of general engines had to be conducted at the same time, and very often the work on the new engines had to be laid aside to allow of general repairs being done, consequently making the work more costly.

3752. Are these objections got rid of now? They will be when there is more machinery there; not at

present they could not possibly do it.

3753. Have you any idea how many times the compound motors have been taken into the shop for repairs since they commenced to run? From twelve to fifteen times altogether I should imagine, as near as my memory serves me now.

3754. Mr. Poole.] Can you inform the Committee what were the special difficulties in the way of working out the details of the invention, and why it was necessary to go to America to get these details worked

out? Because they have better facilities for completing the job.

3755. Working out the details of the design? I do not think there were any details of the design worked out there; there might have been some slight alterations in detail, but not altering the original design of the motor.

3756. As far as you are aware the motor known as the Downe motor is the first of the kind? As far as

I am aware it is.

3757. There is nothing in America similar to it? Not that I am aware of.

3758. Necessarily there was no pattern to work to there? No.

3759. All the templates, all the moulds, and other matters would have to be made just as much at the Baldwin works as in Sydney? Yes.

3760. And yet, in view of that, you think these matters could have been accomplished much more rapidly in America than in Sydney? Yes, in large workshops like the Baldwin, because they are laid out specially for that work; they are locomotive builders and nothing else, and they have men always trained from their-boyhood to template making and all this work.

3761. The first motor-I think it is No. 70—that was imported here of this particular class, known

as the combined motor, was put to work about May, was it not? I believe so. 3762. You have had a long practical experience of locomotives of all kinds in this Colony? I have. 3763. Are you aware that it was a very common occurrence for this first motor to fuse the fire-plug? No. 3764. Was no such case brought under your notice? I was on the engine in every case but one when

the lead plug—or the fusible plug—dropped.

3765. How many times did that happen? Twice; not on that particular engine. I could give a reason

how it happened.

3766. Have you noticed or had any complaints made to you of the continual priming of the boilers of these motors? There was some trouble with the first one.
3767. Continually? Not continually. That has been remedied; I remedied it myself by putting an

internal perforator pipe up from the crown.

3768. Is there as much steam space in these boilers as in the boilers of the ordinary motors? Hardly

3769. The cylinders are so arranged as to use the steam twice,—that is, once in what we may term the high-pressure cylinder, and then again in the low-pressure cylinder; but there is an arrangement by which you can use the steam direct in both cylinders? Yes.

3770. That, I presume is to overcome heavy inclines with a heavy load? I am not thoroughly acquainted

with the designer's idea; but I understood that the valve referred to was to be used in case they had to

stop on a hill, and the smaller cylinders were not capable of starting the train again.

3771. From your practical knowledge as a locomotive engineer, will you answer this question: Suppose the motor is coming up the incline from Coogee, would it be possible for the boiler to produce steam enough to work the four cylinders direct from the boiler? No; that was never intended.

3772. It could not be carried out? No, not to work continuously.

3772. It could not be carried out: No, not to work continuously.
3773. Come to another part of the subject: The steam exhausts from the high pressure cylinder direct into the low pressure cylinder? Yes.
3774. Then is it not an absolute fact that whatever pressure to the square inch there is on the low pressure. cylinder, there must be the same corresponding back pressure on the high pressure cylinder? Yes, it stands to reason there must be.

3775. Then, in theory, all the effect you gain is in the difference in the two diameters of the cylinders?

3776. Is it not a fact that, owing to the small steam space and also the small margin of water space over the crown of the flue, there is very great difficulty in either preventing the engine priming, on the one hand, or losing the fire-plug on the other. In order to get more steam does not the driver, with this peculiar description of boiler, run great risk of losing his fire-plug? It did happen at first. The men ever strange to them. The ordinary description of boiler was so simple that a man could hardly make a mistake. The men at first were not accustomed to these boilers, but now, since they have got used to them, it is a long time since a lead plug was dropped.

Mr. H. B. Howe. 8 Oct., 1884. 3777. Have you not had a considerable amount of difficulty with your valves and valve spindles? Yes. 3778. Did that arise from the severe pressure of the valve upon the face? No, there is no face; it is a

circular valve or a piston valve.

3779. You did experience a considerable amount of difficulty, did you not? They were broken and bent. Those are in fact the principal break-downs that have occurred to these engines; any others have been no more than would have occurred to ordinary motors. Most of the twelve or fifteen break-downs that have occurred I attribute to that.

3780. Can you give the Committee any rough idea in pounds what it cost to repair No. 70 motor in this particular respect—the valves and the valve spindles? No. 70 motor has never broken down in that way. 3781. Which one did? 71 and 73; these are the others that have broken down; there is a slight differ-

ence in their design.

3782. Is it a fact that night after night the men on duty at Randwick have been kept principally repairing these defects in the combined motors? No, it is not a fact; there is a man sent to them; there might be one man working every night or every second night the same as at any other engine; but it is not a fact that there is any staff of men employed upon them.

3783. You know the cast-iron saddle which spans the boiler upon which the two sets of cylinders are

Yes.

3784. Have any of these been broken in action? Yes.

3785. How many? I think they are all but one broken or cracked through the centre.
3786. Was that one strengthened before it left the Randwick shop at all? Yes; the first ran some considerable time before we did anything to it; and it was not till after it was running in Elizabeth-street for some time that it got broken. The road being somewhat bad we attributed the breakage to

that cause, and to its being a sore place.
3787. Is it a fact that the whole of them have cracked or broken across the saddle? Yes, they have

shown cracks or signs of weakness.

3788. Is it reasonable to suppose that vertical machinery like this—the main action of the engine being in a vertical line—can act as easily and with as little injury to itself on a rough knotty road as horizontal machinery? It can hardly be expected to do so. That is a thing that remains to be developed. Time will demonstrate that.

3789. But taking an ordinary practical common sense view of this matter, based upon your long experience of locomotive machinery, would it not be your opinion, looking at the almost utter impossibility of keeping the roads to a nice level, as the railways can be kept, be against vertical machinery?

3790. Take the heavier class of ordinary Baldwin motors, say the first four numbers—1, 2, 3, and 4—looking at the work they have done, and when in good order can do—taking, as I have seen myself, as much as three loaded cars, ninety-passenger cars, up the incline at Liverpool-street,—do you consider that the compound motor is an economical machine, in view of the work that it can do, as compared with the Baldwin motor of the type I have just alluded to? The compound engine was never intended to, the Baldwin motor of the type I have just alluded to? take such loads.

3791. That is to say, it cannot do it? No, it was never designed to do it.
3792. The car attached to the compound motor, when filled with passengers, is about up to the maximum

performance of the motor? It should do it easily.
3793. Has it not come within your own experience that motors of the type I have alluded to have often taken three of the double-decked cars loaded with passengers? Not three ninety-passenger cars; one

ninety and two sixty.

3794. They often take two ninety-passenger cars? Yes, under favourable conditions.

You have informed the Committee, in answer to the shortness of the Chairman's question, that beyond a saving in fuel you are not prepared yet, owing to the shortness of the time these combined motors have been in action, to say whether any other saving will arise through their use or not? I am not.

3796. And until you have had a much greater experience of them than you at present possess, would you consider it a reasonable thing to order twenty or thirty more of them, provided the responsibility rested solely with you? Putting it to myself, under the circumstances I think I would not. I should like to have more time; must have had more experience before I undertook such a thing.

3797. Have you made any estimate yourself from your own observation of the probable saving in fuel?

I know from returns, and I can vouch for their accuracy.

3798. Speaking from the returns in which you have such confidence, about what will be the saving percent. in fuel as compared with the ordinary Baldwin motor? About 30 per cent.

3799. Let us be clear upon this question: Do you wish the Committee to understand that there will be

a saving of 30 per cent. in fuel, as compared with the Baldwin motor, with the same amount of work done, not by the same motors, but with the same amount of work done? How are you to get at it unless.

aone, not by the same motors, but with the same amount of work done? How are you to get at it unless you take the mileage?

3800. I ask you to give your answer in relation to the work done by each class of engines—would there be a saving then; it would be very easy to say there is a saving when one machine employed is only doing half the work of the other. Take the work in foot pounds, never mind about the mileage? It is a question which we cannot get at under present conditions. The only thing you could do is to order a return to be got out from the engines before the combined motors came here. You could take a new present working on the Redfam line running precisely the same twings at the compounds do at the present engine working on the Redfern line running precisely the same trip as the compounds do at the present time, and averaging these trips for a week you would be very little out. Now, within the last few days, these four engines being upon the Railway, and comparing against the Baldwins running exactly the same trips, because I do not suppose there are two passengers different at certain times in the morning, would are the desired comparing. give the desired comparison.

3801. I wish to take another view of the subject: Suppose with a certain number, say twenty, Baldwin motors of the type of the first four, you are able to do a certain amount of work, these engines working up reasonably to their fair power every day, you place a number of compound motors on the same line to do the same amount of work;—would you be able to do it with the same number of motors, and then effect a saving of 30 per cent. in the fuel? Well, I cannot see why it should not be; but I have not yet.

had sufficient experience to warrant giving a decided opinion for all times.

3802. Will any one of the compound motors do the same duty in foot-pounds per day as the Baldwin of the type of the first four imported, trying both engines up to their best? No; I do not think they

Mr. H. B. Howe. 8 Oct., 1884.

3803. What then would be the difference, do you think, in duty in favour of the ordinary Baldwin engine. Would it be 10 or 15 or 20 per cent.? It is a question I am not prepared to answer just at present; I could get it out.

3804. At any rate you are clearly of opinion there would be a margin in favour of the Baldwin motor of the ordinary type first imported? That is the same number, placing one against the other, to do the same work. The comparison is hardly fair; they are not designed to do the same work; these compound motors are designed more for economy

3805. You must, I am sure, observe that if we are asked to give an opinion of the relative merits of the two engines they must be placed under precisely the same circumstances as to duty before we can For instance, the Baldwin motor may be able, and is often called upon to do a duty of a hundred thousand foot-pounds, working up to fair maximum power. If you place a compound motor in the same position and it does duty up to 70,000 foot-pounds, and you claim a saving of 30 per cent, does it not appear clearly to you there is no saving? In that light there is not, but they were never intended for that.

3806. It is not what was intended but what they are capable of doing? It is nothing but fair to the designer of a machine to consider what it was intended to do. The machine is designed to do certain work. If a boy can do the work of a man it is economy to employ him.

3807. Perhaps it is my fault in not making myself properly understood. The question is now, first, that you have not had sufficient experience of these compound motors to enable you to give an opinion that there will be any saving in ordinary wear and tear, as compared with the ordinary Baldwin motor; second, you are of opinion that there is a saving of 30 per cent. in fuel. What I want to get at is, if the Department is satisfied to order a new set of motors on the combined principle to supersede the present motors, would you be able to do the same amount of work as you now do with the ordinary Baldwin motor—would you be able to do that work with the same number of motors of the combined class? It is a question which requires some little consideration. You are putting it to me in a different form. Engine for engine, I do not suppose we can. But, as I said before, it was never intended.

3808. What I presume was intended was that this light kind of engines should be used for light lines? 3808. What I presume was intended was that this light kind of engines should be used for light lines? I could not say what was the intention in designing them. The intention, to me, appears to have been general economy throughout; that is, not to run a large engine where such an engine, as the combined motor, which could be worked more economically, could be used. These are questions I have not gone into. I had nothing to do with the combineds before they were brought here.

3809. If it is plain that there is a direct saving to the Department by the use of four or five of these engines, does it not follow, as a logical sequence, that if the Department used forty or fifty of them there would be a still greater saving? Up to the present time it would appear so.

3810. The whole thing, as yet, resolves itself into a question of economy of fuel, does it not? I might add that, as far as can be seen in general wear and tear, there is no perceptible wear yet on the combined motors, where there would be considerable wear shown on the Baldwin.

motors, where there would be considerable wear shown on the Baldwin. 3811. On the brasses? On the brasses

3812. This is what I want to get at. We can take it this way: If I have two engines, one of which is 60 horse power, and the other 40 horse power, and I have two firemen to attend to them, one of them with the 60-horse power engine shows me he has been using 60 cwt. of coal per day, and the other 40 cwt. of coal per day, would it be a reasonable thing for me to conclude that there was a saving of 30 per cent. with the 40 horse engine as compared with the 60-horse engine? Yes, if it was doing the same work.

3813. If it is not doing the same work? I have already said they are not intended to do the same work. 3814. I want you, if you will, to tell the Committee whether this 30 per cent. saving in fuel, which you estimate will be effected by the use of these engines, is an absolute saving, comparing the work that can be done with the Baldwin motors with the work that can be done with the combined motors? No; not with the work that can be done; I am not prepared to say that. It is only since the combined motor has with the work that can be done; I am not prepared to say that. I been brought upon the board that we have begun to compare them.

3815. Would the combined motor in your opinion do duty to the same amount of foot-pounds as you can get out of the ordinary Baldwin motors of the type first alluded to, and then save 30 per cent. in the fuel? I am hardly prepared to answer that question. I may say this, however, that comparing one of our Baldwin motors with a 9-inch cylinder with a compound motor with a 9-inch cylinder, the compound will. do considerably more work in proportion. As you put the question you are putting the compounds at a disadvantage by comparing an 11-inch cylinder with a 9-inch; but if you put a 9-inch cylinder in the Baldwin the compound has the advantage, and will work more economically; it will do more work and more economically than the 9-inch Baldwin.

3816. Has it the same stroke of piston in both cases? Yes.

3817. How long, upon the average, in weeks, will the Baldwin motors run without repairs? Without ordinary minor repairs they might not be a week; from one day to another there are always jobbing repairs on any locomotive engine, but as to brasses the ordinary Baldwin motor, running on our roads would require main rod brasses or connecting rod brasses within two months; from six weeks to two months is about the average of a set of brasses.

3818. Taking a connected view of the whole matter—both classes of engines, the nature of the road, the work to be done—at present you would not feel justified in asking the Department to increase the number of the compound engines? I would not; so far the matter is not sufficiently developed to my mind to give an opinion; before I pledged myself to a thing of that kind I would like to have a little more experience.

3819. Mr. Wright.] I understand you to say that the lead plug has dropped twice? Yes, the lead plug: dropped out twice while running trial trips to Coogee; never while they have been in service to my knowledge. The men not being accustomed to them let the water drop a little too low, and in coming up the hill the plug dropped, but no damage was done. Since they have been at work and the men have become acquainted with them there has been nothing of that kind.

3820. Do you consider the breaking of the saddle which carries the cylinders in any way affects the 3820. Do you consider the breaking of the sature which consider the combined motor, or the utility of its design? No, it is merely a weak place in carrying 3821.

MINUTES OF EVIDENCE TAKEN BEFORE THE SELECT COMMITTEE Mr. H. B. 3821. How many of these combined motors are there running between Redfern and Bridge-street? Howe. 3822. Do they do the same work on that road as the Baldwin motors? They do. 8 Oct., 1884. 3823. Is there any saving of fuel between them and the Baldwin motors? out, the time is too short. The four only started last Monday morning. That has not been worked 3824. How many were working before that? Two, for some time before that. 3825. Were they doing the same work as the ordinary Baldwin motors on that track? Yes. 3826. Have you made any comparison between the Baldwin motors and the compound? The saving amounts to about 30 per cent. 3827. With this saving the two compound motors have been doing exactly the same work as the Baldwin motors on that road? Yes, to the best of my belief. 3828. What is the relative horse-power of the Baldwin and the compound motor? That I have not worked out. 3829. Have all matters in connection with the compound engines been under your control? Yes. 3830. Is there much difference in the repairs effected in one engine as against the other? Yes, a good deal. 3831. Is there a good deal more in the compound motor? There is less in the compound motors than in the Baldwin motors; that is, from actual work, wear and tear on the road. 3832. You have seen the original design of these engines? Yes. 3833. Did the first engine show any marked difference from the original design? No; it differed in some minor details. 3834. Is there any difference in any of the working parts of the first engine, as it is now, from what it was when it first arrived, as far as the principle is concerned? No. 3835. You have had to put in new valves with rings? Yes. 3836. Does that alter the principle of the design? No. 3837. Have any of the valve motions in the first engine exhibited a weakness? No. 3838. Have you replaced any of the side rod brasses in any of the engines? No. 3839. Have you replaced any of the main rod brasses? No.

3840. How often have you put new side and main rod brasses on the Baldwin engines? About once in

every two months; from six weeks to two months; two months at the outside.

3841. How long is it since the first of these compound motors has run on the roads regularly? Since

about the beginning of May. 3842. About five months? Yes.

3843. During those five months you have put in no new brasses on the main and side rods? No.

3844. Is the valve motion in the new engines different in design from the first engine? Ye 3845. Have you seen Mr. Joy's design, showing the valve motion as intended to be fitted?

3846. Does the valve motion of the five combined motors correspond exactly with Mr. Joy's design? No. 3847. Can you tell me how many valve spindles have been broken and bent? Between twelve and fifteen. There have been three broken.

3848. Have you altered these spindles to Mr. Joy's design? As near as possible. 3849. Since the alteration has been made have any spindles been broken? No.

3850. Do you consider that the builders of these motors have strictly followed the design of Mr. Joy's valve gear? No they have not.

3851. Has any alteration been made in any part of this motor that will affect its design? No. 3852. Then I understand you to say the design still remains in its original form? Yes.

3853. You have considerable knowledge of the Baldwin motors; -do you think, taking the whole thing into consideration, that the compound motor is more or less expensive, with necessary repairs to keep it running on the road, than a Baldwin motor of the same power? With the slight alterations that have been made since they came here they seem to indicate that they will be less in cost of wear and tear than the Baldwin motors, with the improved valve spindles we have put in.

3854. From your experience as an engineer do you consider the design defective in any way? As I said before, I would like to have a little more time to let the thing develop itself.
3855. Do you know of any defects in the principle? No more than what I have stated as to the vertical

3856. Is there any question of labour in the employment of these combined motors as compared with the Baldwin motors; do they save labour in running? They save a man as fireman.

Baldwin motors; do they save labour in running? They save a man as fireman.

3857. Do you know whether it is a fact that the compound principle in motors is coming into use or being sought after by engineers in connection with locomotive purposes? Yes, compound engines are being sought after by engineers all over the world; that is in the principal engineering centres such as England, France, Germany, and America. For many years they have been attempting it in France and in England. Mr. Webb, one of the best locomotive engineers of the day, has been trying for years to apply it. 3858. Mr. Poole.] But he has not succeeded? He has succeeded so far that he is constructing more of them. A good many locomotive engineers do not believe in them. 3859. Mr. Wright.] Is it not a fact, speaking from a mechanical point of view, that every new engine and every new design has to undergo considerable modification when put into practical use? They have; I never saw any new design but what has a considerable amount of alterations made in it. No man can be expected to perfect a thing right off.

be expected to perfect a thing right off.

3860. So that you are not at all surprised at the trifling alterations that have been effected in this new motor and car? Not at all.

3861. Have you ever heard that the labour interest objected to any new mechanism? Such things do occur amongst men. There is very often prejudice amongst them against introducing new machines.

3862. I dare say you have heard that there have been riots in England against the introduction of

Yes; they little know that machines are their best friends.

3863. Would it surprise you if the workmen, thinking there might be a possibility of less labour being employed on these motors, would feel dissatisfaction with them? No, it would not surprise me. 3864. I understood you, in answer to Mr. Poole's question, to say that the combined motors could not do the same work as heavy Baldwin motors of the type of Nos. 1, 2, 3, and 4? No, they were never intended

3865. You have had considerable experience in tramway working now;—do you consider these compound

motors capable of working the ordinary traffic of our suburban lines; you have already stated they are not capable of taking two cars? On such a line as Waverley, where the traffic is very heavy, I do not think that they would come out well with the present time-table, but they are quite capable of doing the work 8 Oct., 1884.

3866. Do you think they are capable of doing the traffic now done on any of our suburban lines with the same number of engines employed; for instance do you think they could do the Botany traffic? Yes, they could do the Botany and Waterloo traffic.

3867. But you think the Waverley traffic too heavy for them? I fancy so, unless we ran more of them.

3868. Supposing there are six motors now running on the Waverley line, do you think the same traffic could be worked with seven compound motors and cars? I think so.

3869. Do you think the running of these seven combined motors would be more expensive to the Department than the running of six Baldwins? I do not think there would be much difference.

3870. Would the cost be less? It is a question that cannot be answered off-hand; I could not answer it

without working it out.

3871. I understand, from the general tenor of your remarks, that you rather look with a favourable eye on these combined motors? I do, for their work.

3872. Do you know the relative cost of the two classes of engines? I think they are about equal, as near

as I heard; personally I do not know.

3873. Mr. Sutherland. Before the alteration was made in the compound engines were they saving in coal then, or did they not use 50 per cent. more coal or coke than the Baldwin motors? Previous to the alterations that have been made at Randwick there was no saving of fuel with them; that is, before putting rings in the piston valves, they burnt as much and probably more than the Baldwin engines until this alteration was made.

3874. Mr. Wright.] Did you ever see a Return, prepared by the Tramway Department, in answer to a question in the Assembly, as to the number and amounts of the respective repairs done? I did not.

3875. If that Return were shown to you could you verify it or not;—if it had been falsified could you say

whether it was so? Yes. 3876. Mr. Poole. You spoke of one of the combined motors having been running since May;—has that motor been continually running since May? motor been continually running since May? There may have been occasions when it has been stopped. 3877. And some other motor put in its place? No, not as a rule; one of the other cars. 3878. No one motor has been running continuously since May? No. No. 70 is not now running, because I am making some alterations in it, it is atomic when the same alterations in it.

I am making some alterations in it; it is standing by as a spare engine.

3879. I suppose, taking a fair average of the time they have been here, no one of the combined motors has run even half the time since May? Yes.

3880. How much? Quite three-quarters of the time, as a hap-hazard answer.

3881. As to the saving in men—have they not to be fired irrespective of the driver? The driver looks to his fire.

3882. Does he fire himself? He does; it is considered his place to fire.
3883. If Mr. Downe has informed the Committee that the fuel-man at Redfern Station fires these motors he is under a mistake? The driver might ask him to fire while he is doing something else.

3884. Is it not an admitted practice that some one besides the driver does the firing for these combined motors;—is it not the regular practice? It is not the practice, because I have repeatedly been there and That is my own personal observation. When there were two engines running, or four as now, there has been an extra man.

3885. Suppose one of these engines were put upon the Leichhardt line, would she carry water enough for the journey? I question it.
3886. You doubt it? Yes.

3887. If you were asked to give an opinion as to the advisability, or otherwise, of ordering a number more of this class of compound motors, would you consider it a part of your duty to take into consideration the necessity for additional watering places, and the difficulty of turning them as compared with the Baldwin motors, and firing them at the terminal points? Yes, if such a question were asked me I should have to consider all these things. have to consider all these things.

3888. Mr. Chapman.] Has your attention been called to the sagging of the floors of these cars? Yes, I have noticed that.

3889. Do you consider that a defect? It is a slight defect, but it can be easily remedied; there is no danger attached to it in any way. To an ordinary person in the street it looks bad, but there is no danger in the way it is constructed. That can be prevented in future. Lots of little defects that are developing themselves now can be remedied.

3890. You say you have got six motors;—is it a fact that out of the six you have generally got two in the dock for repairs? No; they have not been there for repairs; we have been making alterations to them—altering the valves and various other matters. But for actual wear and tear it is not the fact that they are continually under repair.

are continually under repair.

3891. Can you work five out of the six? I can work four, and I hope to work at least five of them.

3892. Mr. Wright.] It has been represented to me on several occasions that the engine in the combined motor and car is hardly ever run for two days without being taken out and changed. It has also been represented to me that changes of the engines have been going on continually, so that I have been deceived by seeing two cars passing along the road between Redfern and Bridge-street, whereas the engine that drew the cars was changed perhaps twice a week. Has this been the case or not? It is not the case.

3893. Then the information conveyed to me is incorrect, that these changes have been very frequently made with the engines? Yes.

made with the engines? Yes.

3894. I have been further told that the breakdowns are so frequent that the engines are often taken out in the night and the car on the road the next morning, so as to encourage myself and the public to believe that one engine is doing the work, whereas three or four have been doing it? It is not correct; there is no foundation for it. I might say that since we have had the new cars built by Mr. Wearne there has been a spare engine, and if anything went wrong we could put on the road at once.
3895. The breakdowns have not been frequent? No.

3896. Do I distinctly understand that the repairs, other than the alterations you speak of, have been slight, on these cars? Yes.

MINUTES OF EVIDENCE TAKEN BEFORE THE SELECT COMMITTEE

THURSDAY, 9 OCTOBER, 1884.

Present:—

Mr. CHAPMAN, Mr. GARRARD,

Mr. POOLE, Mr. TEECE.

SYDNEY SMITH, Esq., IN THE CHAIR.

Mr. Frederick Davy called in and examined:-

Mr. F. Davy. 3897. Chairman.] What is your occupation at the present time? I am foreman in the Tramway 9 Oct., 1884. 3898. How long have you been in your present position? A little over two years as foreman.
3899. Have you much to do with the compound motors? No; nothing more than lifting them on the road when they have been off, or sending men out to make repairs while they were running.

3900. What experience have you had in regard to railway and tramway rolling stock? I have been on the tramways nearly the whole of my time in the service of the Government. In rolling stock I have had about twenty-one years' experience. 3901. Have you lately been selected by the Government to do any particular duty in regards to works, machinery, &c. ? I was appointed as Government valuator for resumptions where machinery is concerned, such as the resumptions at Darling Harbour.

3902. You have had frequent opportunities of judging of the merits of the combined motor? Yes.
3903. Will you kindly give the Committee your opinion, as a practical man, of the combined motor as compared with the ordinary motor that has been running for some time? In the first place the construction of the combined motor is against all mechanical principles, being a vertical engine.

3904. Have you had any experience of that class of engines? Yes, we had an engine on that principle

previous to this combined motor, built by Kitson and Co., of Leeds.

3905. Is this motor on the same principle? It is far more complicated than the Kitson—it is more intricate; it takes a good man to understand it.

3906. How long has the Kitson motor been running? It ran about twelve months, and then it was put on one side when the combined motor commenced

3907. For what reason was it put on one side? I could not answer that question. It was merely ordered to be put on one side; no reason was assigned that I know of.

3908. Was there any objection to it—was the wear and tear great, or did it not do the work it was

expected to do? I consider it did the work better than the combined motors do it; it did run longer at one time than they do.

3909. How long has this Kitson motor been put on one side? Eight or nine months.
3910. Has anything been done with it since? They are going to use it to drive an electric light.

3911. Where? At Randwick.
3912. But for tramway purposes, that is, for running on the road, it has not been used lately? No. It was in fair running order when it was sent to Randwick. I was not at Randwick, and I made no inquiry

about it till I was ordered to go there the other day. 3913. Have you had any experience of this class of motor other than the Kitson—I mean with regard to vertical engines used on tramways? There never were any on the tramway before these, to my knowledge, and on no other way. Only when Stephenson made his "Rocket" he started on the vertical

principle, and found it was wrong:
3914. It is not used, as far as you know, on any other line? It is not mechanical to use it.
3915. Why? Because it works on to a dead road, and the concussion knocks all the machinery to pieces, and the road too.

3916. You think the Kitson motor would do more work than any of these? Yes, it did do more work

for its size.

3917. What running did it do compared with the compound motor? It would run for a month at a stretch, and any one of these have never done a week yet; I do not think one of them has done six days in succession without requiring repairs.

and there are two running now; I met one as I was coming here, going back crippled.

3919. How long is it since the first combined motor commenced to run? About six months, I should think.

3919. How many commenced to run at that time? From the time it first ran till it was put into service it was running about in various trips.

3921. What has been your experience since it has been in service? To go and get the road clear when

she has been broken down. 3922. How often has she been broken down since the first time she was put in service? I am speaking of the whole kit of them, not of one engine.

3923. The whole kit have not been running? Yes, they have all been in service, but they have never long run together. You can take an engine out to-night and have another ready to go in in the morning. 3924. Do you mean that the motor is changed into another car over-night? Yes, they change the motors when necessary; just take one motor out and put another in.

3925. Is that done at night-time? Yes.

3926. How often is that done? It is hard to tell when they are changed; you have to go alongside and

look up into the car to see the number.

3927: You are sure they have been repeatedly changed? I am sure of it; there is no doubt about it.

3928. How many miles do they run in a week—about? I am not running foreman; I cannot tell you how many trips they make; perhaps twenty trips; that would be equivalent to about 60 miles a day.

3929. Would they average that, taking into consideration the repairs—the six in use at the present time?

No; there are not six in use; there are six ready for use at present; four started this morning, and there are now two of them running. One was going back to Randwick crippled as I was coming in, and another was in the Bridge-street yard, waiting for orders.

3930. What was the matter with it? I do not know. I spoke to the driver of one of them, and he said he wished he could be taken out of it or he would be smothered; the steam was escaping by a burst-icity or something.

joint or something.

3931. What was the name of the driver? Thomas Osborne.

Mr. F. Davy.

3932. Is it customary for these combined motors to break down daily? There may sometimes be a day or 9 Oct., 1884. two without a break-down.

3933. Do you think there is any saving of fuel in the motor cars compared with ordinary motors that have been in use some time? I have nothing to do with that; it does not come under me. That is the run-

ning foreman's duty; each driver gives him his return daily.

3934. Do you think these combined motors capable of doing the same work as the other motors? No.

3935. What do you think is the difference? Another motor of the same weight would take two loaded cars any way; she will not take herself and a little car.

3936. The compound motor will not take another car? When they have just come out of the shed, and

are in first-rate trim, they will take one car besides themselves to the Railway Station and back. 3937. Have you the same trouble with the other motors that you have with the compound motors with regard to repairs and break-downs? Not having been connected with the repairs at Randwick I can hardly say that. All motors require frequent repair.

3938 Do you think they require repair so often as the compound motors? The book states that the

compound motors require more repairs than the others.
3939. What book? The night fitters' time-book.
3940. What other difference is there in design between the compound motors and the other motors? This has got what they call piston valves, the others have slide valves.

3941. Which do you think the best? The slide valves. You can keep that tight, but you cannot keep

this—piston valves—tight.

3942. What other difference is there? I may as well say I do not believe there is any compounding about it; it is working four cylinders at high pressure instead of two.

3943. Mr. Poole.] Have you seen this working model that purports to be, and I have no doubt it is, a correct working model of the valve arrangement of the compound motor? It is a model that works well by hand, and the motors do not work so well with steam.

3944. You have just stated to the Committee that you do not consider there is any compounding about it;—do I understand you to mean that you do not consider that there is any advantage derived from using the steam in the second cylinder? Not a bit.

3945. You have not been at the Randwick repairing shops? Not during the time the combineds have been there.

3946. You know nothing then absolutely of your own knowledge as to the state the motors were in when they arrived from America? No, they were all in cases, packed up. 3947. Have you heard at all, in your official capacity, of the difficulty there was in running the first motor under steam at all? Yes.

3948. Do you recollect what causes were assigned;—was there any difficulty in getting rid of the condensed water? Yes.

3949. Will you explain to the Committee what you, thought was the nature of that defect? I only know that such was the case, from having been told of it. 3950. Some person informed you there was a defect? 3951. Who was it? It was Mr. Howe himself.

3952. Has your attention been called at all to the question of economy in the use of fuel, with respect to the combined motors? No, that does not come under my notice.

3953. You know the general mechanical arrangement of the combined motor?

3954. From your knowledge of locomotive machinery in action, would you consider, without any returns being presented to you, that there would be a saving of fuel? I should not.
3955. Have you known any cases where one or more of the combined motors under steam kave lost the

fusible fire-plug? Yes, on one or two occasions. 3956. While under trial? While under trial.

3950. While the trial: While the trial:

3951. Have any complaints been made to you by any of the drivers that they are very liable to prime? They would not complaint to me, but I have heard them say so.

3958. The complaints were not made to you officially? No; that is not part of my duty.

3959. In answer to the Chairman you stated that, in your opinion, the construction of the compound motor is in direct opposition to mechanical principles of locomotives? Yes.

3960. I should be glad if you will amplify your answer on that point, and state more in detail to the Committee why you consider vertical machinery objectionable or less economical in maintenance than horizontal machinery—locomotive in both cases? In the first place you have to have your machinery so rigid that there shall be no spring whatever to maintain your strength, so that driving on the road and going over the joints shakes everything to pieces; and then you have to have your wheels balanced to compensate for the weight of the other machinery, which causes a great strain on other parts, which is

3961. As far as you know, what has yet been the principal defect manifested in the compound motors? The piston-valves wearing and what we call blowing through—letting steam go to waste; valve-spindles bending—that is caused by the piston-valve getting out of place; and the saddles that connect the cylinders being broken

3962. These span the boilers? Yes, and the vertical stanchions that carry the cylinders having given way, and the safety-plugs being blown out.

way, and the salety-plugs being blown out.

3963. I would like to call your attention to the water-carrying capabilities of the compound motors contrasted with the ordinary boilers and motors. Take those engines first imported—1, 2, 3, and 4;—what distance can the ordinary boiler and motor run, under ordinary fair circumstances, without a fresh supply of water; that is to say, what is their water-carrying capacity? About 10 miles; that is the big engines; the little ones will not carry quite so far. Those of the class you name will carry 6 miles comfortably.

3964. And what distance will the compound motor carry water sufficient for its use? I do not know.

3965. Have you examined their tank space? Yes.

3966. Can you not give the Committee some idea whether they would be able to carry water for 10 miles, 8 miles, 6 miles, or any other distance? It depends on their priming and what condition they

3967. Do you consider they are more liable to prime than the ordinary motor? Yes.

1043—Q

Mr. F. Davy. 3968. Far more so? Far more. 3969. Has that been found to be the case in actual practice? Yes, in all of them. 3970. About how long will the ordinary Baldwin motor run without any necessity for repairs? mean if an engine goes out in thorough repair—That depends a good deal on what road she is on. 3971. Say on the line from Bridge-street to the Railway? Without anything being done to her at all, 3971. Say on the line from Bridge-street to the Railway? from three to four weeks. 3972. What would be necessary then? The side rod brasses would want letting together.
3973. If they were of the description known as club ends, how long would they last? Solid ends? 3973. If they were of the description known as club ends, now long would they last? Solid ends?
3974. Yes; I think they are Midelton's design? As much as four months.
3975. And then they would require new bushes? Yes.
3976. Now, taking a connected view of this matter, placing the compound motor to work under the same circumstances and on the same roads as you would place the ordinary Baldwin motors, do you think the combined motors would compare favourably for maintenance cost against the ordinary Baldwin motors, say for eighteen months or two years? I do not think anything of the sort; I do not think it would.
3977. In fact, from your experience, you feel convinced the combined motor would cost more for maintenance then the Baldwin motor? tenance than the Baldwin motor? Yes. 3978. And as to economy of fuel you cannot give us any information from your own knowledge? from the principle of the thing; it consumes more steam and must require more fuel. 3979. If the Committee have been informed that there is a positive saving of 30 per cent. in fuel by the use of the combined motor as compared with the ordinary Baldwin motor, would you be prepared to endorse that statement? No. 3980. Suppose we take an engine of the ordinary Baldwin type, 1, 2, 3, 4 engines of that type, and place them on a road where they would be worked up to their full fair capacity, would a compound motor placed on the same road be able to do the same amount of work? No. 3981. By about how much per cent.—what do you think would be the difference—I do not like to bother you with foot-pounds but that is really the only way of getting at it;—roughly speaking, what do you think would be the difference in per-centage? With their performances I should say they would not come up to within 50 per cent; they would not do more than half of what the big class of engines would.

3982. Then it necessarily follows that you would require from two to three compound motors to do the same duty as one of the Baldwin motors I have named? Yes, of the large type. 3983. So that if it could be proved by returns that there was a saving of 30 per cent. of fuel by the use of one compound motor, compared with the requirements of an ordinary Baldwin motor, there would still be, looking to the duty done, an enormous loss? Certainly. looking to the duty done, an enormous loss? Certainly.

3984. I desire to call your attention to the supposed advantages claimed for the compound motor by the double use of the steam. I suppose in this case as in all others the steam is admitted into the high pressure cylinder first, and then at the termination of the stroke, when the stroke is reversed the steam is allowed to exhaust direct into what is called the low pressure cylinder. Does it not follow as a matter of course that whatever pressure the steam exerts per square inch on the low pressure cylinder there must be, as a matter of course and fact, the same back pressure, the same pressure per square inch, acting as back pressure upon the high pressure cylinder? Yes. back pressure upon the high pressure cylinder? Yes.
3985. Then all the advantage that would be possible to be gained by the action would be the difference due to the two diameters of the piston? Yes. 3986. Then when the stroke is reversed does it not follow that the steam from the boiler would have to force out the steam at the other end of the piston into what may be termed the low pressure cylinder? Yes. 3987. And from that do you think that in practice the theoretical advantages claimed would be reduced to nil? Yes. 3988. Has your attention been called to the cars themselves that are attached to the combined motors? 3989. When they were first delivered over to the Department I suppose their floor line was horizontal? Yes. 3990. Is it so now? 3991. Gan you say roughly about how much they have deflected from the horizontal line? The worst one is No. 103, and that is about $4\frac{1}{2}$ inches when loaded; when not laden it is about $1\frac{3}{4}$ inch. 3992. Do you consider these cars perfectly safe in that state? I do not.
3993. You think they are not safe with a heavy load? They are not.
3994. Does that weakness arise from some defect in construction, or is it, in your opinion, essential from the design? It could not be otherwise from the design; it is part and parcel of the design.
3995. It is weak about midway between the support of the car on the motor and the bogie frame behind? 3996. Mr. Garrard.] With reference to the piston valves, they are just solid blocks, I suppose—there were no rings on them when imported? No. 3997. Do you know whether rings have been placed upon them since? Yes, they have.
3998. Do you know whether they have acted beneficially? The first day or two they are right, but after that they blow through; the steam passes. 3999. Has there been any doubling up of the valve spindles owing to these rings getting into the port? There has been a doubling of the valve spindles, but I do not know from what cause.

4000. Are the ends of these rings fastened in any way? Not that I am aware of. I have only had an opportunity since yesterday morning to see these rings; I was sent to Randwick, and told to make myself acquainted with the motors so that I could give evidence. 4001. Do you not think it is very likely these rings would get into the port? The rings are wider than the port, and could not get in.
4002. There is one ring on each? Yes.
4003. An ordinary cast-iron ring? Yes, I believe they are; they are not brass; they are either iron or steel.

4004. It is only since yesterday you have had anything to do with the compound motors? Yes.
4005. Do they come into the Pitt-street yard at all for repairs? They cannot get in the shed.
4006. You were foreman at the Randwick shed? Yes.
4007. Were you foreman at the time the design was first brought out? Yes.
4008. Were you consulted at that time as to the feasibility of the design? I had it shown to me.
was made before I was consulted. I knew it was being made, but I was never consulted.
400

ON THE PURCHASE OF RAILWAY ROLLING STOCK. 4009. Did you give your assent to the principle when you first saw it? I was never asked.
4010. From the first you have been of opinion, I suppose, that it would not be an economical design? Yes.

9 Oct., 1884. 4011. And so far as your experience goes that has been borne out? Yes. 4012. You said just now that in your opinion the engines were not compounding? Yes.
4013. But that the whole four cylinders got the high-pressure steam? If they do not get it, if the high-pressure cylinders get it, it is of no use when it goes out into the others.
4014. Have you noticed the workmanship of the combined cars supplied from America and of those supplied by local manufacturers;—have you compared them? No. 4015. You spoke of the deflection; -was that on a Colonial or American car? Colonial. My attention was called to it by the Traffic Superintendent at the gate, and he ordered it to be stopped at once.

4016. One of them has a permanent set of an inch and a quarter? Yes, when not loaded.

4017. Can you tell us if there is an indisposition on the part of the drivers to take charge of these combined motors? Yes, there is. 4018. Do you know the reasons they have urged? There are many reasons. For one thing, they take so much reporting; they have to report when they break down, and a great deal of the driver's time is taken up in being called upon to attend inquiries, why this and why the other. There is an indisposition to go on for that reason. 4019. Have there been any improvements made in these motors, other than the piston rings, since they arrived here? Yes, there is a heap of work at Randwick that has been condemned—a heap of condemned valves and valve spindles. 4020. In your opinion is there sufficient steam space in these boilers to work an engine of that calibre? No, there is not sufficient steam space.
4021. Where is the fusible plug placed? In the crown of the fire-box.
4022. Is that frequently bare of water going up a steep incline? Yes, when she is steaming at all that is bare. 4023. Is there internal steam pipe in this engine? There has been something applied—what we call a steam baffler 4024. With better results? I do not see it. They always throw water out when they start. 4025. Was it necessary to take off the crown of the road before these motors could be used? 4026. Mr. Teece.] I understood you to say there was a close resemblance between the Downe combined motor and the Kitson motor? As regards the principle.
4027. Could you describe the difference between them? The principal part that is not similar is the boiler; the boiler is of a different construction.
4028. The other parts are similar? The other and this of Mr. Downers has four. The other parts are similar, but the Kitson motor has two cylinders, 4029. You say two of these compound motors have been continuously running? Yes, for several months. 4030. How many motors altogether have been in use? Five. 4031. And two have been continuously running? Yes.4032. I think you also said it was customary to change these motors at night? Yes. Then virtually five have been in use to keep two cars running? Yes. 4033. Then virtually five have been in use to keep two cars running? Yes.
4034. How many passengers will the combined motor carry, say from Bridge-street to the Railway, a fair load;—would she take one car or two cars? When in good order, just come from the shed, she will take two.
4035. With how many passengers? Altogether about 140 passengers for the two.
4036. How many cars and passengers will the Baldwin motor carry for the same trip? The big car will carry 120 and the little car 80—altogether 200 passengers.
4037. Would not the consumption of coal in the heavy Baldwin engines be considerably more if it carries more passengers? No, I do not think it would. It would be more, but not anything to speak of.
4038. Mr. Garrard.] You were at one time foreman of the machine-shop at the Redfern locomotive works? 4039. How long? About eighteen months. 4040. You were also foreman with P. N. Russell & Co. at one time? Yes.
4041. How long? I was in their service about $12\frac{1}{2}$ years, and I was foreman for $9\frac{1}{2}$ years.
4042. In their busiest time? Yes. 4043. You were also engaged in business as managing partner of the Albion Foundry at Pyrmont? Yes. 4044. For how many years? Four years. 4045. How long were you foreman at Randwick before you went to Pitt-street? You mean when I took Mr. Broad's place; that was two years ago last June. Before that I was temporary foreman. 4046. You had full charge of the fitting up of the Randwick rolling stock? Yes; of the workshops and machinery. I was only a fitter then. 4047. During the last two years you have visited England? Yes; within the last four years.
4048. And are conversant with the latest designs in rolling stock? Yes, railway rolling stock.
4049. Where did you obtain your professional training? At Davey Brothers, Park Iron Works, at Sheffield.

4050. Have you ever had anything to do with the manufacture of locomotive engines? I have had to do with them but only in a small way; I was not brought up in the locomotive shop.

4051. At the Railway works ——? I was foreman of the machine-shop there.

4052. There is nothing but locomotive work done there? No; what I mean is that I never worked much

4053. I suppose you have always taken great interest in anything concerning locomotive work? Yes. 4054. You have observed all modern improvements and designs? Yes, I have always taken a deep interest in that.

Mr. John Moxey Tiley called in and examined:-

4055. Chairman.] What is your position in the Government service? Collecting officer and manager at Darling Harbour Wharf.

4056. Is it your duty to collect wharfage rates at Darling Harbour? Yes.

4057. Do you recollect any material for dump-cars arriving there for Carson Woods & Co.? Mr. J. M. Tiley. Yes, I 9 Oct., 1884. remember their arriving, but they did not come up to the wharf. 4058.

Mr. J. M. Tiley. 9 Oct., 1884.

4058. Do you know whether any duty was charged? None that I know of.
4059. Where was the material landed? At the Atlas Company's old place, on the ground lately resumed by the Government.

4060. Is it usual for goods to be received there without paying duty? No; it is not usual for goods to be landed there at all.

4061. Do you think goods landed there should be exempt from wharfage rates? No, decidedly not; it would be cheating the revenue.

4062. You understand that I am speaking of the Atlas Company's Wharf? Yes; it now belongs to the Government.

4063. You think it would be cheating the revenue? Yes.

4064. You are satisfied no duty has been paid? I am satisfied no duty has been paid.

4065. You have seen the materials to which I refer? Yes, I saw them landing, and I have seen them

being worked up.
4066. You are quite satisfied no wharfage rates have been paid? Yes, I am quite satisfied no wharfage rates have been paid.

4067. Mr. Garrard.] Is it not possible for these rates yet to be paid? Yes, it would be possible by finding

out the amount of material that has been landed. 4068. They are usually paid when the material is landed? Yes, all railway material coming to Darling Harbour wharf pays 1s. 8d. per ton, even on the Government material itself. It is all charged 1s. 8d. per

ton by the Treasury. 4069. That is on Darling Harbour wharf; but where these goods have been landed is virtually a private

wharf? No, I believe it is Government property. 4070. You refer to the old Atlas Works? Yes.

4071. Are you aware that the Government have leased that place to a private individual or firm? No, I am not.

4072. If they have done so would not the private individual or firm have the right to land goods there without paying wharfage? Certainly.

4073. Mr. Teece.] Did you offer any protest or make any inquiry as to the non-payment of these wharfage rates? No, none at all.

Mr. George Hendy called in and examined:—

Mr. G. Hendy. 4074. Chairman.] What is your occupation? At present I am general foreman in the Pitt-street Tramway yard.

4075. How long have you been engaged in that position? Since yesterday. 4076. What were you doing previously? I was running foreman on the Government Tramways. 4077. How long have you been in the Tramway service altogether? Since May, 1880.

4078. Had you any experience previous to that? Yes, nine years on railways.

4079. What railways? The South-eastern Railway in England.

4080. In what position? I started first as a turner and fitter, and I was in the drawing office for seven

years.
4081. Have you had frequent opportunities of observing the work done by what are known as the combined motors? I have had to arrange for the running of them on the lines.
4082. In what way are the combined motors different from the ordinary motors? One is a vertical

engine, the other horizontal.
4083. What do you think about the vertical and horizontal engines, with regard to the work that can be performed by each? The horizontal engine ought to be more powerful. Those we have had on the tramways are larger and more powerful.

4084. Have you seen vertical engines in use in any other place but this Colony? Not for tramway

purposes.
4085. Do you think they are as economical as the others in working? That I could not say. I do not know exactly what repairs have been done to them. That is done at Randwick.

4086. Can you tell the Committee how often the combined motors have been in the shops for repairs, and what has been the nature of the repairs effected? There have been a great number of valve spindles bent. what has been the nature of the repairs effected? There have been a great number of valve spindles bent. 4087. How often have they been taken into the shop for repairs? I could not tell you exactly now; but there are reports that would show that. I used to forward reports of any delay to the traffic. 4088. How long do they generally run before being sent to the shop for repairs—how many miles? Only two motors were running for regular traffic until quite recently. Now we have four placed on the line

for traffic purposes.

4089. Is it true that two were broken down to-day? Yes, I sent out fitters to do some work on them just as I was coming away; I do not know what they did.

4090. Mr. Poole.] You have been running foreman at the Pitt-street shop almost since the tramway was opened? I have been high foreman and running foreman. I first started as an ordinary fitter on the resilient form for a few weeks.

railway for a few weeks. 4091. You were running foreman for a considerable time before the compound motors were introduced?

4092. You have had considerable experience with the Baldwin motors, and also as much experience as anyone else with respect to compound motors? I never made a study of the compounds until they came out here.

4093. In your position as running foreman, whatever defects are noticed by the drivers in the course of the day are reported to you? Yes.

4094. And therefore it is a part of your official duty to take notice of all these matters? Yes. 4095. There are, I think, six or seven compound motors in all? Yes.

4096. And the whole of them have been at various times running on the line? Yes, now they are. 4097. There was one put upon the line at first—one car running? Yes, No. 70.

4098. Did No. 70 motor run that car regularly every day, or was it necessary to change the motor and put another one in? I have changed it at times when there were repairs they could not execute during the night. 4099. 4099. When the repairs were too heavy to be effected in one night another motor was put in its place Mr.G. Hendy. and the car sent out the following day? Yes.

4100. It was about May, I think, when the first compound motor was put on the line? Yes, it was in 9 Oct., 1884.

4101. And for the principal part of the time between then and now there have been two cars running? \mathbf{Y} es. 4102. And to keep the two cars running it has been necessary to use the whole of the motors up to within the last three days? Four of them have been used.

4103. Four motors have been in use to keep two cars going?

4104. Up to within the commencement of this week? Yes.

4105. And then four cars were set running? Yes, just recently there have been four cars put on.
4106. To-day two of those motors have temporarily broken down from some cause or other? I know of one; I could not answer for two; I have sent out fitters to attend to them. It may be a little job they can do while going along.

4107. Is it a part of your duty for all the returns of fuel to come through you? Yes, all running sheets have to come through me; they amount to about 120 daily. All reports of every kind came through me

while I was holding the position of running foreman.

4108. Do you know of your own knowledge that the men as a rule desire to be placed upon these compound motors to work them;—do they like to get charge of a compound motor? Some do not; some are speaking rather bitterly against them.

4109. Have they complained to you officially about them? Yes.

4110. What is the nature of their complaints? They did not state the cause; they have said they would rather not drive them.

4111. Do they not allege any particular cause? No, I have not heard of any particular cause.
4112. Did they ever complain to you that they were very liable to prime? The first one that was on the road was liable to prime; I have not heard it since.

4113. Do the returns furnished to you show any large saving in the consumption of fuel on these motors? No; the consumption is a little under that of the Baldwin motors.

4114. With what Baldwin motors have you compared them? The class that has been running on the Redfern line principally.

4115. The 10-inch cylinder class? Yes.

4116. Will the 10-inch cylinder ordinary Baldwin motor do as much work per day as the compound motor? Yes.

4117. Will it do more? It will draw a larger load—more passengers.
4118. And compared with that class of engine you think there is little, if any, saving in the consumption of fuel? There is a slight saving in fuel.

4119. Since when? Since they have altered the valves.

4120. Can you give the Committee any reliable information as to the per centage of saving of fuel? I could not; I do not take the figures out; the returns are sent to Randwick, and at the office there they

get out the returns from the sheet.
4121. Do the compound motors give you much more trouble to maintain the traffic arrangements than the ordinary motors—in other words are they breaking down oftener? We have had a good deal of trouble with the breaking down of the valve spindles.

4122. You are a mechanic brought up as an engine fitter? Yes, since I was fourteen years old. 4123. And you have had considerable experience in locomotive machinery? Yes, in machiner Yes, in machinery, and in the drawing office.

4124. From your experience do you think the compound motor, owing to its having vertical machinery, is likely to be as economical in cost of maintenance as the ordinary Baldwin motor, running over our tramway roads? I should say no.

4125. You think it is almost impossible for it to work as economically as the Baldwin motor with horizontal machinery, owing to the great difference in the arrangement of the machinery? Owing to its being vertical.

4126. Arranged vertically instead of horizontally? Yes.

4127. Do you think it likely vertical machinery will last as long on our tramways as horizontal machinery? I do not.

4128. Have the men made any complaints about the great difficulty of keeping up the supply of steam? No, not since the new valves have been placed in them.
4129. How long will the ordinary Baldwin motor of the type of the heavy motors run without repairs?

That greatly depends on the roads they are placed on.
4130. Take the line from Bridge-street to the railway? We have had Baldwin motors on that line for nine or ten months without coming in for a general overhaul; of course they may have had slight repairs, such

as we have to do at night. 4131. About what is the mileage made per day by the motors running to the railway station from Bridge-street? It varies; the average is from 60 to 80 miles. They alter the time service pretty often, accord-

ing to the railway time-tables.

4132. Take the line to Newtown or to Leichhardt;—what would be the average mileage run with the motors there? I suppose 90 miles would be the average; it might be over 100 in some cases.

4133. Are not the Newtown road and the Leichhardt road considered very dirty roads compared with the road to the station? Yes, and very heavy roads to work; there is the greatest wear and tear on them

4134. Is it a fact that you have a Baldwin engine running on the Leichhardt road that has not had the slightest repair for the last three or four months? Yes.
4135. And that is a very heavy road? Yes.
4136. Would one of the combined motors be able to work either of those roads and bring in the same amount of passengers—do the same amount of duty? Not to bring in the same amount of passengers.
4137. If the whole of your service was supplied with the compound motors, and you had the same amount of work to do as you now have on the lines could you do it with the same number of engines if they were of work to do as you now have on the lines, could you do it with the same number of engines if they were compound motors instead of the motors you have—could you do the day's work you do now with the same

Mr. G. Hendy number of engines? There is one thing to be considered. The largest size of motor has to draw two heavy cars, which will seat about 90 or 100 passengers each, but the combined car could not take two large cars; therefore it could not do the same work.

4138. Could one of the combined motors take its own car and a small car carrying sixty passengers to Newtown or to Leichhardt? Υ es.

4139. Would it be able to carry water enough for the journey in either case? Yes, it might be able to carry water.

4140. But it would be running very close? Yes.
4141. Mr. Garrard.] Do the drivers of these compound motors get a larger wage than those running the ordinary motors? Yes, they get a shilling a day extra.

4142. And yet there is a disinclination on the part of the drivers to take them; I think you said they sometimes requested not to be put on the combined motors? Yes, they have made several requests of that kind, but they have given no reason why.

4143. In reference to the fuel-sheets, you have no means of checking their accuracy? Yes, I have means of checking them with the fuel-men at the fuel stations. What the fuel-man issues to the driver daily is checked with the sheet that he sends in.

4144. So that it is left to the fuel-man really to say what fuel is used? The driver signs the fuel-man's

ticket to acknowledge he has had the amount.

4145. You have said that since the alteration to the valves there have not been complaints of want of steam like there used to be? No.
4146. What is the alteration? They have placed small rings on the piston valves.
4147 They are solid piston-valves? Yes.

4147. They are solid piston-valves? Yes.
4148. Do you know what the rings are made of? Steel. 4149. There are no springs at the back of them? No.

4150. Have you had frequent complaints as to the priming of the compound motors? There were complaints at first starting, but I have not heard of many complaints of late.

4151. Has any improvement been made to prevent the priming? I could not say.
4152. Has anything been done to prevent the doubling up of the valves? Yes, recently they have put in stays.

4153. Had any of these motors, previous to any alteration, run a distance of 500 miles without repair of

4154. Mr. Poole.] Do you think it is likely? Yes, they might, but I could not say; I do not know what repairs were actually done to the motors.
4155. Mr. Garrard.] Do you know if any of the saddles of these combined motors have broken or cracked? Yes.

4156. And have been renewed? They have been strengthened.
4157. Do you know if the supporting rods or stanchions of the cylinders have given way? I could not

4158. Do you know that the fusible lead-plug has frequently been burnt out, owing to the shortness of water? I know it was on one occasion; I do not know of any others.

4159. Do you think there is sufficient steam space in the boiler of the combined motor;—do you think more steam space would be better? I do.

4160. Have you examined these motors minutely? No.

4061. You have not been sent out specially to examine them, with the view of giving evidence here? No.

FRIDAY, 10 OCTOBER, 1884.

Aresent:-

MR. POOLE,

MR. TEECE,

MR. SUTHERLAND.

SYDNEY SMITH, Esq., IN THE CHAIR.

Mr. William Allen called in and examined:-

Mr. W. Allen. 4062. Chairman.] What is your occupation? I am night foreman of the tramway repairing-shops at Randwick.

10 Oct., 1884. 4163. How long have you occupied that position? I have been there about two years and eight months.

I was removed from Pitt-street to Randwick. 4164. You have been two years and eight months in the same position? Yes, constantly on night duty. 4165. What experince had you in connection with tramways or railways prior to your appointment in the Tramway Department here? I have worked in the railway-sheds at home to some extent as a millwright and engineer.

4166. You are a fitter and turner? Yes.

4167. Have you had much experience in connection with machinery? Yes, a good deal as a journeyman

4168. Have you had anything to do with the combined motor? I have.
4169. How long have the combined motors been running here? About six months; that is running on

and off. I could not tell exactly how long they have been running though I have been here all the time.
4170. How many of these motors have you at Randwick? I think there are six.
4171. What is your experience with regard to repairs that have to be effected to these motors. Are you called upon more frequently to effect repairs to them than to the other motors? Lately the repairs

have been rather heavy.
4172. And the motors are frequently taken into the sheds for repairs? Yes.
4173. How long do they run without being taken into the sheds for repairs? Repairs have been necessary.

almost daily. 4174. What is the nature of the mishaps that render the repairs necessary? The principal breakages have been in connection with the valve gear.

4175. Are there any other causes? The breakage of the valve gear is the principal, but there are other Mr. W. Allen.

parts of the machinery that require attention.
4176. How many miles do these combined motors run without requiring repairs to be effected? Some- 10 Oct., 1884.

times they will run half a day, sometimes a day, sometimes two days.
4177. Are we to understand that it is necessary to have these motors brought in every day for repairs? No, up to the present time we have had only two of them running. 4178. Although you have six in the shed? Yes.

4179. Can you say why the others have not been utilized? I do not think they have been ready.
4180. Why? I believe they have been waiting for alterations,
4181. What alterations were required? They have altered the stuff boxes and the cylinder ends and also the valve gear. I believe that up to the last week we had only two of these motors running.

4182. What have you had since then? Four.

4183 How often have these been running without being taken into the sheds for repairs? They have been taken into the sheds two or three times. The valves and spindles have been altered, and the motors have not gone so badly since then.

4184. Is it true that the motors are changed in different cars at the Kandwick works? Yes.
4185. How often? That is when the two were running at night—two to-morrow night, and frequently each night.

4186. That was on account of the break-down? Yes, and to enable the work to be done in the night.
4187. Did you find a similar difficulty with regard to the other motors? No, there is little or no change.

4187. Did you find a similar difficulty with regard to the other motors: No, there is notice or no change. 4188. How long do they run? We can generally effect all the repairs they require in a night. 4189. How long will it generally take to effect the repairs to the combined motors? Sometimes I can perform them during the night the work is necessary; but there is a large portion of the work to be taken down, and sometimes you have not time to take it down and couple it again in time for the morning's

4190. Is there any saving effected by using the combined motor over the ordinary motor which has been in use for some time? The repairs to the combined motor up to a week ago have been very heavy, but I do not know how it will be now that we have four running.

4191. We have been up to the present changing portions of the machinery, but now we have the other

four motors running we have nothing to change.

4192. Since the four other motors have been running during the last week you find yourself compelled

to make more repairs? Something in the way of repairs has to be done every night. 4193. How long does it take to effect the repairs? I have managed to get ou morning—that is the next morning. I have managed to get out the motors every

4194. How many men are required to effect the repairs? Two have been employed on motor No. 73 all night; two on the night previous, and one or two on the others, and sometimes we can manage with one.

4195. Speaking generally of the other motors, how long does it take to effect the necessary repairs on them? I can generally manage them before the next morning. There are cases in which there is a lot

of lifting to do, and in coupling them up, but generally I manage it by losing only one trip.

4196. How long will that take? It is done in the morning before I leave, unless boxes are required in them which would detain them another hour after I have gone. In cases like that the work is left to be

done in the day.

4197. Then it takes a longer time to repair these combined motors? Yes, they are complicated, and there is a good deal of taking down and coupling up, whereas the others are taken down directly.

4198. Have you any record of the number of times each motor has been taken into the shed for repairs? As they come in at night the number, say 75 and so on, is taken, and the repairs required, such as a broken spindle or valve out of order is taken down. broken spindle or valve out of order, is taken down.

4199. Will that record show the time occupied in effecting repairs? No.

4200. Is there any way of the Committee learning the time occupied in effecting the repairs to these motors? Only from the time-book in the office. After the fitters have done their night's work they have small boards, and before going home they put down the number of the motor and the nature of the repairs or alterations, whether it be to the spindle or dealing with any other cause of a break-down. They say whether it has occupied a day or a day and a half or a quarter or half-day. This board is thrown into the office and is taken away in the morning.
4201. From whom can we ascertain the time taken in effecting repairs? The fitter puts it down.

What is the name of the officer who takes it away? Mr. Godden.

4203. Do you think there is any saving of fuel effected in running the combined motors? I do not think

so; sometimes they are running a little later than the others.

4204. Taking day for day, late for late, do you think there is any saving? It is seldom that they run two cars, while the others are running all day with heavier loads, and some of those engines run with the same amount of fuel with two heavy cars on a rough road; for instance, to Leichhardt or Botany, with doubledecked cars.

4205. Have you any way of ascertaining the quantity of fuel used by each class of engine? No; the driver takes the quantity. We take sufficient for the night only, and they get up to the shed in the morning. The combined motors have lately had the regular supply, and they generally have some left. They take two bags as they go out in the morning, and this can be absorbed in the furnace at once. 4206. You do not think there is any saving of fuel? I think not; but I have seen no account of what

they use

4207. Mr. Poole.] Did you have anything to do with putting together the first combined motor that came here? Not the erection. Not the erection.

4208. You cannot speak then of the state of the machinery? Not until the motor was ready for running. 4209. I want you to recollect as far as you can all the circumstances of the first trial of the first combined motor which came here—No. 70, I think? Yes.

4210. Was it necessary to make any provision to get rid of the condensed water from the cylinder after it had been running here, or did it come under your notice that it was so necessary? No. 4211. Did you have to put any relief cocks in? They were in when the motor came, but they have never

worked properly.

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Mr. W. Allen. 4212. Was the connection made with the inside of the cylinder? I cannot say; that would be done in
                         the day shift.
10 Oct., 1884. 4213. Up till quite lately the repairs have been very heavy and continuous? Yes.
                         4214. Until lately you have had only two of these engines running on the road? Yes.
4215. And to keep them on the road you have continually had to exchange one day parts of the machi-
                                                                                                                                                                                                Yes.
                          nery of one with that of another of the motors to do duty another day? It has been so.
                          4216. You have had to do what is ordinarily called robbing Peter to pay Paul, to strip one engine to keep
                          another going? Yes.
                          4217. You have had to-day to take a spindle or valve of one to serve another motor in order to keep it on the road to-morrow? Yes, that has been the case.
                          4218. Is it not a fact that in order to try and keep two motors on the road you have had to keep a great
                          many of your men on at night to effect the repairs necessary to enable the motors to go out next day?
                          Yes, that is in changing the motors from one part to another.
                          4219. And you have had to keep your lathe men at work too? Yes, they have had to be constantly on.
4220. How many in addition to the men who happened to be employed on the engine itself—Would you
                          not have to employ a number of lathe men and turners, almost every night to keep them going?
                          occasionally.
                          4221. How many men have you at Randwick? I think about seventy the last time I counted them.

4222. That is under your charge? Yes, the last time I counted them. There may be more now.

4223. Up to the beginning of last week, I believe, you have had only two combined motors running? Yes.
                         4223. Up to the beginning of last week, I believe, you have had only two combined motors running? Yes. 4224. We will speak of the period up to the present week. In order to keep those two motors on the road has it not been necessary for you to employ fully one-third of your men at Randwick? I could not say. 4225. Well, about what proportion of your men have you found it necessary to employ, in order to keep two of the motors running; that is, with the facilities that you had for changing when you could not effect the repairs necessary to day to get the motor out to-morrow; about what percentage of your men have been employed in attending to the motors? The greatest number of men on them is generally in the changing. It has generally been a rushed job to get them out of the cars and in again, otherwise I should be detained with my other work. I generally got them out as quickly as possible.

4226. How long does it occupy? Sometimes we commence at half-past 9, and I have been there till 12 o'clock at night, and as late as 2 in the morning, before I have got them shunted.

4227. It takes about two and half hours to effect the shunting? Yes, if there are two to shunt. And engines to change into the different cars, in a night.
                          engines to change into the different cars, in a night.
                          4228. But when you did not change one motor for another, then you always had a lot of repairs to effect; that would keep how many of your men? We could not get more than four men on them. That would be four men on the job itself—say two fitters and one labourer—sometimes boilermaker and his mate.
                          4229. Then I suppose you had to employ labourers to wait on them?
                                                                                                                                                                         Yes, I might want some lathe men
                          in addition. You cannot give any reliable idea as to the number of men, or the percentage of the total number of men who have been continuously employed on the combined motors keeping them going? It
                          would be almost impossible. It is simply a matter of rushing to get them in and out again.

4230. There has been a great deal of rushing them to keep two motors out of the six running? It has
                                                                                                                                                                          Out they must go. Oh, yes.
                          been all my trouble to have them right by half-past 5 in the morning. 4231. Do you know whether there was any break-down last Sunday?
                          4231. Do you know whether there was any break-town has beinday? One had a good smash.
4232. How many? One had a good smash.
4233. What happened to it? The left hand engine of No. 73 broke down.
4234. The gearing? The double links, bolts and everything—the brass that steadied it to the frame-
                                           All doubled up.*
                          4235. Did anything happen to any of them yesterday? I believe there was one in yesterday.
4236. Do you know whether a second combined engine broke down on Sunday? I do not think there was a break-down but there was a struggle to keep her out on account of the joints.
4237. Owing to the breakage of the joints? Yes.
                           4238. Do you find that there is very much more difficulty in keeping the combined engines out in comparison with the work they do than there is in keeping the ordinary motors out? Yes.
4239. Much more difficulty? It is a difficult matter to keep them out their time:
                           4240. Does that arise in your opinion from the machinery being in a vertical position instead of being horizontal? Yes, and from the complication of the thing. If you get one little job to do you have to
                           take half of the machine down to get at it.
                           4241. A small repair which would be simple and easy in an ordinary motor becomes a costly job in a combined motor, owing to the complicated nature of the machinery? Yes.
                           4242. Owing to the time necessary to take down the intervening machinery and put it up again? Yes.
                           4243. Is there not some considerable danger to the driver if he should happen when the motor is swinging
                           round a curve to get his foot between the cab and the footplate? Rather. It would be a matter of cutting his leg off.

4244. And if that should unfortunately happen to a driver when one of these combined motors is under steam with a loaded car attached to it, what would be the result? There would be nothing for it but to let her rip along until she ran off the road or something else. If there was one coming along the
                           street and I was at the corner, I could not get on to it.
4245. You could not give the driver any relief? No, I should have to jump in through the window, so
                           that in the event of any accident to the driver, to prevent him shutting off steam, it would be a source of extreme danger to some of the passengers? To them all I should think.

4246. As to any saving in the fuel compared with the ordinary motors, you are not prepared to give an opinion on that? It is out of my hands.
                            4247. But you are quite clear on this point, that looking at them as new engines coming out, they ought
                           to be fit to go to work without giving your repairing department any trouble; but that they have given you an enormous amount of trouble to keep them in running order? Yes, some trouble. 4248. Has there not been a large amount of trouble? Yes, sometimes, some difficulty to get them out,
                            and to keep them on the road.
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Added (on revision):—It is supposed that one of the bolts came out of the valve gear and caught the main rod, and so caused the links to double up and the bolts to break.

4249. Mr. Sutherland.] How many hours do you work at night? I go in at half-past 9, and I am there Mr. W. Allen.

4250. Is the shed a healthy place at night? No, far from it. I do not feel the same man at all.
4251. Is it a fact then that the men are unable to do anything like a fair night's work there, being choked with steam and smoke? You cannot do it. The men have to come outside to get air, and that is worse still because there is always a thick for there. still, because there is always a thick fog there. All the engines are blown down in that shed, and the

men are working amongst steam, smoke, and sulphur.

4252. If I have been informed that it is impossible for them to do anything like half the work that they could do in the daytime, is that correct?* They cannot get through it. There are times when they have to knock off and go outside, especially when they are lighting up the engines in a morning.

4253. Mr. Poole.] Have the men under your charge ever requested to be allowed to work in the day instead of at night, and to be replaced by others? Yes. 4254. Have you ever requested to be allowed to work on the day-shift? I have applied frequently. I have doctors' certificates at home now.

4255. You have not been allowed to change? No.

4256. If the Committee have been informed by one of your superior officers that any time a man applies for a change he can have it, is that in accordance with your experience? No, it is just the opposite. 4257. Do you know an engine called the "Kitson?" Yes.

4259. That is a vertical engine, is it not? No, it is an horizontal engine.

4260. It is a combined car, with two cylinders instead of four. How long has that been running? I could not tell you how long.

4261. Was that like this, subject to a constant necessity of repair? Oh yes, it was always in the shed. Perhaps it would run two trips and then have to go into the shed.

4262. The main outlines of this engine, with the exception of the compounding principle, are similar to

those of the engine known as Downe's patent? Yes.

4263. Can you tell us what they are going to do with it? Yes, they have taken it out of the car—off the car, and stripped it partly, and they have it erected outside the end of the turning shop. I believe it is going to be used for driving an electric-light machine.

Mr. Evans Davies called in and examined:—

4264. Chairman.] What is your occupation? Carriage-builder.
4265. Where are you employed? At Randwick.
4266. In what capacity? Foreman carriage builder in the Tramway Department.

10 Oct., 1884.

Mr. E. Davies.

4267. How long have you been in that position? Two years on the 3rd April last.
4268. Have you had much to do with the repair of the compound motors? I have nothing to do with the

4269. I mean with the cars? Yes.
4270. Do you find that they frequently require repairing, or do they run long without? Small repairs are frequently required. We have not had anything very big yet. The brake-gears that apply the shoes to the wheels, and the connecting levers.

4271. What is the difference in the construction of these cars and the ordinary cars? The ordinary cars have two bogies—two sets of wheels of four each. The combined motor has only one, and the motor part takes the other end.

4272. Mr. Poole.] When the cars were handed over to the Department I suppose the floor line was horizontal? Yes.

4273. Have you noticed any serious deflection in the floor line of the carriage attached to the motor? There is a deflection when the car is empty of about $1\frac{1}{4}$ inch, and it increases in proportion to the weight put on it. I measured two of the cars, No. 100 and No. 103. I took an examiner who was working under me, and we measured the deflection of car No. 100. It was then empty, and the deflection was $1\frac{1}{4}$ inch. 4274. That was the pattern car built in America? Yes; she went away, and I had not an opportunity to measure her when loaded. No. 103 came up and I measured her, the deflection being about the same as in the other car. I measured her again before she went away, and when she was about half loaded there

was a deflection of 15 inches.

4275. Does that arise from defective workmanship, or is it owing to the design? It arises from the designing of the car. I can only illustrate it in this way: A horse being in the shafts of a dray and the wheels being at the back end of the dray, a deflection would be caused by any weight between the shafts

and the wheels. That exactly represents it.

4276. You cannot balance the weight then with these cars or with the others where you have a double set of bogies? There is no means to truss them; there is a truss on the car, but the action of the truss is the reverse of what it ought to be; instead of holding the car up it pulls it down in that particular place. There are iron plates put to strengthen it, but they are evidently not sufficient.

4277. Have you noticed the facial board running underneath the projection of the deck?

4278. Instead of the joint being jointed fair, does it not appear to be hung at a considerable angle? That arises from the deflection.

4279. You have noticed that? Yes.

4280. There is a permanent set in car No. 100 of 1 inch? There is $1\frac{1}{4}$ inch.
4281. And when loaded I suppose the set is likely to increase to 3 or 4 inches? I have never measured of fully loaded, but from what I have seen I should say that it will be as much as 3 inches.
4282. Do you consider that safe for the travelling public? Well, they will go for a time, but I have given instructions to the examiner that should be see any likelihood of them getting worse he is to stant by met. instructions to the examiner that should he see any likelihood of them getting worse he is to stop them at once, and inform me.

4283. Therefore you consider them a source of danger, and that they require special watching? They require special watching, and I have given special instructions that they are never to be allowed to go out without being examined to see if anything has started afresh.

^{*} Note (on revision):—It cannot be expected of them to perform as much work as if they had the daylight to work with; although, considering the difficulties they have to contend with, they do a fair night's work.

Mr.E. Davies. 4284. There were a number of four-wheeled single bogie cars in use at one time; —all these have been converted into double bogies, have they not? $ar{\mathbf{Y}}\mathbf{e}\mathbf{s}.$

40 Oct., 1884. 4285. Was the conversion carried on under your supervision or in the Engineering Department? Under

my supervision.
4286. Can you give the Committee any idea of the cost of converting one of those cars from a four-wheeled car into an eight-wheeled car? Yes. Hudson Bros. took a contract to convert them and took what part of ironwork there was on the four-wheeled cars which could be used in the conversion. This they did. Hudson Bros. supplied the bogies at £70 each car, and took all the parts that were of any use

to help them out in the work of construction.

4287. In other words, they were allowed to use any material in the car, wheels, axles, and framework, and to supply two four-wheeled bogies instead of two-wheeled bogies, for a sum of £70 each car, to the Department? Yes, but the Department found wheels in addition; Hudson Bros. only found the bogies. They were to use, according to the first agreement, the India-runber springs that were in the four-wheel cars, but on further consideration the India-rubber springs were done away with; they were considered to be unserviceable, and they were, in fact, not the thing at all. Mr. Midelton mentioned to me that there was some arrangement to have steel springs put in. Hudson Bros. had £5 extra for supplying steel springs. I had new wheels and axles put under the cars, and we used what portions were under the cars We were very short of wheels at the time. serviceable to run on the old cars then running.

4288. Then it comes to this, from your statement, that Hudson Bros. received a total of £75 for each car, and the Department in addition furnished them with wheels and axles in order that they might convert the four-wheeled cars into eight-wheeled cars? Yes.

4289. Can you give the Committee any idea as to what would be the value of the wheels and axles? Some of the wheels and axles in the four-wheelers were useless to run under cars again. thin that they would have split the points. We have some in the yard now. The flanges were so

4290. Before going further can you explain why in your opinion the flanges were worn so thin? There was nothing to keep the wheel in its place on the road. The four-wheel bogie is 4 feet $3\frac{1}{2}$ inch wheel base,

centre to centre.

4291. On these four-wheeled cars each pair of wheels made such a sharp angle with the rails that the flange acted as a scissors edge upon the rails? Yes, in many instances cutting either the rails or the wheel, 4292. I suppose that accounted for the unearthly screech which they continually made? That was the cause of it.

4293. What is the value of the wheels and axles supplied to Hudson Brothers, to enable them to convert the four-wheeled into eight-wheeled cars? About £30 a set—that is a set of four pairs of wheels and

4294. £15 for each bogie set? Yes. They are steel wheels and steel axles; I am not sure of the price to a few shillings; but the figure I have given is about the price.

4295. You say that some of the old axles were useless;—what was done with them? Some of the old

wheels were useless—they are at Randwick yet.

4296. Did the Government supply others in their place to Hudson Brothers? Yes.

4297. New ones? Yes; all the wheels which were put on the four-wheeled bogies were new. Hudson Brothers were supplied with no old wheels. I considered it wrong to put old wheels on the new bogies, and we used them on the old bogies. I considered that they were worth about half the price of the new

4298. It comes to this: That, less whatever might be the value of the old wheels and axles, the total cost 4298. It comes to this: That, less whatever might be the value of the old wheels and axies, the total cost to the Department of converting each of these cars from a four-wheeled to an eight-wheeled car was about £105? There was something more, because after Hudson Brothers had finished, there was a certain amount of work to be done by the Department, in going over and adjusting the brakes, and seeing that everything was right. Then there were the tie-rods and other things which did not come in Hudson Brothers' contract. The work that we did at Randwick would be worth about £3 a car.

4299. Making the total cost £108? Yes, per car, less the value of the two pairs of old wheels, whatever

they might be worth.

4300. What would you value them at as a deduction? About half the price of new wheels, and a new wheel is worth about £2 8s.

4301. That will be £4 16s. for the wheels; what are the two axles worth? Of course you could not take them into consideration; they would come in again. They would be worth about £2 each.

4302. Then there would be a deduction due to the Department for unused material of about £8 16s.?

Quite so.

4303. These cars, I believe, were designed to carry sixty passengers? Yes. 4304. And that is all that they carry since their conversion? Yes.

4304. And that is all that they carry since their conversion?

4305. I suppose the bogies that are under the old four-wheeled cars are capable of carrying much more weight? Yes.

4306. As far as you are aware, was not the idea of constructing the four-wheeled bogies to lessen the tare weight in relation to the live load? Yes.

4306. As far as you are aware, was not the idea of constructing the four-wheeled bogies to lessen the tare weight in relation to the live load? Yes.
4307. And it has egregiously failed? Yes.
4308. Now that they have had to put eight wheels under the original four-wheeled cars, there is more dead weight per passenger when the cars are loaded, in the case of these converted cars, than there was with the original long double bogie cars? Yes; there is more dead haulage.
4309. Instead of reducing the dead weight they have had to increase it? Yes, per passenger.
4310. I suppose the bogies under the original four-wheeled cars are the same as under the larger 90-passenger cars? They are a shade lighter in the frame. The wheels and axles are exactly the same. The springs are made of half-inch round steel instead of with half-inch square steel. The difference would not be more than 1 cwt. on each bogie. would not be more than 1 cwt. on each bogie.

4311. The Department has actually had to increase the cost of these cars by £99, and at the same time to increase the dead weight, in order to render them safe for public purposes? In order to render them

serviceable.

4312. Mr. Teece.] Where are the old two-wheeled bogies? The remnants which Hudson Bros. did not take away are now out at Randwick lying in the sand. They are worth something for old iron.
4313. Mr. Poole.] You have had a good deal of experience with railway carriages in various countries?

About forty years.

4314. In the Mother Country as well as in this Colony? Yes, and in America also.
4315. Would you, from your long experience, think of recommending to your superior officer a kind of Mr. E. Davies. car such as that which is attached to the compound motor? Oh dear no—no practical carriage-builder 10 Oct., 1884; would dream of it—no man who knew his business would think of such a thing.* 4316. Nor would you have recommended the chief of your Department to use the four-wheeled cars?

4317. If unfortunately one of these cars should get off the road with a heavy load in the top, would it not almost as a matter of necessity roll over? One of them did roll over at the corner of Liverpool-

4318. Was it loaded? It happened to be nearly empty; but it rolled over under peculiar circumstances, one bogic took one road and the other took another.

4319. But, under any circumstances and irrespective of the economy of working them, if there were any economy, they are decidedly unsafe on the ground of their unstability? Yes; there is no economy in it, because while the double bogie car was wearing out two pairs of wheels the single-wheeled bogie would wear out three pairs of wheels.

4320. It would follow as a matter of course that the destruction of the rails would correspond almost with the destruction of the wheels? I should be inclined to say so, but I have no experience of the permanent way; from what I have observed I should be inclined to say that one would cut the other.

4321. You said that you had had forty years' experience as a carriage-builder;—will you tell the Committee where? In the first instance I was apprenticed at Westminster to a private carriage-builder; when I had been there two years my master failed; I then went as an improver to Adams & Co's.

Fairfield works at Bow.

4322. Are they large works? At that time they were one of the largest in England-locomotive and carriage works. I stopped there and became a piece-master; that is I took up piece-work by contract. I stopped there until the firm closed—between three and four years. From there I went to Joseph Wright's, the railway carriage builder. He made a lot of carriages for this Colony. Some of my carriages are here now. I was with the firm until they shifted their works from London to Birmingham. there I went to the Great Western Railway.

4323. At Paddington? At Paddington Station, and from there to the Royal Arsenal at Woolwich.
4324. Were you a foreman? I was at piece-work—that is the system generally adopted at home. They pick out a competent man and give him half-a-dozen carriages to make throughout at a certain price. He employs his own labour. I have had as many as twenty or thirty men working under me. From Woolwich I went to Canada.

4325. In what capacity? As a carriage-builder. I worked on the Great Western Railway.
4326. As a carriage-builder the whole time? Yes. I was there for four years. I then went back to England, the climate not agreeing with me, and I returned to the Great Western Railway at home. I then

had a better opportunity, and I went on to the London and North-western Line.

4327. Where at? At Euston Square. There was afterwards an opening for a foreman at Hazeldine and Co.'s, the rolling stock manufacturers. I went there as a foreman; in fact I was chief man there. I was foreman, inspector, and general valuator. I used to value all damages caused by accident on the Court Western Bailway and on the London and North-western Bailway. South-eastern Railway, on the Great Western Railway, and on the London and North-western Railway. Other Companies also employed me as a valuator. I held that position for from nine to ten years. Certain changes took place in the firm, and I afterwards came out here. My first situation in the Colony was in the employ of Mr. Whateley, private carriage-builder, of Newtown. There I built some omnibuses. I then went to Mr. James Bennett, carriage-builder, of Camperdown. I was offered inducements to return to Mr. Whateley's employ, and I did so. From there I went to the Waverley and Woollahra Omnibus. Company as foreman. I stopped with them for about two years. I then had an opportunity to return to railway work, and I went with Mr. Thomas Braid, who had some brake-vans and carriages to make. I assisted him in carrying out that job, and at the completion of it I took the place of foreman for Mr. Thomas Wearne, of the Glebe. I built ten carriages there for the Government. On the completion of that job I took the place of foreman at Messrs. Moyes and Donald's. The firm failed. I complete the work in hand for the Government, and was afterwards employed in the Government Railway Works at Newcastle. I was there until I came into the Tramway Department.

4328. You have had a large and varied experience in all kinds of carriage-building? In every kind.

4328. You have had a large and varied experience in all kinds of carriage-building? In every kind.
4329. And the result of your forty years' experience is that you would not recommend cars of the description attached to the compound motors? No.
4330. Nor the four-wheeled cars? No experienced carriage-builder would think of such a thing.†
4331. Chairman.] Do you advocate double decked cars? No, certainly not.
4332. Do you find them more expensive by reason of repairs? They are very expensive in that way, and still more for haulage, and the life of a double-decked car is not one half of the life of a single-decked car. I have seen a double-decked car on the line at Randwick with the brake on, and I have seen the wind catch the top and slide it down the line. That could not occur with single-decked cars; there is not the same wind resistance. When the brake has been suddenly put on, I have seen the whole of the top of one of these cars vibrate as much as 3 or 4 inches. That pulls the frame of the cars all to pieces. It shakes all the framing from the sole-bar upwards, and the iron posts which are stuck up make it still worse. They are only screwed into a cast-iron shoe, and we are continually repairing them. This does not occur with the cars which have wooden instead of iron posts; we have had no trouble with them. not occur with the cars which have wooden instead of iron posts; we have had no trouble with them. The roof rails have not cost a single shilling for breakages. We have single-decked cars which will seat seventy passengers, and some of them will seat eighty. They run much more lightly and smoothly; and with greater safety.

4333. What is the difference in the dead weight of the double-decked and of the single-decked cars? The single-decked cars, properly constructed, could be made to seat seventy passengers, or to carry 100 with a weight of 3½ tons. I do not know what the weight of a double-decked car would be. They are reported

to be 7 tons in weight, but I should say that they were nearer 8 tons.

4334. How many will they carry? They will seat ninety; but I have seen as many as 200 upon them.

4335. You are of opinion that the Government would save considerably by using the single-decked cars

^{*} NOTE (on revision):—My answer "No" is all that I wished to convey; the remainder was merely conversational. † NOTE (on revision):—My answer "No" is all that I wish to convey.

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Mr. E. Davies in place of the double decked-cars? That is my opinion; there is not one half the wear and tear, and
there is not one half the cost in repairs; they would also last much longer from the content ment the state of the cost in repairs; they would also last much longer from the content ment the state of the cost in repair of the cost in the cost in repair of the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in the cost in th
                                                    4337: And it is your deliberate opinion that double decked cars cost more to keep in repair than do single decked cars? Yes:
                                                    4338. Mr. Poole.] And some of the single-decked cars will carry within ten of the number carried by the double-decked cars? Yes. Which was a substant of the number carried by the
                                                    double-decked cars? Yes. White part are a such are you'l reacte to tuo seg usife your ed 1784 4339. Chairman. Can you tell the Committee the difference in the cost of the two cars? I The contract
                                                    price of the double-decked cars is from £595 to £620, and the single-decked cars would cost £400. The £340. Or a difference of almost £200 to represent a carriage of about ten more passengers ? JoYes . The
                                                   4341. On holidays or race-days what would be the difference between the carrying capacity of the two cars? I have seen 200 on double-decked cars. I have seen them loaded till they have what I consider quite unsafe of un your your end chan upon and successful ours. I stinger unitures to now be guites.
                                                  4342. Do you think they could safely carry 100? They could carry 100 comfortably if a few people were to stand between the seats and on the platforms. I should not recommend them to carry more than 100. The extra number of passengers does not compensate the Government for the repairs which are afterwards necessary.
                                                     4343. Do you think it would be better to run the single cars more frequently than to use the others?
                                                    mich lot led, the other, the largest size, No 1 "crotom ent no ro beor ent no vysed octed ton bluow went
                                                   noter at 11 tons and the ear at 6 tons, and also no, low standing with a ton so ad early bliow of Nr. 4464 and ees 13 tons equal to the weight of the agent is dwin a ton which will pull considerably more agent than the combined motor will draw more cars loaded. The
                                                   reglit than the combined motor. See 2011 that the combined motor, I have been told repeatedly, sticks up with two cases. The combined motor, I have been told repeatedly, sticks up with two cases. You say you have been told .E88F, RAGOTOO. Law Case.
                                                  22-1. Have you had much to do with the repairs: trisgration of the ontology of the state of the ontology of the state of the often are the AOTTUS, ame in the shed, darkand of three imes are the shed of the shed, darkand of three imes are sometimes.

The shed conetimes of three imes of three imes of three imes of three imes.
                                                                                                                                                                                                                                                                                                                                                                                                                                 L. coll sometimes.
                                                John Campbell Dibbs, Esquire, called in and examined as a valve and there are start there was an interest as a valve spinion of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract o
     J. C. Dibbs,
Esq.
4346. Are you a manufacturer of rolling stock or railway material? No. 4347. Are you agent for any importers of such materials for the Government? Way was agent for Mr. Carson Woods.

4348. For the importation of some dump-cars? I was agent for one dump-car, a now remember writing a letter to the Commissioner, for Railways, as agent for the patentee of the dump-car, on the 2nd of April 1883? I believe I did to the second of the form of the patentee of 4350. How, long have you been agent for Mr. Carson Woods? Somewhere about two years: I cannot say exactly.
                                                  messioner in regard to the dump-cars: I will passed the second of the order that time of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second 
                                                    arranged; this is less expensive to work than the raive arrangements on the other five motors imported.
                                                                                                                                          4397. Has your attention been called to the boilers of this compound engine? Yes.
                                                    4398. Have you had any miberimexe but his believe the boilers have needed
  Mr. 4360. Chairman.] What is your occupation? Engineer.

J.H.Garforth. 4361. Where are you employed? In the Tramway Department at Raindwick of the bestou evad no Y. 68:14

4362. How long have you been in the Tramway Department? Three years and two months eval T. 00:14

4363. What experience had you prior to entering the Government service as an engineer? Some thirty

Three years and two months.
                                                    years experience.

4364. In what capacity? As an apprentice to the trade, and as a draftsman, and as manager of works.

4365. What works? W. and J. Garforth, Duckenfield, near Manchester.

4366. What class of engines and rolling stock used you to turn out? All kinds of land engines for factory and colliery purposes, and locomotives also.
                                                                               experience.
                                                      factory, and colliery purposes, and locomotives also.

4367. Have you had much to do with the compound motors now running? They have all been erected.
                                                    under my supervision. It was the first motor and car arrived? Paragraphs and the supervision when the first motor and car arrived? Paragraphs and the supervision of the compound motor. That a shift to do with the car.

4869. I understand you supervised the erection of it? Yes, the motor; I had nothing to do with the car.

4870. Will you favour the Committee, with your opinion of the compound motor—that is, whether you consider it as useful, as economical, and as well adapted for our tramways as the ordinary Baldwin motors? I do not think it is equal to the Baldwin motor in any of these respects.

1. The supervision of the compound motor—that is, whether you consider it as useful, as economical, and as well adapted for our tramways as the ordinary Baldwin motors? I do not think it is equal to the Baldwin motor in any of these respects.
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4371. Why? I think its economy of fuel is questionable. I cannot speak from my own personal know-ledge, but from inquiries I have made at different times I think that if the Baldwin motors were in good J.H.Garforth. order they would burn as little, if not less, fuel than the combined.

4372. In what other way is it inferior to the Baldwin motor? I think the very fact of its having vertical 14 Oct., 1884. cylinders and working on a dead axle is prejudicial to any machinery; I cannot see how such machinery

4373. There is no spring ——? There is no spring under the machinery.
4374. Do they often get out of order? They have done so very frequently.
4375. What has been the principal part that requires repairs? The valve-spindles and the saddlecastings connecting the two cylinders.

4376. Any other parts? The bolts require tightening; up; they are constantly shaking loose with the hammering on the road.

4377. How long will they run without requiring to be overhauled;—how long will they run without breaking down or requiring repairs? Since the alterations have been made they may run for some time; I do not think they will break down in that particular spot. Through the strain on the valves not being equal they were liable to give way at any time.

4378. Do you think they are heavier on the permanent way than the other motors? They must be. In

itself without the car the motor is heavier than our ordinary motors.

4379. What is the difference in weight? I reckon the weight of the combined motor alone at 11 tons when loaded, the other, the largest size, No. 1 class when loaded is 13 tons; but if you take the compound motor at 11 tons and the car at 6 tons, and then a third of the 6 for the weight on the motor, that makes 13 tons—equal to the weight of the largest Baldwin motor, which will pull considerably more weight than the combined motor. The 10-inch cylinder Baldwin motor will draw more cars loaded. The combined motor, I have been told repeatedly, sticks up with two cars.

4380. You say you have been told ——? Yes, I cannot say from my own knowledge; I am not on the

road myself.

4381. Have you had much to do with the repairs of these motors? Yes.

4382. And the other motors as well? Yes.

4383. How often are the combined motors brought into the shed for repairs? Two or three times a week sometimes.

4384. Do the repairs take long? It is this way: Having three or four engines standing there doing nothing, when a valve spindle broke a spindle was taken off one of the standing engines and put on this one, so that there was not much lost time.

4385. You rob one engine to repair another? Yes.

4386. What do you do with the one you take a part from? While it is standing there we get a new . 14 5. piece made.

4387. How long would it take you to make one, supposing you could not rob another engine?

spindle, coupling the engine together again, a couple of days.

4388. How often do you find it necessary to repair the Baldwin motors? If you take a new engine, or one that has had a thorough overhaul, and put her on the Redfern line, I should say that, with the exception of renewing the brake-shoes and closing the braces of the main and side rods about every ten days or a fortnight—something like that—according to the quality of the brass, one of these engines would last from six to nine months with very little repairs.

4389. Do the Committee gather from you that the compound motor is more expensive for repairs, and more destructive on the permanent way, than the Baldwin motor, and will not carry the same load as the smallest Baldwin engine? As the middle-sized one with the 10-inch cylinder.

4390. Have you had anything to do with the double-decked cars? No, I have not. 4391. You have had no experience with regard to the cars? No.

4392. Mr. Poole.] You see this working model here? Yes.

4393. Is that a correct miniature of the pistons and valves and valve spindles on the combined motor as they originally came out? 'Yes.

they originally came out? I.es.
4394. You spoke just now of the unequal pressure on the valves as being a source of weakness in your

4395. And therefore increasing the expense of maintenance. Will you point out to the Committee from the model itself what you mean by that? (Witness explained by reference to the model) and the same parent expense of keeping. What you have now explained to us accounts for the difficulty and consequent expense of keeping. them in repair? Yes. Allow me to say that that valve motion is similar to that in the first combined motor that came here; the other five are differently it is the same patentee's motion, but differently expensed, this is less expensive to work then the valve expense on the other five motor imported. arranged; this is less expensive to work than the valve arrangements on the other five motors imported.

4397. Has your attention been called to the boilers of this compound engine? Yes.

4398. Have you had any experience with them at all in examining them? No, the boilers have needed no repairs. 50 A 11

4399. You have noticed their peculiar construction? I have.
4400. There are practically two boilers, a horizontal and a vertical boiler;—is not the horizontal boiler full of water up to the top of the skin? Yes. 4401. Then as the water expands in boiling it has to force itself along the top, underneath the top skin,

and into the vertical boiler? Yes.

4402. Has your attention been called by the drivers or have you heard any complaints of their continual priming? That I have noticed myself.

4403. You have seen them prime? Yes.

4404. What, in your opinion, was the cause of the priming? Too small steam space in proportion to the size of the boiler.

4405. Would not the steam be, as engineers express it, wet steam? Yes, very wet indeed.

4406. Would not that be extremely injurious to a complicated mechanism such as this? One of the first principles required by a compound engine is dry steam.

4407. And that is impossible with the present boilers? Impossible.

4408. And therefore what advantage might otherwise perhaps be attained by the compound motor using steam twice over is lost now altogether, owing to the inefficiency of the boiler in giving wet steam instead of dry? The engine would have stood a better chance of doing its work had it had dry steam.

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4409. Coming back to the Baldwin motors, the springs are in connection with the engine itself over the
J.H. Garforth.
                      wheel, and assist in cushioning the machinery against the irregularity of the road?
14 Oct., 1884. 4410. Is that possible with the vertical machinery? No.
4411. Then the shock thrown upon the wheels by the inequalities of the road must be transmitted direct to the machinery? Certainly.
                      4412. Will not that tend then, not as a matter of opinion, but of absolute certainty, to very much knock the machinery to pieces in a very short time? It shows itself from the fact that the bolts in every part
                      are continually slacking back and wearing slack in the holes.

4413. That is to say they are riming the holes out? Yes, from the constant concussion.

4414. If you were asked by your superior officer, from the experience you have already had of the com-
                      bined motor, as compared with the ordinary Baldwin motor, to recommend the Government to purchase a considerable number of combined motors, would you feel justified in doing so? Certainly not.
                      4415. Without inquiring very much more into detail, taking a general view of this matter, and the load
                      the ordinary Baldwin motors and the combined motors will take, you consider there is no ground of economy
                      sufficiently established in favour of the combined motor? I do not.
                      4416. And you could not recommend the Government to proceed further with that experiment? I could
                      not conscientiously.
                                                                      Mr. Albert Blair Brown called in and examined:—
A. B. Brown. 4417. Chairman.] What is your occupation? Running foreman in the Tramway Department. 4418. How long have you been in the Tramway Department? Since the commencement of the tramways,
about five years ago.

4419. Did you come out with any of the Baldwin motors? Yes, the first four.

4420. You had to put them together, had you not? Yes.

4421. Have you had much to do with the combined motors? I have driven the company of the Baldwin motors? I have driven the company of the Baldwin motors? I have driven the company of the Baldwin motors?
                                                                                                                                  I have driven the compound motors.
                      4423. Do you consider the compound motors equal to the Baldwin motors? I do.
                      4424. Do you consider them better? Yes; that is, engine for engine.
4425. In what way are they superior to the Baldwin engine? They burn less fuel for one thing.
4426. How much less fuel? I only go by my experience; I know what fuel we use on the Baldwin
                      motors
                     4427. What quantity of coke does the Baldwin engine use to run, say 100 miles, on the line to the railway? From 1,500 lbs. to 1,600 lbs.*
                     4428. Every 100 miles? No, not every 100 miles; they are kept on the line from half-past 5 o'clock in the morning till 12 at night, and they burn about 1,600 lbs. in that time at continual work.

4429. What quantity will the combined engines burn? From 1,000 to 1,100 lbs.; probably less. I am
                     just giving this approximately.
                      4430. You say you have been driving one of these combined motors? Yes.

4431. Have you been driving one in continual work from half-past 5 till 12 at night on the railway line? On different shifts I have; I have driven them from 6 o'clock in the morning till 7 in the evening con-
                     4432. What quantity of fuel will a combined motor use in continual running, the same way as the Baldwin motor, from half-past 5 till 12 at night? I should judge between 1,000 and 1,100 lbs. 4433. How do you judge? I have been on both of the shifts, and I know exactly how much is used on
                     each shift; I have not run the engine continuously from half-past 5 till 12, but I have run from half-past 5 in the morning till 2 o'clock in the afternoon one week, and the next from 2 o'clock till 12.

4434. In what other way is the compound motor superior to the Baldwin? It uses less oil, and some
                      parts of the construction I consider superior to the Baldwin.
4435. What parts? The side rods are closed in, and the construction of them is such that they do not
                      require to be taken down; they do not wear out as quick as in the Baldwin.

4436. Any other way? I think the general construction of the engine will prove that the repair required
                      will not be as much as in the Baldwin engines.
4437. What has been the experience of the past as regards repairs? The actual running repairs have
                     been very light, as far as my experience goes with them.

4438. Do they run as long as the Baldwin motors? Yes, they make the same hours.

4439. Mr. Poole.] You are running foreman? Yes.

4440. How long have you been so? Since the 7th of September.

4441. And previous to that you were a driver? Yes.

4442. You say the ordinary Baldwin motor on the railway section uses about 1,600 lbs. of coal a day? Yes.
                      4443. How do you know that? From my practical experience in driving them.
4444. Have you seen it measured or weighed, or delivered to you? Yes; each bag weighed 100 lbs., and
                      4444. Have you seen it measured or weighted, or the number of bags put on board the engine were charged to us.
                      4445. And you say sixteen of these bags were used in a day? 4446. 1,600 lbs., not hundredweight? Yes.
                      4447. That is the consumption of the Baldwin motor? Yes, about the consumption.
                      4448. With respect to the coke used on the combined motor, you say it amounts to 1,100 lbs. or 1,200 lbs.?
                      No, 1,000 or 1,100 lbs.
                     4449. Have you seen that put on board? Yes. 4450. Did you fire yourself? Yes.
                     4450. Did you fire yourself? Yes.
4451. At both ends of the trip? No, at the Railway Station.
4452. The fuel-man never did that for you? No, he did not when I was there.
                     4453. When did you go there? I think it was some time in July. 4454. You went with the first combined motor that was running?
                                                                                                                                           I ran the first one, but not when they
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4458.

first came out; but I ran the original engine that first started, No. 70.

4455. And you always fired that engine yourself? 4456. The fuel-man never fired it for you? No. 4457. You are quite sure of that? Certain of it.

^{*}Note (on revision):—I misunderstood Mr. Poole's question; they will burn about 3,200 lbs. per 100 miles run.

135 ON THE PURCHASE OF RAILWAY ROLLING STOCK. 4458. In answer to the Chairman you said the combined motor cost very little for running expenses? Yes. A.B. Brown. What do you call running expenses? The consumption of fuel, oil, waste, and repairs. 4460. What repairs? General running repairs. .14 Oct., 1884 4461. Does that include putting new valve spindles in? No, that is not running expenses. 4462. Nor braces, and so on? No. 4463. What kind of repairs do you call renewal of valve spindles, if it is necessary to renew the valve spindles when they have been at work a week or two? I consider that when any part of a machine continually breaks that is a fault in construction. 4464. Either a fault of workmanship or design? Yes.
4465. In this case was it a fault of design or of workmanship that the valve spindles continually broke or bent? I consider it a fault of workmanship.
4466. Was the material bad? It was in one case. 4467. There have been many cases; -what about the other cases? I consider the fault of workmanship was in the valves not being turned up true.

4468. The valves themselves? Yes.

4469. That is, they did not fit the port properly? Yes.
4470. They are solid valves—piston valves? They were solid valves originally.

4471. In what way did the defective turning up of the valve itself assist in bending or breaking the valve spindles? In one or two cases I think the valve got in one of the ports, not being a true fit. That was the opinion at the time among the workmen. 4472. Has that been remedied now? Yes.

4473. How many of the motors went through your hands in the short time you were driving them? have driven nearly all those that have run. Nos. 70, 71, 72, 73, and 74.

4474. Six of them? No, five.

4475. How many weeks were you driving them? I cannot say exactly; I was on special work part of the time, but I should judge I was driving them about five or six weeks altogether.

4476. And in that time you had five or six motors to drive? Yes.

4477. As a rule did you ever drive one of them for two days running without going to the shop for repairs? Yes, longer.

4478. How much longer? I ran one engine as near as I can tell about three weeks. 4479. Which one was that? No. 71.

4480. You ran six of them six weeks altogether, and one of them for half that time; now the other five must have gone through your hands in three weeks? There were two or three running at the time.

4481. You have been running these engines since they first came out? Yes.

4482. Do you not know of your own absolute knowledge that up to the commencement of last week there were only two combined motors kept on the line? No, I did not know that; I understood there were three running for some time.

4483. In answer to the Chairman you told us this machinery would call for less repairs than the machinery of the ordinary Baldwin motor, owing to the difference in its construction, that is being vertical machinery?

4484. Do you wish the Committee to understand that according to your experience machinery working on a dead axle without anything to ease the concussion will last longer than machinery that has a spring to it? I take my opinion from what I have seen between these compound motors and the Baldwin motors. 4485. That is your opinion, that it will last longer having no spring, than one that has a spring? So far I am convinced it will be a fact.

4486. That it will last longer? Yes.

4487. Although working on to a dead axle? Yes.
4488. And subject to all the inequalities of the road? Yes.

That is your opinion? Yes.

4490. You have had the whole six engines through your hands;—did any of them ever prime? They did when they first came out—when they first came from the shop.

4491. They pumped water out through the steam ports? Yes.

4492. What has been done to obviate that? They obviated that themselves when first they came out; all boilers prime when they are first run from the grease and oil that is used inside them in constructing them. We generally expect boilers to prime the first day or two after coming from the shop.

4493. After the first day or two was there no priming with any of them? There was priming, but if the water is carried rightly there will be no priming. All boilers will prime if the water is carried above a

4494. Have you plenty of room in this boiler for steam space—no need to press the steam space with water in order to save fire space? There is no necessity for that. 4495. There is plenty of room? Yes.

4496. You are quite sure of that? Yes, from the experience I have had. 4497. Mr. Garrard.] You are a mechanic by trade? Yes.

Where did you serve your time? At the Baldwin Locomotive Works at Philadelphia,

4499. You have been running these motors until within the last few weeks? Yes.

4500. You told Mr. Poole just now that in your opinion it was the fault of the material in one case that the valves were bent up; you were under the impression that the piston-valve got into the port? That was my opinion at the time; I did not investigate it any further.

4501. As a driver it is no part of your duty to take any of these engines to pieces? No. 4502. When did you gain your knowledge of the construction of the machines themselves—since you have

been running foreman? No. 4503. When? I have been out to Randwick when they were putting them together; I examined the parts before they were put together.
4504. You believe one of the causes of the bending of the valve-spindle was the bad shape of the piston-

valve, owing to its not being turned round; -will you explain? It was bad construction in one case.

4505. That is to say, the piston was too slack, giving it the option of canting over into the port?

4506. Is it not a fact that since these motors arrived here guides have been put on? Yes.
4507. Would not that prove that it was in the design the fault was? No the construction.

Mr.

4508. Have any of these valve-spindles bent or broken since this outside guide was placed there? No. A. B. Brown. 4509. You said just now you were quite sure as to the quantity of the fuel burnt by these motors, and that none of the fuel-men ever fired for you at the terminus? Yes.

4510. Are you aware that the fuel-men do fire for the drivers of these motors? Yes.

4511. Do you know whether the fuel with which the boiler is charged by the fuel-man is debited against the engine? Yes.

4512. Or only the bags placed in the bunker? The fuel is all charged to the engines.
4513. I will put it in another way. When the fuel-men charge the fire do they use fuel from the bags they place on the motor, or do they take it from the heap? There is a box put on the platform specially for these motors, and none of the other motors are allowed to take fuel from this box. The cost of all fuel that goes into these boxes is put down to the combined motors. The other motors get their coke direct from the coke-house.

4514. You have recently been appointed running foreman;—who was running foreman previous to your being placed in that position? Mr. Hendy.

4515. What position does he occupy now? He is in charge of the running repairs at Pitt-street.

4516. Who did Mr. Hendy supersede? Mr. Davis.
4517. Where is Mr. Davis? At Randwick, I believe.
4518. In whose place? Mr. Garforth's place.
4519. What has become of Mr. Garforth? I do not know; I saw him there yesterday.
4520. Mr. Garforth was foreman, was he not? Yes.

4521. I think you said that your experience of the running of these combined motors embraced a period of six weeks, and that during three weeks of that time you were running No. 71, and never had a breakdown? Yes.

4522. The other three weeks was split up among the other five motors? Yes.
4523. Were there any break-downs on the other five motors? No, not while run by me

4524. You are quite sure that for three weeks you ran No. 71 without a break-down? Yes.
4525. When you speak of the number are you taking the number of the engine or the number of the car?

The number of the engine.

4526. Is it not a fact that the same car is used continuously, but with a different engine? Not in my case. 4527. You never after the first day or so found the boiler priming with you, you said just now, I think? I have had the boiler priming, but I attribute that more to my own fault than the fault of the boiler, letting the water get too high.

4528. Does the level of the water require more watching in the combined motors than in ordinary Baldwin's? I do not think so. I never experienced any trouble that way.

4529. Do you know of any alteration being made in any of the boilers to prevent priming? No, not that I am aware of.

4530. You never knew anything to be done to the internal pipes or anything of the sort? No. 4531. Do you know if one of the saddles of these engines have broken? Yes.

4532. Which number was that? I could not exactly say which.
4533. It was not 71? I do not think so—not while run by me.
4534. Do you know if any of the stanchions or supporting-rods of the cylinders were ever broken or bent?
Not while under my charge; I never heard of any having been broken.
4535. Did you ever have any difficulty in bringing another car, besides the car attached to the motor, up

from the railway? No, I cannot say I have. Of course there might be a difficulty if the cars were overcrowded, the same as the other motors have.

4536. No more difficulty with the combined motor than with the ordinary Baldwin? Not with the same

4537. How many men are there employed at each end called fuel-men? There are only two extra men put on for the four motors running now. There are two shifts of men in the day.

4538. How were the Baldwin motors supplied with fuel—by the fireman on the engine? No, there are

always coke-men.

4539. Are there not more men now to supply the combined motors than to supply the Baldwins? There are two more men at the fuel stations, but there is actually a gain of six men—six men less on the motors. 4540. Because there is no fireman on a combined motor? Yes. 4541. But more fuel-men? We do not call them fuel-men. There are actually two men more for the

day at the fuel places.

4542. Does the driver of a combined motor assist to coal? No.

4543. Mr. Suttor.] You said the Baldwin motor consumes 1,600 lbs. of coke and the compound engine from 1,000 lbs. to 1,100 lbs.? Yes.

4544. But the combined motor only takes one carriage? One carriage attached to the motor, but we

can attach another car if the traffic requires it.

4545. Do you do it? Yes, when necessary.

4546. What is the rule;—do you run one or two? We run one as a rule.

4547. What is the rule with the Baldwin motors? We run two.

4548. Always? Not always. We have been running two with the Baldwin's from the Railway; that has been the rule whether there were passengers or not.

4549. As a rule the combined motor hauls one carriage and the Baldwin two? Yes; should the traffic require it the combined takes two.

4550. Do these carriages carry the same number of passengers? The combined will carry about the same number of passengers—more, I believe, than the average car that is running.

4551. So that the compound motor burning from 1,000lbs. to 1,100lbs. of coke a day carries one carriage, and the Baldwin motor, burning from 1,500 to 1,600 lbs., carries two? Yes.

4652. And thus, compared with the loads they carry, the consumption of fuel is less on the Baldwin than on the compound? No, I do not understand it in that way.

4553. From your evidence I understand that as a rule these compound motors only draw one carriage?

4554. And consume from 1,000 to 1,100 lbs. of coke a day, while the Baldwin motor as a rule, taking two carriages, consumes from 1,500 to 1,600 lbs.; and therefore, taking both these circumstances into consideration,

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consideration, the Baldwin motor drawing two carriages burns only 400 fbs. of coke more than the compound
  motor drawing only one? But we can put two carriages on with the combined motor on the same con. A. B. Brown.
 sumption, or with a very slight increase.
  4555. Mr. Wright.] Do I understand that the Railway traffic is done with two classes of engines—the 14 Oct., 1884.
  Baldwin motor and the combined motor?
                                                                    \mathbf{Y}es.
 4556. Are they both capable of doing the work required of them? Yes.
4557. You said just now that the combined motor usually carries its own car? Yes.
  4558. But when the traffic requires it, it can take another car behind it? Yes, that can be seen every day.
  4559: And it performs its work like the rest? Yes.
 4560. Then in fact the combined motor does exactly the same work on the Railway line as the Baldwin
 motor? Yes:
 4561. And carries the same number of passengers when necessary? Yes.
 4562. Mr. Poole.] Do you wish the Committee to understand that it is a usual thing for the combined motor to take an extra carriage? No; we do not pull rolling stock over the road without necessity.
 4563. Is it a usual thing for you to take an extra carriage behind the combined motors? When the traffic
 requires it it can be done.
 4564. Is it a usual thing?
                                             I cannot say whether it is a usual thing. It can be done, and is done, when
                   The Baldwin motors that have been running on the Railway section have been using what is
 called the middle class carriage.
                                                     When one of these carriages will not do the traffic we have been obliged
 to run two of these middle class cars.
 4565. While running foreman did you never know the compound motors to stick up on the road from
 Belmore Park without any carriage behind them except their own? I cannot say I have.
 4566. Mr. Wright.] Have you ever known the Baldwin motors to stick up? Yes.
4567. Mr. Poole.] Last Sunday week, the 5th October, you were running foreman then? Yes. *
4569. Did any one of these compound motors break down on that day? Yes.
4569. Which of them? I think it was No. 71; I will not say for certain.
 4570. What happened to it? One of the pins came out of the valve gear. 4571. And disabled her? Yes.
 4572. And she had to go into the shed? Yes. I would like to explain that a little further: The pin came out of the valve gear owing to one of the nuts having worked loose; the driver did not see it, and the consequence was that the gear dropped down. That was the only defect. I attribute that to care-
 lessness on the part of the driver.
 4573. As you are running foreman there is a considerable amount of responsibility on your back now? Yes.
 4574. Have you never asked yourself what was likely to be the result to a car-load of passengers on a combined motor and car if anything should happen to the driver—if he should be paralysed, or take a fit,
 or meet with any serious accident, so that he could not cut off the steam? Yes. 4575. What is your answer? My answer is that the thing is hardly possible.
                                                                                                                            I have been driving loco-
 motive engines for seven years now and I never knew a driver yet to go off as suddenly as that.
 4576. Do you think it a reasonable thing to allow a steam engine to run through a crowded city with only
 one man on it, setting aside economy altogether. Is it not a fact that should anything happen to the
 driver while the motor is in motion the conductor cannot get at him the same as he can get on to an ordinary Baldwin motor, nor no passenger, nor no person from the street, owing to his being boxed in? A person could not get to the driver as quickly as he could on a Baldwin motor, but a person could step into that cab from the outside.
 4577. When it is travelling 9 or 10 miles an hour, or even at 8 miles an hour—would not that be a very risky thing to do? I think the risk would be just the same with the Baldwin motor.
 4578. Mr. Garrard.] There is no brake attached to the car of the compound motor, is there—to the car itself? Yes, there is a hand-brake which can be worked at the rear end.
 4579. Has that been placed on since the cars came here? No.
 4580. It was in the original design?
                                           Mr. James W. Cayzer called in and examined:-
 4581. Chairman.] What position do you occupy? At present I am Chief Draftsman in the Tramway Mr. J. W. Cayzen
 4582. How long have you been in your present position? During the last couple of months; I have there altogether as draftsman.
 4583. Whose place did you supply? I took Mr. Thorpe's place when he was transferred to the Railway Department.
 4584. Where were you employed previous to entering the Tramway Department? In London, by Alexander Wilson & Co.
4585. Had you anything to do with railway rolling stock there? Not directly.
4586. Mr. Wright.] Did you make the drawings of the motors running in the combined cars? Yes, according to Mr. Downe's directions.
 4587. Does the motor differ from other motors in its design? Yes. 4588. It is a compound engine, I believe? Yes.
4589. Do you know anything about the advantages claimed for the compound engine? Yes. 4590. Have you had any experience in compound engines? Yes, a great deal.
4591. Can you explain to the Committee in what way the application of this principle to steam-motors is likely to prove advantageous? Yes; apart from the great saving of steam, and consequently of the producer of steam, that is, fuel, the advantages of this compound engine are those that are common to all
producer of steam, that is, fuel, the advantages of this compound engine are those that are common to all compound engines and demonstrate the superiority of the compound system in this case the same, as in any other case in which the compound principle has been applied. If you will allow me to to go into figures a little in comparison with an 11-inch Baldwin, I can demonstrate it more clearly still. We have a boiler pressure of 130 lbs. per square inch in both boilers, compound and Baldwin, and the mean pressure in the cylinders of each is 125 lbs. Now the mean pressure on the high pressure cylinder in this compound motor is the area multiplied by 125 lbs., which gives 7,875 lbs. of steam pressure on the top or high.
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Mr. high-pressure piston. The mean total pressure on the low-pressure cylinder is a total of 7,458 lbs. Well, J. W. Cayzer. these are the two positive quantities, as you may term them. But against the sum of these two pressures you have a back pressure, as you must have in a compound engine, of 4,158 lbs. The total effective pressure per stroke in this compound engine will therefore be 11,175 lbs., while the total pressure in the large pressure per stroke in this compound engine will therefore be 11,175 lbs., while the total pressure in the low-pressure cylinder is a total of 7,458 lbs. Well, but against the sum of these two pressures you have a back pressure, as you must have in a compound engine, of 4,158 lbs. The total effective pressure per stroke in this compound engine will therefore be 11,175 lbs., while the total pressure in the low-pressure cylinder is a total of 7,458 lbs. 11-inch ordinary Baldwin motor is 11,875 lbs. Now in reference to the cubic inches of steam used: cubic inches of steam used per stroke in the compound engine is 567, and the cubic inches per stroke used in the 11-inch Baldwin engine is 1,140. Of course that is on one single stroke in any direction of the piston in one cylinder. So that this compound engine, using 567 cubic inches of steam, gives a pressure per stroke of 11,175 lbs., while the 11-inch Baldwin engine, using 1,140 cubic inches of steam, gives a pressure of 11,875 lbs., that is, 46 per cent. less steam is used by the compound engine to do the same work per stroke as the Baldwin engine does; but there is a difference in the diameter of the wheels. The ordinary Baldwin motor wheel is 35 inches in diameter, and this compound motor wheel is only 30 inches; consequently, there is a difference of 16 per cent., that is to say, there is 16 per cent. less diameter in this compound motor; therefore you must deduct this 16 per cent. from the 46, and you get a net saving of 30 per cent. in the steam used to cover the same distance on the road.

4592. What is the advantage of that, attached to the compound engine as against the ordinary Baldwin engine. Is it the much less consumption of steam? The less consumption of steam and easy manipulation.

It is worked by one man.

4593. You say you made the original drawings for this design? Yes.

4594. Was there any difference between the cars as imported here and the original drawings? Practically

4595. Was there any difference between the motors that were landed here at a more recent date over the first ones that were landed? \mathbf{Y} es.

4596. In what does that difference consist? In the difference of the application of Joy's valve gear to

the engine.
4597. Was the valve gear in the first engine in accordance with the original design or a departure from it? There are two classes of Joy's gear.

No, it was on the same

4598. Was the first motor different in respect of Joy's gear from your drawing? No, it was on the same 4599. Is the valve motion in the five motors subsequently imported in accordance with the inventor's

design? No, there is one part in which it differs.

4600. Have any of the valve spindles of these motors broken? There have been a great many bent; I do not know about their breaking.

4601. How do you account for this? By one small feature in Joy's own idea not being carried out in accordance with his design. That is in the second batch of five engines.

4602. Do I understand that the American makers failed to carry out the inventor's idea according to his

Yes, in the five engines.

4603. You have had large experience with compound engines? Yes, twelve years on and off.

4604. Do you know of any successful application of this principle in the old country for locomotive purposes? Mr. Webb, on the North-western line, has achieved considerable success with his compound motor, locomotive he calls it; and there was a very good one exhibited at the Dusseldorf Exhibition lately that gave good results. It seems to be the aim of locomotive superintendents in all countries to produce a compound locomotive.

4605. Are you a mechanical engineer as well as a draftsman? I served five years in the workshop.

4606. Do you consider, as far as your experience goes, this compound motor is a success? I honestly do; but it is a new design, and it wants to be thoroughly ventilated.
4607. Is it not unusual for new machinery to require various alterations in its parts before it runs

smoothly? It is the exception for it to run smoothly at first.
4608. Have you ever seen a compound locomotive in any part of the world? No, this is the first I have

seen. There are but two or three in existence.
4609. Have you seen the drawings of any compound engines for traction purposes? Yes.

4610. Is Mr. Downe's motor a copy of any of these, or is it original, as far as your knowledge goes? As a whole this is purely an original design.

4611. Have you attended any trials or been connected with this combined motor in running through the I was out with it for about a week before it was put into service, finding out any streets in any way?

weak points in it requiring any small shop alterations—shop work not affecting the design.

4612. What was its running, as far as your own personal knowledge is concerned—what performances were done? For a new invention, a new design, a total departure from established practice, they have done their work exceedingly well, and they are now what engineers call well down to their bearings. 4613. Have you seen this model of the engine? Yes, it was made under my superintendence.

4614. Can you explain from that model the working of the valves and pistons? I could do it, but I would have to requote the figures I have just given.

4615. What do you consider is the saving of weight between the combined motor and car and the ordinary Baldwin motor with a car behind it? About 4 tons, standing on the rail.

4616. That is the difference in weight? Yes, the difference between the combined motor and car as it

stands, and the 11-inch Baldwin motor and car behind it.
4617. What is the carrying capacity of the respective cars—the combined car and the ordinary double-decker? The heaviest double-decker we have will carry ninety passengers, while the combined car has

sitting capacity for eighty. 4618. From your experience as an engineer, would you have any hesitation, if in Mr. Downe's or any similar responsible position, in recommending the general adoption of this car in substitution for the Baldwin motors? Considering their efficacy in every respect, the saving which a system conducted on the principle of this combined car must result in, taking into account the cost of turn-tables and everything else, the saving in wages and in stores of every description, I should say the sooner the whole system of tramways is carried out with combined cars the better it will be for the public in every respect.

4619. Would you take the responsibility of recommending it upon your back, if you were in the position of chief engineer of the Department? I should accept it without hesitation as to the result.

4620. Mr. Poole.] The result of your figures given to the Committee a short time ago gives a net saving of 30 per cent. of steam, in your opinion? Yes. 4621.

4621, If the Committee have been informed that there will be a net saving of 30 per cent. of fuel, I suppose that is about how it has been got at. There is a net saving, theoretically, of 30 per cent. in J. W. Cayzer. steam, and therefore a net saving of 30 per cent. in fuel? I believe the actual running sheet shows a 14 Oct., 1884.

larger percentage than I have given.
4622. Have you taken into consideration, in advocating the compound motors in place of the ordinary

Baldwin motor, all the terminal charges—all the necessity of putting in turn-tables, or circles, or triangles, as the case may be, at all the various outlying terminal points? Yes.

4623. Have you considered at all what it would be likely to cost the Government for ground to turn them on? At the majority of the termini the transvay lines are situated in such a manner that not much resumption will be required, and the cost of that resumption would be nothing in comparison to the item saved in wages.

4624. Have you made any estimate whatever of the cost of resumption at any of these points? I do not

profess to be a land valuer.

4625. This is a mere general opinion you have given to the Committee—not based on any estimate you have made? I am more competent to go into figures with regard to the engine than I am with regard to land.

4626. Taking the whole of these contingencies into serious consideration, you would advise that there should be a total change in the description of motor used? I am still of that opinion.

4627. I want to get at the cost to the Government of putting down turn-tables and resuming land? I can form a pretty fair idea.

4628. Will you give the Committee an idea what it will cost at some of these points? £600 at Randwick, for instance.

4629. Whereabouts? On the reserve opposite the Asylum.
4630. Take a case where you would have to resume land? I scarcely think you ought to ask me that question. I cannot form an estimate of the cost of land, but the saving would be considerable in stores and wages and in repairs and in compensation for accidents.
4631. You are a mechanical draftsman, and served your time in a locomotive shop? Not locomotive

general engineer's.

4632. Is it not a fact that, with these compounding engines with vertical machinery, the whole work is on to the dead axle, on the tramsom end—that there is no spring between them and the road? It is a fact that there is no spring on the driving axle, but when the engine was lifted I must honestly say I never saw bearings that had worn better.

4633. What would be the effect of continual concussion, owing to the inequality of the joints of the road, on that vertical machinery, in the course of five or six months? Little or no difference.

4634. It would throw no additional strain upon it? Not on the vertical engine, where the motion is vertical and at right angles to the road.

4635. You think that is a far better arrangement than horizontal machinery such as we have in ordinary locomotives? I do not say it is better, but it is no worse.

4636. You know that springs do act in easing off the concussion due to the road? Yes.

4637. And that is not the case in these compound motors? No.

4638. Mr. Wright.] There is a large amount of wear, is there not, under the journals and brasses of the ordinary Baldwin motors? Yes, on the side rods.

4639. I understand you that there is much less wear on the compound motors—the brasses last much longer? I confess I was agreeably surprised to find the way the non-adjustable ends of the side rods of this compound engine wore, but I attributed it to two things—one is that there is good bush metal used, good gun metal—Ajax metal I think it is termed—in the rods, and on each side-pin of the side cranks there is a circular steel bush or collar put on; these two work together and give a surface like gloss. But then, again, in this compound motor the whole is cased in, and if that system were carried out there would be a great saving in all the motors, because no dust could work in at all; there is not a score on the side cranks of these compound motors, whereas on the ordinary motors they are cut away and riddled as though they had been cut with a tool in a lathe.

4640. Could the ordinary motors be boxed in to prevent the working parts being exposed? Not without total reconstruction of the design, because the wheels would have to be inside the frames of the ordinary

Baldwin engines instead of outside, as they are at present.

4641. Do you consider the framing of the compound machinery, being vertical, is much more liable to go

to pieces than the horizontal framing? No. 4642. You are quite clear in your implicit belief in these compound motors? I am; and I say that if fair play is given to this principle there is a great future before it, and the Government of the country will never regret adopting it.

4643. Mr. Suttor.] Do I understand you to say that this is the first compound locomotive you have seen?

4644. And there are only two or three others in the world? Yes.
4645. One of Mr. Webb's that you spoke of? Yes, and the one at Dusseldorf.
4646. They have not adopted these compound engines in England yet? No, but such favourable results have been obtained with Mr. Webb's engine on the North-western line—it takes the mail-train—that I am sure it is only a matter of time to introduce them generally.

4647. For a new engine you think this compound motor of Mr. Downe's works well? You have been watching the running of this combined motor and car on the line? Yes, with great interest, but I am only interested in its success as being a new thing, and as an engineer I think it is a good thing.

4649. What does it usually run with—one or two cars attached? It generally has one light car, besides its own car, when the traffic is heavy; but when the traffic is in its normal state it runs by itself.

4650. By what test do you compare it with the Baldwin motor—the fuel consumed? The fuel consumed I have not entered into, but the saving in the capacity and the cut off of steam at various degrees of expansion.

4651. Yours is a theoretical comparison? It has been borne out practically. You can scarcely say it is

theoretical, because these figures could not err to a great extent.

4652. Has there been any practical test made with regard to the consumption of fuel? There has, but I would not care to state it. That I would leave to any witness in whose department it may be.

4653.

4653. You said there would be a saving in compensation for damages—in what way? There have been a J. W. Cayzer. number of persons knocked down in consequence of the drivers not having a good look-out ahead, but in this compound engine he is right in front and can see everything.

14 Oc., 1884. 4654. Is it not a fact that in this combined motor there is only one man on the engine? Yes.

4655. And he has to attend to the engine as well as to look out? An ordinary driver should be always looking out.

4656. On the other motors the drivers have a man to assist them, have they not? Yes.

4657. In one case the driver has to look out and drive his engine, in the other a man is told off to look out? There is no extra duty, because the construction of the front of the car admits of his doing the

duty with ease.
4658. Is there any communication between the motor and the carriage? The carriage rests on a tubular

plate on the motor, and in addition it is provided with a safety link attaching it to the motor.

4659. That is not what I mean. Could the conductor or any passenger get from the car to the motor while in motion. Is there any communication at all between the motor and the carriage? No; except No; except by the driver getting out on to the track and then going to the carriage.

4660. In the event of anything happening to the driver—if he were taken suddenly ill or dropped dead—what would be the result? The car could be stopped by an outsider; I have done the same thing myself. The engine was moving slowly down a decline at a coke-house and I stepped up and put the vacuum brake on through the window.

He could work his way along the 4661. How could an outsider get on if there is no communication? The same objection applies to the Baldwin motor, because an outsider would scarcely know To save a man's wages we must put up with a trifling inconvenience in view of a casualty what to do. which might not happen once in twenty years.

4662. If anything happened is there any way in which the engine can be stopped? Only by the conductor working his way on to it; he could do it just as well as in the ordinary motor.

4663. But there is a second man on the Baldwin motor? Yes.

4664. Mr. Poole.] You spoke of Webb's compound engine;—is that a vertical engine? No, horizontal.

4665. Do you know of any case, from your own observation or reading, of a vertical locomotive engine now in use—of course 'I know Stephenson's original engine "Rapid" was a vertical engine;—but do you know of any vertical locomotive engine in later days? Yes, Chaplin's contractor's engine.

4666. I am speaking of a locomotive used to draw passenger carriages? Yes; Perkins' high-pressure motor, that is working on one of the Continental lines; it has a pressure of 600 lbs. to the square inch, and its three cylinders are vertical; Mr. Charles Brown's tramway locomotive, on the Barcelona Tramways, an engine of Merryweather, and Kitson's combined engine and car that we have here...

4667. Is it a fact that the Department has put Kitson's combined engine and car on one side? Yes, as

being too small.
4668. That has a 9-inch cylinder? No, 7-inch.

Mr. George Downe called in and further examined:-

4669. Mr. Poole.] There were a number of four-wheeled passenger cars at one time were there not? Mr. G. Downe.

4670. How many? I do not exactly know how many. I should think about forty.

All of them.

14 Oct., 1884. 4671. Some of them were afterwards converted into four-wheeled or double bogic cars? Al 4672. Can you tell us why the conversion was necessary? There was no absolute necessity.

4673. Do you know what was about the cost of converting them;—were you asked to furnish a return as to the cost? The tenders were called for and the alterations made while I was away in America. If I remember rightly the cost was about £70 a car, but I am not sure.

4674. Were you asked to furnish any report to the Commissioner as to the cost of converting the cars after you returned to Sydney from America? Yes, I think so. after you returned to Sydney from America? 4675. Did you furnish it? Yes, I think so.

4676. And that report would show the actual cost? Yes.

4677. Did you find that while the cars had only four wheels under them the flanges of the wheels were worn very thin? No.

4678. Do you know what were the reasons that led to their being altered? There was a public cry got up that the cars were unsafe on four wheels, because if one wheel broke the car might topple over, and yielding to that cry the Commissioner ordered that they should be altered into bogies.

4679. But in your opinion that was unnecessary? I was of opinion that the car was perfectly safe as it.

4680. Was that car your design? It was.

4681. Referring to the combined motor, is it not the fact that when the driver is inside and the door shut he is completely boxed in? He is boxed in.

4682. And it would be very difficult for anyone to get at him while the car was in motion? Yes.

4683. And there is no means by which the conductor can get from the car portion into the cab occupied by the driver? He can get in by getting on the side that is boxed up from the passengers. There is a step-plate outside.

4684. But the conductor would have first to get upon the road? Yes.
4685. And if the car were in motion he would have to get down, run along, and get up again? Yes, if he wanted to get into the front at all.

4686. If he wanted to call the driver's attention to anything? He could whistle:

4687. But supposing that unfortunately anything should happen to the driver—that he should be seized with a fit or paralysis, or in any other way prevented from cutting off the steam;—have you ever considered

what would happen to the passengers in such an event? Yes, the conductor could put his brake on 4688. Would that be sufficient? It would check the speed sufficiently to enable any one to get into the front. But if we look at all the railway experience of the world such an accident is very rare, and the risk is worth running if any saving can be effected by it. Such a thing is scarcely known to have occurred. 4690. And there have never been any disastrous results? I never heard of any.

Mr.

G. Downe.

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Mr

H. B. Howe.

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4691. What is the name of you foreman carriage-builder at Randwick? Mr. Davis.

4692. I suppose he would be able to form a pretty good opinion as to the cost of converting the four-wheeled into eight-wheeled cars? He should be.

4693. He is a man of pretty considerable experience, is he not? Yes.
4694. A very reliable man? Yes, that is, as far as his work is concerned.
4695. Chairman.] Are you in favour of the double-deck cars? That is a question I would answer straight off in this way: I am not, if you ask my opinion candidly.
4696. Why? Because I think a tramway system should be assimilated to an omnibus system, and that the

passengers should not be centralized; but they are an absolute necessity where people are centralized.

4697. Have you found from experience that it costs more to keep the cars in repair—that the wear and tear is greater in the case of double-decked than in the case of single-decked cars? I do not think so from our experience.

4698. Who would be the best one among your officers to inform the Committee with regard to the relative cost of maintenance? We can furnish you with a return showing the relative cost for the past

4699. How long will it take to prepare? You can have it by Thursday, or Friday at any rate.

4700. Will you furnish the Committee then with a tabulated return showing the class of carriage, whether single or doubled decked, the weight, the cost, the carrying capacity, and the number of wheels?

4701. Mr. Poole.] In consequence of the interruption to the traffic arising from vehicles and persons crossing the tramway, it is often necessary for the drivers to put on their brakes very suddenly, is it not? Yes.

4702. Then in the case of the double-decked cars that as a matter of course would cause a tremendous strain upon the car frame owing to the great leverage? There will be a strain decidedly.

4703. Which would not be felt by a single-decked car? Of course when you have the weight in the air

you must have the leverage of that weight.
4704. Have you noticed lately that some of the double-decked cars that have been some time in use are beginning to oscillate considerably when the brake is put on? I have not, neither have I had my attention called to the fact.

4705. Will you be good enough to look at them occasionally and see for yourself whether such is the case? I generally do look at them and often ride on the top, where I could perceive the motion if there was any.

Mr. Henry Bryant Howe called in and further examined:—

4706. Mr. Poole.] You remember that there were a number of four-wheel cars in use? Yes.

4707. Are there any in use now? No.

4708. They were converted into double four-wheel bogies? Yes.
4709. How many were converted? About fifty or fifty-one.
4710. What was the cost of converting them? I think that the contract price was £70.
4711. What did that include? That included the shifting of the fixed bolster and making the bogie frame—less the wheels and boxes. The wheels which were in use before were utilized and the other whoels which were required had to be supported. wheels which were required had to be supplied.

4712. Then two axles, four wheels, and two bogie-frames had to be found? One bogie complete.
4713. Two sets of bogie-frames had to be made? Yes, that was included in the £70; we had to find the wheels and axle-boxes.

4714. Were all the old wheels, axles, and boxes used? I believe that they were.
4715. If any of them had been thrown out the Department would have had to supply new ones to a corresponding extent? Yes.
4716. Was the work let by contract? Hudson Brothers had the job; it was all arranged before I went

into the Department I think.

4717. Then the conversion of each car cost £70—the Department finding wheels, axles, and boxes? Yes,

4718. Do you know whether any of the flanges of the wheels were worn very thin while they were running under the four-wheeled cars? Nothing particular was brought under my notice at the time. I know that they wear very thin now, and they have to be taken out, although they are thick on the tread. The flanges at times wear faster than the tread.

4719. How do you account for that? I attribute it to running around sharp curves and to the cars always being run one way—without being turned from end to end.

4720. Do you know what were the causes which led to the conversion of the cars from four-wheeled to eight-wheeled cars? I am not in possession of the particulars. I believe that the alteration was ordered by Mr. Copeland. The work was started just after I went into the Department.

4721. I believe that you were at the Railway previous to going to Randwick? Yes.
4722. And you are well accustomed to locomotives and all that appertains to them? Yes.
4723. Have you noticed the manner in which the driver is boxed in, so to speak, in the cab of the combined motor? I have.

4724. If anything were to happen to him while the motor was under steam which would prevent him cutting off steam, would it not be a difficult thing for any other person to get into the cab to cut off steam? It would.

4725. A very difficult thing? It would be.
4726. From that point of view does it not appear to you to be a somewhat dangerous experiment to be running steam motors through the crowded streets of the city with only one man in contact with the engine? There are certain risks about it.

4727. Is it not probable, owing to the frame of the motor itself having to swing underneath the frame of the car around curves, that if the driver should unfortunately happen to step down at such a time, he might step between the two and get his legs broken? I do not think that he could get his legs down very well. The casing of the motor comes out beyond the sides of the car or quite level with them, and the motor would have to swing back quickly, or make an "S" curve within its own length to do what you describe describe.

4728. If anything happened to paralyse the driver it would be very difficult for the conductor to get into the cab to cut off steam? Yes, it would be.

Mr. 4729. Far more difficult that B. Howe. of a Baldwin motor? Yes. 4729. Far more difficult than it is to get from the foot-plate of an ordinary carriage on to the foot-plate

14 Oct., 1884. 4730. Do you recollect last Sunday week—the 5th instant? Yes.
4731. Did not one of the combined motors break down on that day? Yes; one of them broke down

coming from Coogee.
4732. What happened to her? The valve-gear was carried away. It appears that a nut came off which allowed a bolt to drop out, and this caused the lever to drop and double it up.

4733. The bolt dropped out and the valve-gear became disarranged? Yes; it might have been caused through the nut not being tightly screwed up. There was a rush to get the engine finished for the

Saturday afternoon; this might account for it.

4734. Are not the bolts and nuts and ordinary gearing of the combined motors—the machinery being vertical—more likely to get disarranged than they would be if the machinery were horizontal, owing to the continual heavy concussion on the road? They are apt to shake loose in any engine. On locomotive engines sometimes the bolts and nuts shake loose all over.

Mr. John Halliday called in and examined:-

4735. Chairman.] What is your position in the Tramway Department? I am traffic foreman at the J. Halliday. Bridge-street vard.

4736. How long have you held the position? I have been a traffic foreman for about three years, but I have not been at Bridge-street all the time; I used to be at Redfern; I have been at Bridge-street about nine months.

4737. Where were you employed before you became connected with the Tramway Department? I was in the employ of the Omnibus Company.

4738. Have you had much to do with the combined motors? Nothing more than seeing them come in

and go out of the yard.
4739. What do you find with regard to their power as compared with the ordinary motors;—are they more powerful? No; generally speaking the combined motor only draws the car which is attached to it; occasionally on the Redfern line the motor has to draw an extra car.

4740. Have you ever drawn more than one car with a combined motor on the Coogee line? Yes. 4741. What was the result? When the Sunday traffic has been more than one car could meet, another

car has been put on; but generally they have to be shoved up by another motor. For the last six or eight weeks no extra car has been attached to the combined motor on the Coogee line.

4742. Has there been any difficulty on the Coogee line with the Baldwin motor with two cars attached? Sometimes, when the cars have been overloaded. For instance, last Sunday the cars had to be shoved up by a smaller motor than the one in front; whether the motor was short of steam or not I cannot say.

4743. Generally speaking, what is the result? The middle-class engine draws up two cars heavily laden. The small engine came up on Sunday with what we call the black car* and pushed up the other laden cars without sticking.

4744. Is it a usual thing for the Baldwin motors to stick? No, unless the motor is out of repair.
4745. You find that the combined motor cannot draw two cars up the Coogee line? She does not draw

two now. She was tried with two a few weeks ago, but it was always a case of sticking-up when two cars were on.

4746. What has been your experience of the combined motor on the Redfern line? I have had nothing

to do with it on that line beyond seeing it come in and go out of the yard.

4747. Have you seen any of them refuse to take up the load? I have heard of them breaking down.

They always start away from Bridge-street all right.

4748. Is it usual to run an extra car with the combined motor? That depends on the Railway end. If a heavy train comes in, and there is not room for the passengers in one car, another is hooked on; this car is sent back to Redfern, in case it should be required again.

4749. Have you found in the case of the combined motors that they have ever refused to take two cars from the railway? I have not seen it; I am at this end, not at the Elizabeth-street end. 4750. Are you always at Bridge-street? Yes.

4751. Then you know nothing, except from hearsay, of what takes place at any of the outside stations? With the exception of Sunday, when we go to regulate the tráffic at Coogee.

4752. As far as the traffic is concerned then you speak from your own experience? Yes.
4753. How long is it since these combined motors and cars have been in use on the Redfern line? I can scarcely trust my memory to answer that question. In the first instance there were two motors running, but recently two more have been put on.

4754. If any engine broke down on the road would it be reported to the Traffic Department? Yes.
4755. And you have to make arrangements for another engine to take its place? Yes.
4756. Have any such occurrences been reported to you in connection with the combined motors running between Redfern and Bridge-street? They have broken down, and they have telegraphed down for another engine. A couple of engines are kept there for the purpose; that is to say, if an engine breaks down, one of them goes out and takes up the running.

4757. Has this happened often with the combined motors? It appears to happen often in connection with them for this reason, that when anything happens it is to the car as well as to the motor; if there is a breakage to the car for instance, both the car and motor have to be taken off in order that the repair may be made.

4758. But I am speaking solely with reference to the motors? They have sometimes broken down.

4759. How often? I could not well say. A few weeks ago there was something breaking in one of them; it broke several times during the week.

4760. And you had to get another engine to replace it? Yes.
4761. If anything goes wrong with the car both engine and car have to be put aside? Yes. I have just explained that.

4762. Is it part of your duty to keep an eye on the carriages as well as on the motors? No; there is a

^{*} Note (on revision):—I cut the motor off and pushed the Baldwin motor up the hill, then came back and drew the load, the black car and another small one, up the hill.

MrJ. Halliday.

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car fitter who does that work; it is no part of my duty. If a man examines the carriages and says that

such and such a car is not fit to run, we cut her off.

4763. It is a fact, is it not, that up to within the last week or two when there were only two combined motors kept on the road, it was necessary, in order to keep these two running, to use the whole of the five or six motors? I cannot say. Two were kept running up to last Monday week; four were then put on the road, and they have been running ever since.

4764. With the two motors running was the obstruction to traffic greater than with the other motors? There were only two of them, and there were about fifty of the others. More notice would be taken of them if they were to break down. A man comes in for instance and says "Jumbo's broken down again." If the least thing happens to one of them the men sing out about it.

4765. What officer is there in connection with the Traffic Department who looks after the traffic generally outside of Bridge-street? There is nobody.

4766. No travelling inspector? No.

4767. Is there any other officer at Bridge-street? Mr. Gangey relieves me.
4768. Your experience at Coogee is that whereas the ordinary motors will bring up two cars loaded, the combined motors will bring up only their own cars? That is my experience; but the combined motor always has a heavy load.

4769. And it would take two combined motors to bring up the number of passengers which an ordinary motor would bring up? No. The combined cars carry more than one of the small 60-passenger cars. 4770. How many will they carry? Ninety, I suppose; of course, they have more roof room than the shorter cars.

4771. What does the combined car carry when the passengers are all seated? I should think about seventy; I am not certain.

4772. There is not so much standing room on one of them as compared with one of the other cars, when filled with passengers? I never rode on the top of one of them; I could not say. Of course the combined car would carry a lot more than ninety if it were overloaded.

4773. How many? I cannot tell; it depends upon the rush.

4774. Would it carry twenty more people if it were crowded? More than that. 4775. Would it carry thirty more? About that number I daresay it would.

4776. That is to say that when very crowded it would carry about 120? About that number.
4777. How many will each of the 60-passenger cars carry when they are very crowded? About eighty apiece

4778. When the two cars are crowded then it is a question between 160 and 120 passengers? There would be more than a difference of forty passengers between them when they are crowded.

4779. What do you think the difference would be? There would be standing room on the steps of the

smaller cars, and it would be very difficult to count the number of passengers.

4780. But the difference in the sitting accommodation is seventy as compared with 120? Yes.

4781. Mr. Sutherland.] Is there not a great loss of time in using the turn-tables for these combined motors and cars? It takes 4 minutes from the time they come into the yard to get them back to the platform again.

4782. Only 4 minutes? It takes about that; it takes 4 minutes without a car; if it has a car it takes 6 minutes. The one car and motor going out of the yard have four pairs of points to go over. Then again, with the cars attached they have to come over two more. They have to run out into the street, and to come back on to the No. 5 road; they pick up the car and draw it out into the street, and then they back down again alongside the platform. This takes nearly 6 minutes.

4783. Is it not a fact that the street is often blocked as far as Hunter-street, owing to the time occupied in turning the tables? At 9 o'clock in the morning, when there is a great rush, it will not take 5 minutes to block the street as far as Hunter street, sometimes we get blocked when the combined motors

minutes to block the street as far as Hunter-street; sometimes we get blocked when the combined motors

are not there.

4784. Is it possible to make the block in the manner to which I refer when only the ordinary motors are running? It depends upon how the time-tables run.

4785. But is it possible to take up the same time with the ordinary motors as with the motors which have to be placed upon the turn-tables? No; it takes 6 or 7 minutes to shunt one of the combined motors; a Baldwin motor can be shunted in about 2 minutes.

4786. Mr. Poole.] Suppose the motors you had in use were all combined motors, could you shunt them and run the same number of trains as you run at the present time? No.
4787. Nor anything like the number? No; No. 6 road is taken up altogether by the combined motors.
4788. How many men does it take to turn them? It takes two to turn them and do the car-cleaning.
4789. If you had four more running it would take two men at Bridge-street to do nothing but turn the cars? Yes.

4790. Does it occasionally happen that the motors get over the end of the turn-tables? No. 4791. Has it not happened on several occasions? No, it happened once. The men who looked after the turn-table did not put a chock under the front wheels; you could scarcely say that the motor came off the end of the table.

4792. I suppose you have never asked yourself how many turn-tables you would want in Bridge-street if the engines were all combined motors? No, we never asked ourselves that. We could not manage them

in that yard; it is not big enough.

4793. You would want a much larger yard? We should.

4794. Under the most favourable circumstances it takes 4 minutes to turn round one combined car, and you can shunt an ordinary motor in from 1 to 2 minutes? If we are in a hurry we can do that.

4795. Mr. Wright.] You are speaking of shunting the Baldwin motors—and what do you call shunting the Baldwin motors? If a car comes in it has to be cut off, and the man breaks it down another road. If a combined car goes down No. 6 road he breaks it down No. 5 road; it catches up the car and goes on

to the platform.

4796. Do you say that it takes 6 or 7 minutes—supposing the yard is empty—to turn a car? To hook on the car, get on again, and get down to the platform, may only take 4 minutes if she goes on to

4797. I am speaking of the combined motor without any car? About 4 minutes, because generally the driver has something to do to his fire

4798. How long as a matter of fact do they take to come out of the yard after they have gone in? Some-J. Halliday. times they are quicker than at other times.

4799. How long is the ordinary Baldwin with its one or two cars before it goes out? It all depends

14 Oct., 1884. upon the time-table. 4800. What is the average time? It depends upon the line. If he comes in late and he wants to make

up time, we shunt him on the top road.

4801. Is it not on the average 15 minutes? No. 4802. Do they average 10 minutes in the yard? Some 10—some less; it all depends upon when they

4803. Do they average 10 minutes all round? No, I do not think they will.
4804. You have four combined motors running between the yard and Redfern Railway Station? Yes.
4805. Do they do the work as satisfactorily as the Baldwin cars? They have done. I have heard no complaint since the four have been running.

4806. They carry an additional car when the traffic demands it? Yes.

4807. Are there any complaints of their breaking down? I have not heard of any this last week or so. 4808. As far as you know they perform their work satisfactorily between Bridge-street and Redfern? Yes, they do.

4809. You said that you had seen the combined cars stuck up near Coogee with a full load? Yes, coming up the hill from Coogee.

4810. Do you know the gradient there? No.
4811. Have you seen the Baldwin motor require a push up there? No, not there.

4812. Is it not a common thing for them to want a push up when going out of Bridge-street yard? Yes.
4813. You say that the Baldwin motor occasionally breaks down? Yes.
4814. I will ask you to think over this question: Do the breaks down of the Baldwin cars equal in number

the average of those of the combined cars? There is more notice taken of the combined cars.

4815. If you had an equal number of each kind of cars running would the average number of the breaksdown of the Baldwin cars equal that of the combined cars? I cannot answer that question at all.

4816. Is there any feeling of dislike amongst the men towards the combined cars? I do not know. They are all singing out about the "Jumbo's;" they do not like them.
4817. Do you think that the employment of fewer hands in consequence of their use may have anything to do with it? They say that as there is no look-out man on the engine if it runs over anybody it will

cost the Government a lot of money.

4818. Have you heard it said that if the combined motors were used much labour would be done away with? No.

Mr. George Smith called in and examined :-

Mr. G. Smith 4819. Chairman.] What is your occupation? Traffic foreman at the railway station.

4820. How long have you been there? Two years.

14 Oct., 1884. 4821. Where were you employed before you entered the service? I was with my father.

4822. You had nothing to do with tramways? No.

4823. Have you noticed the compound motor running between the Railway and Bridge-street? Yes. 4824. Have you paid particular attention to the number of cars that they will take? Yes, they take

4825. Is it usual to take two? No, the drivers do not like to take two.
4826. Why? I think they are afraid they will get stuck up if they get a heavy load on. They do jump sometimes in Elizabeth-street.

4827. That is a car in addition to the combined car? Yes. They stop, but they can start again if they put on the compound pressure. The drivers do not like to take two cars.

4828. Do they make the same objection with regard to the Baldwin motors? Not if they are in proper

4829. They do not object to two cars being drawn by the Baldwin motors if they are in proper condition? If they are in proper repair.

4830. Mr. Poole.] What position were you in before you were made traffic foreman? Conductor.

4831. For how long? From the year 1880.

4832. I suppose that if you order a driver to take another car he has to take it? Yes.

4833. You regulate the traffic there? Yes.

4834. I suppose you do not know anything at all about firing engines? No, there is a spare fireman there. 4835. He is kept at the Redfern Station to fire the engines as they come in I suppose? Yes. 4836. The drivers do not do that? No.

4837. What coal they use you do not know? No, there is a cokeman there.
4838. He looks after that? Yes.
4839. You have heard drivers complain of the combined motors? Yes.
4840. They do not like them? They do not like to take an extra car.
4841. They do not object to the motor? I never heard them.

4842. They do not like an extra car because they might get stuck up? Yes.
4843. Mr. Sutherland.] What is the name of the man who is in charge of the coal at Redfern Station? Daniel Manning on the shift that I am on.

4844. How many coal-men or coke-men are there? There are two. 4845. Only two? Yes.

4846. What is the name of the other? I do not know the other one.

Mr. Thomas Midelton examined:-

Mr. T. Midelton.

4847. Mr. Wright.] When you were before the Committee you gave the following evidence:—
"1279. Mr. Poole.] You were present at the trial of the pattern dump-car, when the Minister for Works was there, were you not? Yes, sir, at Darling Harbour.

1280. Did you then express to the Minister a favourable opinion as to the adaptability of the dump-car to our traffic purposes? I do not remember having done so. I do not think I spoke to the Minister at all until often we left the trial and mont remember. Minister at all until after we left the trial and went round the goods-shed. I do not remember expressing myself in favour of the car to him.

1281. Did you advise the Minister to purchase the cars? Certainly not.

1282. You are quite clear on that point? Yes, I am quite clear. If he had asked my opinion as T. Midelton. to purchasing the cars, I should have said decidedly not to purchase them. How could I do other
14 Oct., 1884. wise in the face of a minute like that in the printed papers?

1283. You are quite sure that you never expressed a favourable opinion of the cars to the Minister, or advised him to purchase them? I am quite sure of that, sir."

4848. You gave that evidence? Yes. 4849. Since you gave that evidence did you write me a note requesting to be allowed to see me? I wrote to you referring to two men who wanted employment, and in the same note I asked permission to have a

private interview with you.
4850. You got a reply to that note from me? Yes, appointing an interview to take place at the Públic

Works Office.

4851. Will you tell the Committee what took place there? You appointed Monday, and I went into the Commissioner's room to see if he was in but he was not. Our appointment was for any time before 11 o'clock, and as it was getting towards a quarter or 20 minutes to 11 I thought I would show you that I had kept my promise. I therefore asked the messenger to announce me to the Minister, and to state the fact that I wanted the Commissioner to be present while I had the interview. I was shown into his noon, and the Minister asked what I wanted to see him for I resid it was in reference to a my ten into his room, and the Minister asked what I wanted to see him for. I said it was in reference to a matter connected with the dump-cars, and that I did not care to say anything unless the Commissioner was present. The Minister fell in with that view, and I left the room. I then went into the Commissioner's room and waited some time, and the messenger again called me to the Minister's room. I forget what was said but there was nothing said about any business that was going to take place, except that I thought it best for the Commissioner to be present. I went again and waited till the Commissioner came in. I told the Commissioner that I had written a letter in reply to one from the Minister about two men who were applying for promotion, and that I at the same time asked for an interview with the Minister because I had a weight on my mind which was caused by a question asked by Mr. Poole. I have felt uneasy ever since. I asked the Commissioner to come into the Minister's room to hear what I had to say, and the Minister rang the bell for the Commissioner to attend. Shortly after that I was summoned again, and I said as follows. I said that I felt very uneasy in my mind from the time that Mr. Poole on the said as considering the said as follows. said as follows: I said that I felt very uneasy in my mind from the time that Mr. Poole put a question to me in this room with respect to advising the Minister about the purchase of the dump-cars, and that I had worried myself considerably over it; that I was under the impression that the Minister thought that I had advised him to purchase the cars, and that I wanted to clear the matter up. I think that the Minister's reply to that was: "Mr. Midelton, if you told the truth and acted in a straightforward way, you have nothing to fear."

4852. Did you say at that time that something had occurred to you which had slipped your memory at the time when you were giving your evidence? Yes, I did.

4853. And that that something was in relation to the underframing of the dump-cars? To the bogies. And I said: "Mr. Midelton, I suppose you have acted like me, you have given truthful evidence; therefore you have nothing to fear?" Yes, that is what took place.

4854. You said in your evidence in chief that no conversation took place between us; but you do remember now that a conversation took place? Yes; I have stated that in my evidence since, after I was reminded. From the time that Mr. Poole asked his question I have reflected on the matter. I remember saying something about the bogies.

4855. Do you remember what you said about the bogies? I said something in favour of the frames and

springs—nothing else.
4856. Do you remember on that occasion speaking to me in the strongest terms of admiration of the lightness and utility of it as against the bogie that stood under the G truck? I do not remember expressing myself to you to that effect, but I brought the G bogie for the purpose of showing the difference between the dump-car and the G waggon manufactured in the Colony. I had it loaded expressly so as to give the Commissioner an opportunity of seeing and comparing the two cars together.
4857. You do not remember recommending me to purchase the dump-cars? I am certain that I never

did that.

4858. Do you remember recommending me to secure the bogie? No, I could not recommend the bogie

being taken without the cars.

4859. Then, if any one in this Committee has sworn that you made the recommendation, I presume that they have sworn what is false? How could that be; I do not think I spoke to you directly but to the Commissioner, and you probably heard what I said to him.* I was not engineer at that time, I was

4860. Mr. Scott had not then resumed his duties? Yes, he had resumed his duties. I was requested to attend, but Mr. Scott remained in his office. I do not want to be put in a position to show that any man has

perjured himself.

4861. You were sent there by Mr. Scott? No, I had instructions from the Commissioner by writing or telephone, to be present at the trial at Darling Harbour, and I went there with the intention of seeing as much as I could.

WEDNESDAY, 15 OCTOBER, 1884.

Present:-

Mr. CHAPMAN, Mr. POOLE,

MR. SUTHERLAND, Mr. SUTTOR,

MR. TEECE.

SYDNEY SMITH, Esq., IN THE CHAIR.

Mr. Thomas Midelton called in and further examined:-

4862. Mr. Poole.] You stated in your evidence yesterday that you called the Commissioner's attention to the design of the bogic under the dump-car, and pointed out to him how much lighter and how much more T. Midelton. suitable it was than the bogic under our G truck? I directed Mr. Bourn to bring a G waggon down to Darling Darling

*Note (on revision):—I should be sorry to be put in the position of having to show that any one had stated anything false.

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Darling Harbour when the dump-car was shown, when the Minister and the Commissioner were present. My object in doing that was to show the advantages of the lightness of the dump-car bogie, and other portions of the car, compared with the G waggon designed in our own Department. I am sure I spoke to the Commissioner about it, but I cannot remember whether I spoke to the Minister direct, but he might have heard what I said to the Commissioner. I remember saying something in favour of the bogie. I admire the bogie, and I admire other structural parts of the dump-car, and give it credit where I can, but as a whole, as far as the utility of the thing to the Department, I condemn it most emphatically, the same as I did at first. It is a light car I know, and there is credit due to the man who designed it, but as to the dumping arrangement, and its utility in traffic as a car to supersede all others, I do not see anything in it. 4863. Were you asked to give any opinion on the matters you have just alluded to at the time? No. I looked upon it as a show day. I was invited to attend, and I was holding the position of Locomotive Overseer at the time. I had no business to be there; it was Mr. Scott's business to be there, not mine. I looked upon it as an experimental thing, and in the same light as if I had been invited to dinner, and I was not going to find fault with the cooking or what was put before me. I said as much as I could to favour it, but where there was anything to say against it I left that out.
4864. I think in your evidence in chief you say you saw certain things about the dump-car which in your opinion were defective? Yes, I think I said that; I do see defects in it. 4865. As you thought it well to point out what you believed to be good about the dump-car, without being asked, at the time of the official inspection, will you explain why you did not at the same time call the attention of the Commissioner or the Minister to what you considered defects in it? I have just given the reason—because the people had invited me there; but I had already done it officially in this minute in the printed papers, written in April, 1883. In that minute I had done my duty as Locomotive Engineer.

The date is not shown here, but it is in reply to minutes of the Commissioner and the Traffic Manager. 4866. I find the original of your minute among the manuscript papers;—is the date that appears upon it (which is omitted in the papers as printed) the correct date for that minute? Yes, that is the correct

date; it is the same minute as printed here.

4867. In that minute you considered you had dealt generally with the question? I had discharged my duty as Locomotive Engineer, and I should have considered it pressing the matter if I had gone any further.

4868. Are you certain that you have been told nothing about the evidence given by the Minister before

this Committee? Yes, of course I am. 4869. By the plans which accompanied Mr. Huntley's letter of the 3rd October, offering to treat with the Commissioner for Railways for the right to use the system of coaling therein referred to, it is stated to be Midelton and Huntley's combined scheme;—are you the Mr. Midelton referred to? I am. 4870. Is Mr. Huntley your partner in this matter? No. I will explain the matter. In passing in the

train to and from his house at Petersham, Mr. Huntley saw the scheme I had partly introduced at Redfern on the coal-stage, and he called upon me several times and asked me to allow him to patent the scheme and allow my name to be used. I said yes, he could do as he liked; but I have had no profit out of it. Mr. Huntley has paid for the patenting of it, but there is no partnership whatever. Mr. Cowdery has done the same thing with his couplers, and I have followed his example. The Government has the benefit.

I have derived no benefit from it whatever, nor do I intend to claim any 4871. Is it your intention to make a claim against the Department for the right to use this scheme? No; I have already stated that I do not intend to do anything of the kind.

4872. Can you control Mr. Huntley's right to make a claim? No; Mr. Huntley, I am sure, would not do anything of the kind unless it was justifiable, or unless the Government feel disposed to compensate

4873. Are you associated with him in any other matter? No; I am not associated with him even in that. 4874. Chairman.] In the evidence, as printed, at page 55, question 1502, Mr. Cowdery is asked by the Minister for Works, "Would you consider that any officer present who saw anything that was decidedly deficient would fail in his duty unless he called my attention to it?" and his answer is, "Certainly. I know Mr. Midelton, in speaking of the dump-car—of the under-carriage particularly—drew attention to the style of it and pointed out how simple and good it was and that it was all that was necessary for a the style of it, and pointed out how simple and good it was, and that it was all that was necessary for a car of that description for carrying goods." Do you desire to make any explanation with regard to that? Any officer of the Department would naturally call attention to anything defective or dangerous, but I had already done that in my first minute of 17 April, 1883, as I have said before; and if I had done it again on that particular occasion I should have been offensive; I consider I should have been forcing my views on the Minister.

views on the Minister.

4875. Mr. Poole.] You consider you would have been doing something extra-official? Yes, and I would have run the risk of being checked; in fact I have been checked for doing my duty in that particular respect. I will tell you an instance: I had considered it my duty, when acting Locomotive Engineer, to give the Government the best of my experience. In the usual professional and gentlemanly way I called attention to the Eveleigh works particularly. The design of the Eveleigh works made by Mr. Cowdery himself in 1881 was entirely put on one side, and mine has been adopted. A second design, which was made by Mr. Cowdery from my design, has been put on one side also, and mine has been partly adopted; and I then so far got myself into such bad odour and unfriendly terms with the other officers that I have thought it prudent to leave off expressing my views. In fact the willing horse has been worked to death.

4876. In point of fact you have found it expedient not to volunteer advice? Yes, especially since I have gone back to the position of Locomotive Overseer. I had my own duties as Locomotive Overseer, the duties of Locomotive Engineer, and extra duties as Locomotive Superintendent for the tramways, all at the same time; I can show a good two and a half years work to anybody who cares to go into it; and I the same time; I can show a good two and a half years work to anybody who cares to go into it; and I think I ought to have an opportunity of defending my actions during my tenure of office.

4877. Can you tell the Committee the date on which you went back to your former position as Locomotive These printed papers show that Mr. Scott resumed office about the latter end of June.

believe the records will show that it was the 19th of June, 1883.

4878. Do you know the date of the test of the dump-car with billet-wood? I do not, but it was subsequent to Mr. Scott's resumption of office.

4879. Whatever may be the date to a day or two, you are quite clear that Mr. Scott had resumed his position as Locomotive Engineer prior to the test being made with the dump-car, when you were present, at Darling Harbour? Most certainly; I have no doubt of it whatever; and I well remember the unpleasant position I was placed in being there without Mr. Scott; I had no business there, and I did not want

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want to go. Will you allow me to make an explanation. In these printed papers about the dump-cars, it is stated over Mr. Scott's signature of the 10/3/84, "I may also mention that the dump-cars would be specially suitable for dumping the coal on to the platform." Previous to that, on the 29/9/83, Mr. Scott made a similar recommendation; and that must have taken place with the full knowledge of my scheme being approved. Mr. Scott must have known being approved. Mr. Scott must have known being approved. being approved. Mr. Scott must have known, having seen the papers, that my scheme of coaling engines was approved, and that the Commissioner directed it to be carried out; and it seems to me rather queer that the recommendation should go for the dump-cars on the 29/9/83. There was a sketch with the papers showing the Eskbank arrangement. These are two occasions where the dump-cars have been recommended by Mr. Scott, and judging from the Minister's questions yesterday, it appears to me he thinks that I am the one that recommended them. I most emphatically deny that—I never recommended the car to any one.

4880. Chairman.] Is it true that you are now busy preparing roads, &c., for coaling arrangements at Goulburn? I am not preparing the roads, but roads have been laid in to my design by Mr. Cowdery, and the running shed for thirty engines has been designed by me, and is being erected under my superintendence, with the Commissioner's sanction and the Minister's sanction also. As I pointed out a minute ago, I advanced my views in my official position for the benefit of the Department, and I have a minute ago, I satisfy the stiels to those views if I consider I am nor position in the benefit of the Department, and I have a right to stick to those views if I consider I am perfectly right; and if anybody has anything better to advance I am willing to give way; but if they have not anything better to advance I will not give way. I have recommended certain arrangements at Goulburn, and I am quite willing to wait for successful results of what I have proposed. The Commissioner has approved of my scheme throughout, and wrote

very handsomely and complimentarily in support of my views.

4881 Mr. Poole.] In your opinion the Commissioner has thoroughly endorsed your views? He has most decidedly, from the beginning to the present time, but Mr. Cowdery is opposing me; he may think

with all reason, but I believe I have proved my case to be correct.

4882. The fact is that Mr. Cowdery does not approve of your system of coaling? There is no doubt about that, but he fails to show anything better. I might add that the contract price is considerably below Mr. Cowdery's estimate for my work.

4883. That is to say, the contract price for carrying out your views at Goulburn is considerably less than

what Mr. Cowdery estimated the work would be done for? Yes. 4884. Chairman.] How much less? I do not remember the figures exactly, but I think it was £13,000 against £23,000; but my contract price is £9,000. The shed is being built for £9,000 odd.

4885. Do you know of any cars that have been imported other than those included in the return furnished to this Committee; -are there any imported cars, now in the possession of the Railway Department, not included in the return of rolling stock already placed before the Committee by you: if there are, we desire you to place them before the Committee as an appendix to your evidence, in a similar return to that you have already given, with the cost and all other necessary explanation? I included in the return all the stock in our possession at present, except two Pullman cars recently imported, known as the Lady Parkes and Lady Robertson. I thought they were too recently in the service to be included, but if you wish to have them. I will give the same data for them if I can obtain it. They are two sleeping cars, Nos. 8 and 9. There are also two refrigerator cars lying at Eveleigh, one English and one American, and there was a car in use when I came to the country in 1880, an American box car, the body of which is now used as a workshop.

4886. In the return you will furnish the Committee with, will you be able to include any costs for alterations in these two special Pullman cars, Nos. 8 and 9? I would prefer your asking Mr. Scott for

4887. Mr. Poole.] I want you now to leave the subject of dump-cars and go to the combined and compound motors and cars. You have had considerable experience as a locomotive engineer? I have—I have done nothing else all my life.

4888. Have you examined the compound and combined motor and car now running on our tramways?

Yes, I have examined it casually since I got intimation yesterday.
4889. You have seen the general design? Yes.
4890. You know whether the machinery is vertical or horizontal, or at an angle of 45°? Yes.

4891. You have noticed the construction of the boiler?

And the general arrangement of the machinery throughout?

4893. Looking at the general arrangement of the boiler, do you think it is such that it would be economial the generation of steam? No.

4894. Will you explain why you think it is not economical for the generation of steam? I should say that a boiler like that would take water up with the steam. The steam generated from those tubes must necessarily escape somewhere. I should say the steam generated from these tubes would have a tendency to bring water up with it into the dome steam-pipe. I should not design a boiler like that myself. 4895. In general use do you think there would be a great danger of priming? I should think a boiler like that would prime.

4896. And it would not at all surprise you if you heard that in practice this boiler did prime? It would not.

4897. There ought to be a constant circulation of water all through the boiler? It is better if you can

4898. Will not the particular construction of this boiler cause considerable strain and wear upon the angle at the junction of the vertical and horizontal parts of the boiler? I should say there would be a great motion of water there. I should prefer making the boiler barrel a little bigger—more like a locomotive.

4899. Do you consider that, owing to the peculiar construction of the machinery and the piston valves it would be highly necessary, in order to obtain anything like the theoretical advantage claimed for the compound engine, that it should have dry steam? That is the essence of it—dry, hot steam, as hot as ever it can be kept.

4900. Dry steam at high pressure? Yes, and it must be kept hot, otherwise it is nowhere.
4901. Setting aside the theoretical advantages that may be claimed by using steam twice over, do you think that with this arrangement of the boiler and peculiar arrangement of the machinery any real advantage can be obtained by compounding? No, I do not see it.

4902. If that is so, could there possibly be any economy in the use of fuel? I should very much doubt that that would show economy in fuel.

Mr. T. Midelton.

15 Oct., 1884. Have you ever known in all your experience any successful experiment with vertical recommendation of the first.

4903. Have you ever known in all your experience any successful experiment with vertical regimes? No; in all cases they have been abandoned. It was the first idea—about the first.

4904. Was not Stephenson's original engine vertical—the "Rocket," now laid up in Kensington Museum? Not the "Rocket," but the original engine, which stands on a pedestal at Darlington station at this moment, has vertical cylinders, but they are I think placed inside the boilers and kept hot.

4905. Will you explain to the Committee the main reasons, in your opinion, why locomotive engineers

place their machinery in a horizontal position, or in a position nearly approaching the horizontal, in preference to a vertical one? To the true mechanic there is every reason for putting it horizontal, and every reason for not putting it vertical. You do not want me to go into details.

4906. I presume your answer may be taken to mean this: that horizontal machinery, other things being equal, works much more economically in locomotives than vertical machinery? Yes, with vertical

machinery it is almost impossible to get springs—elasticity—between the machinery and the road.

4907. The main connecting rod, working on to the crank-pin, gives a rigidness throughout the whole of the machinery in this case, which is obviated by horizontal machinery? Yes, by means of bearing

4908. And that has been found necessary, I presume, in order to relieve the engine from the effect of the constant concussion on the road, owing to the slight irregularities of the road? Yes.
4909. With vertical machinery it is impossible to avoid this constant concussion? Yes, I think it is.

4910. At any rate, with the machinery now in use on the combined motors it is not obviated? No, the machinery is solid right on to the road.

4911. Is it not a principle in locomotive mechanics that the action of the wheel on the road is precisely the same as that of a ram falling from a given height? Yes, a rail joint; it is just the same as striking it with a hammer.

4912. Then, from your experience, both as Locomotive Tramway Superintendent and also as Superintendent of locomotive rolling stock on the railways, do you not think that it is far more difficult to use vertical machinery upon a tram road with anything like reasonable success, owing to the difficulty of keeping what railway men term a good tip on the road, than it would be to use vertical machinery on the ordinary roadway? Yes, it is more difficult too keep the engine in repair, and more difficult to keep the road in repair.

4913. Taking a general view of the whole of this matter—the road, the cost of maintenance, combined with first cost—do you consider that it is possible for this kind of machinery, illustrated on this plan and also in the working model, to compete successfully with the description of motors known as the ordinary Baldwin motors? I should back the Baldwin motors for economy in every way against that, for both wear of the road and itself.

4914. Previous to the Government of this country authorizing the construction of these combined motors, were you asked to give an opinion upon the matter, by the Commissioner or any other of your superior officers? I was.

4915. Did you give an opinion? I did. 4916. Verbally or in writing? I think I gave it verbally—I cannot say whether I gave it verbally or in

writing.
4917. Will your memory enable you to state to the Committee the substance of that opinion? The substance of my opinion on that matter was the same as my opinion on the dump-cars. I wanted to know what advantages were to be gained by its introduction; and after examination of the design my opinion was that I failed to see the advantages claimed for it. Substantially I take that to mean that my opinion was opposed to it. I might add, too, that I reluctantly gave my opinion. I was asked by the Commissioner to give it, and I said that as a matter of etiquette I did not care to do it; I did not want to give an opinion on a brother officer's design, but I could not get out of it. 4918. The Commissioner pressed you for an opinion? Yes.

4918. The Commissioner pressed you for an opinion?

4919. And you gave that opinion? Yes.

4920. And that opinion, in short, was unfavourable to the compound motor and car? It was unfavourable. 4921. Then it is hardly worth while for me to put the next question; but under no circumstances could you feel justified in recommending the expenditure of large sums of money in the purchase of this particular description of locomotive stock? No. If he asks me again I shall say the same as I did on the first occasion. I do not yet see any advantage in it. If he asks me that again I shall say precisely the same as I am doing to you now. I am quite willing to discuss the question with any engineer who supports that view, but unless he can show me that two and two make four I cannot give way.

4922. It amounts to this: That your lengthened experience of locomotive machinery generally compels you reluctantly to give an opinion adverse to the use of this particular description of locomotive? Exactly so. 4923. Do you know, from your English experience, of any instances where locomotives are driven through the streets of a large city with only one person in charge? No, I do not.

4924. Independently of the merely economic aspect of the question, do you not think the Government are running an unnecessary risk in permitting steam locomotive machinery of any kind to be run through our streets with only one person in charge, on the ground of safety to the general public? There can be no question of the extra safety with two men. That is the only answer I can give. I place myself in a very curious position by answering such a question as that. For my own part I should certainly prefer two men to one: If two men are necessary on a locomotive running on a fenced railway, they are certainly preserved to a street realway without a fence.

certainly necessary on a street railway without a fence.

4925. But independently of that view of the question, is there not a considerable amount of danger and unnecessary risk run by the Government to the travelling public through having only one person in charge; suppose that person should become even temporarily disabled or unable to cut off the steam? Yes, no doubt there is that danger with only one man.

4926. Take an extreme case: If anything should temporarily paralyse both driver and fireman on one of the ordinary Baidwin motors, is it not a comparatively easy thing for the guard or any person from the street to get on to the foot-plate and shut off the steam, as compared with the difficulty of getting into the cab of this combined motor? Yes, the entrance is easier on the Baldwin motor than on this combined motor. What you speak of I think took place on one occasion with an engine that was allowed to run out of Pitt-street yard without any one on it; one of the firemen ran after it and stopped it. I think this combined car is slightly more complicated, and it would not be so easy to find the handle as with the

4927. Is not the engine boxed in all round in the combined motor? Yes, I think it is.

4928. Suppose, to take another view of this matter,—because it appears to me it is one that concerns the general public very much—suppose the conductor was aware that something was wrong owing to the engine not pulling up at the usual stopping place, would he have sufficient power by putting on the handbrake on the passenger-car to pull up the engine? Yes, on a fair bit of road he might hold the car but on an incline it is questionable if he could do so. It would depend, of course, upon circumstances.

4929. Did you notice the car attached to the motor? Yes, I did this morning and yesterday afternoon.

T. Mideltons

4930. Did you notice whether there was any deflection in the floor-line of the car? Yes, there is a deflection just where the truss rods end between the motor and the car.

4931. Is the deflection caused by bad workmanship or is it in your opinion inseparable from the design? You cannot blame the work.

4932. Then it is inseparable from the design? Yes.
4933. Is the deflection permanent? It is slightly but not so much as when leaded.
4934. Is that deflection likely to increase with the wear of the car? Yes, if it is not attended to. To my surprise I found that the sole-bar in one of the cars is going; it was fractured in the car I looked at this morning

4935. Has it gone right through? No, but it shewed a crack on the bottom edge where the tension is. 4936. The tension having been too great for it? Yes. 4937. Did you notice the number of that car? I think it was 103, but I am not certain.

4937. Did you notice the number of that car? I think it was 103, but 1 am not certain.
4938. I suppose, beyond taking this general look at the car and engine this morning, you have not paid any particular attention to the working of the motor and car? No, I have never paid the slightest attention to it.
4939. I have here a volume of Engineering, No. 29, of date 16 January, 1880. Here is a cut of a locomotive. Will you be good enough to look at that; you see the arrangement of the boiler? Yes.
4940. And the general arrangements throughout? Yes.
4941. Will you be good enough to look upon this section here—"Compound Motor or Steam Tramcar, Original Design," with the dates 12th February, 1883, and 3rd March, 1883. Having looked at the cut I have now drawn your attention to and at this sketch, will you tell the Committee if, in your opinion, there is any general resemblance between the cut in this volume and the design now before you? They are

is any general resemblance between the cut in this volume and the design now before you? They are

uncommonly alike—as near as can be.

4942. You think they are alike? No doubt about it, they are alike.

4943. Well, then, that being so; it is very hard for us, knowing that all these scientific works are generally read by engineers of every class-is it not a very hard thing for this Committee to come to the conclusion that this is a new and original design? Has that been stated, that it is a new and original design?

4944. Never mind whether it has been stated or not. Would it not be very hard to conclude that this is

a new and original design? I should not accept it as a new design or original, because I saw that when it was published in 1880.

4945. If anyone claims that this is a new and original design, under date March, 1883, in view of the cut there published in a scientific work in January, 1880, that statement would have to be received with a very great deal of caution? Yes.

4946. A statement made by anyone claiming this to be an original design? Yes, quite so. 4947. Mr. Suttor.] I understood you to say just now that you were asked by the Commissioner, when this design was submitted, to give an opinion upon it? Yes, 4948. Were you then told the design was original?

No. The design was lying on the Commissioner's table, and he asked me to give an opinion on it. He told me it was Mr. Downe's design, and I then said I did not want to give an opinion on it; but, as I have said before, I ultimately gave an opinion reluc-

4949. Do you recognize the sketch Mr. Poole has shown you as the same that was before the Commissioner? Yes.

4950. Did it then strike you that the design in *Engineering* was similar to it? Yes, of course. I remembered this, and another similar to it, being published in that paper or the *Engineer* previous to seeing this.

4951. You recognized what was said to be Mr. Downe's design as being similar to one of these? Yes. The valve-gear is Joy's patent gear; that is a separate matter altogether.

4952. In giving your opinion to the Commissioner did you give your objections in detail? No, I do not

think I did; I did not think it was necessary. 4953. You simply said generally that you did not think it was a good design? I said I did not see what the advantages were. If Mr. Downe can show me its advantages I will give it my support. I said so

the advantages were. to Mr. Downe himself.

4954. With regard to the car you inspected this morning;—is the sole-bar, which you say was cracked, a very material part of the car? It is the principal part. Here is the drawing of it. (Witness explained) by reference to sketch.)

4955. You say that is an important and material place? Yes. It will want looking to soon, if not to-

4956. Did you see how far the fracture had extended? I could not get my head low enough down to see

4957. Are we to conclude that the running of this car is not safe, in your opinion? It will certainly go if it is not strengthened. I would not like to say it is unsafe, because that is a word which is startling. I do not want to say that.

4958. I think you ought to say it, if you think yourself justified in doing so, out of consideration for the travelling public? I have stated the fact.

4959. Mr. Poole.] In your opinion, the car at the position you have indicated shows such signs of weakness that it is necessary for it to be constantly inspected? It wants constant inspection, or extra support.

4960. Mr. Suttor.] In making your calculation of the amount of fuel consumed by the motor or engine, would you have to take into consideration the amount of load carried by the engine? Certainly the test would you have to take into consideration the amount of load carried by the engine? Certainly, the test of consumption of coal is value received;—what is done with it. If you burn a pound of coal you want as much theoretical and practical duty out of that pound of coal as you can get; and the question resolves itself into work done in any engine, whether compound motor, or locomotive, or any other engine. For every pound of coal burnt you should develop so much power. Now the question is whether that engine is developing the power that ought to be got from the coal consumed by it. I cannot answer that question because I have no data. You want to know the actual conditions of each test, or otherwise you can prove nothing.

T. Midelton.

4961. Mr. Poole. You want to reduce the whole thing to foot-pounds? Yes.

4962. I think you mentioned Mr. Webb's compound engine. You are aware that Mr. Webb is running his compound engine on the London and North-western line? Yes.

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4963. How long has that been running? It has been in hand about two years. The London and Northwestern is a very level line, and therefore suitable for such an engine, which would run upon it under very favourable conditions.

4964. You have watched the history of that particular locomotive? Yes, very closely.
4965. Has it given satisfaction? It has not, in my opinion. Mr. Webb thinks he is getting great results, but every other engineer proves that he is not; for instance, Mr. Stroudley, on the Brighton line, and Mr.

Stirling, on the Great Northern Railway.

4966. How have they proved that it is not working well in England? For economy.

4967. Have they run it on their lines? Yes, Mr. Webb has put his engine on other Companies' lines, with his own man and his own coal, and has failed. I do not see how it could be otherwise.

4968. Mr. Suttor.] Can you give the Committee any expression of opinion by any authority in England, upon the working of Mr. Webb's compound locomotive? Yes, The Engineer, of 26th October, 1883, speaking of Mr. Stroudley's new express engine on the Brighton line, says, "If the performance of this engine be compared with that of the compound locomotive of Mr. Webb, it will be found that the advantage claimed for the latter does not come out very prominently."

4969. Although this engine of Mr. Webb's has been running for two years, and has been thoroughly tested, so far as you are aware no other engine of the same pattern has been made? No; and I do not think he will make any more himself.

think he will make any more himself.

4970. In your opinion this compound principle is not a success? That is a fact; it is not a success. The essence of compounding is keeping the steam and cylinders hot, using very high pressure steam, and condensing the steam after you have done with it.

Mr. William Scott called in and further examined:

Mr. W. Scott. 4971. Mr. Poole.] I believe you received a summons from the Committee to appear here this morning; in that summons was the nature of the subject you would be questioned upon stated?

15 Oct., 1884. 4972. What was the subject mentioned? Mr. Downe's motor.

4973. The compound and combined motor and car? Yes.

4974. Did you examine the motor and car? Yes, I looked at it externally.

4974. Did you examine the motor and car? I es, I looked at it externally.
4975. Did you examine it sufficiently to enable you to give the Committee an opinion as to its merits or demerits, compared with any other description of locomotive engine? To a certain extent.
4976. Did you examine the construction of the boiler? Yes.
4977. You recognize that sketch (on the table) as an outline of the design of the boiler? Yes, I believe

that is correct.

4978. Do you notice the high-water line shown there? Yes.

4979. That is some considerable distance up the vertical boiler, above the level of the top skin of the horizontal boiler, is it not? Yes.

4980. You have had considerable experience of locomotive boilers and machinery? Yes.

4981. Is the arrangement shown upon this drawing, in your opinion, an economical one for the generation of steam. I want to call your attention to the high-water line, and that the water in the vertical boiler fills the whole space between the top and bottom skin. Do you think that is an economical arrangement for the generation of steam? I should prefer a larger barrel.

4982. Would you not prefer a barrel with a clear steam space between the top of the tube and the top skin of the boiler? I think I would prefer it.

4983. You have noticed the arrangement of the machinery—the pistons and cylinders? Yes.

4984. Is that (referring to model in the room) a working model of them? I have not seen them dissected. 4985. That is something like them? I believe it is, as far as I can judge.

4986. It is part of the principle of this machine that the steam should be used twice over? Yes.

4987. Is it not very essential where steam is used twice over that the steam should be exceedingly dry

4988. Do you consider that (referring to sketch) a good steam space to leave between the high-water mark and the top of the steam chest? Yes, if you have sufficient heating space to generate steam.

4989. Without going into the matter closely, you would not be able to give the Committee any decisive opinion as to whether there is sufficient steam space or not? No, I should like to go into the matter. 4990. At the first glance you could not tell the Committee? No.

4990. At the first glance you could not tell the Committee?

4991. Provided you have sufficient heating space, you think that steam space is sufficient? Yes, the dome space is sufficient.
4992. You see the arrangement of the machinery here is vertical? Yes.

4993. In your experience, do you know of any example where vertical locomotive machinery is in use? In Wilkinson's locomotive the cylinder is vertical.

4994. And the valve and connecting rods vertical? Yes.

4995. Where is that used? In England and on the Continent I think there are some being built; I find since that Messrs. Beyer, Peacock, & Co. have manufactured some for use in Lancashire, North

Staffordshire, and Java, and have erected special shops for manufacturing them.

4996. Can you tell us in what way they are being used? I could not just at present.

4997. Do you think, from your knowledge of machinery generally, especially locomotive machinery, that vertical machinery will work as economically as horizontal machinery? I should prefer it horizontal, but

with the present arrangement for compounding, I do not see that it could be applied.
4998. Irrespective of compounding, you would prefer horizontal to vertical machinery? Yes.
4999. Will you explain to the Committee why? In the first place, being vertical, the blow down is direct into the road.

4500. The concussion? The concussion.

4501. And back from the rail on to the engine? Yes.

4502. I think you wish the Committee to understand that where there are inequalities at the jointing of the rails the whole force of the blow would be thrown back upon the working parts of the engine? Yes.

5003. Would not that necessarily tend to throw the machinery out of adjustment? It would tend to Mr. W. Scott. give it considerable concussion and strain? Yes.

5004. Does it not follow, as almost a matter of course, in fact as an absolute certainty, that the cost of 15 Oct., 1884. maintenance will necessarily be greater with vertical machinery than with horizontal machinery? believe it would.

5005. As to the compounding or using the steam twice over, do you see any practical advantage to be gained by these short-stroke engines without condensers in using the steam twice over? I cannot see where the advantage is.

5006. Then, in the first place, your long experience leads you to the opinion that there is no economical advantage to be obtained by using the steam twice over with these short-stroke locomotive engines? No, I do not think there is.

5007. Secondly, that it follows that the maintenance cost for vertical machinery, whether it compounds or not, other things being equal, must necessarily be greater than for horizontal machinery?

5008. Was your opinion ever asked with respect to the value of this design before it was approved of by

the Commissioner for Railways? No; I was not in the Colony.

5009. Had you been asked to give an opinion, with the whole weight of your responsibility due to your position, could you have advised the Commissioner to order one or more of these machines? It requires some consideration.

5010. I am speaking on economical grounds? On my own responsibility, I do not think I should.
5011. Have you ever seen a similar design to this anywhere? Not quite the same.
5012. But in its general outlines? I have seen a design similar to that, in the boiler especially, in some of the engineering works.

5013. I would ask you to look at this volume of Engineering, the 29th volume, under date 16 January 1880. Here is a cut at page 46, to which I call your attention—a cut showing a vertical locomotive. Will you be good enough to tell the Committee if you see any general resemblance between that cut and the design here on the table, now before the Committee? The boiler is similar, but I see no outline of the engine.

5014. The boiler is similar? Something similar.
5015. The outline of the boiler is similar to that shown on this sketch? Yes.

5016. Was there not a vertical engine out here, called the Kitson engine, running on the tramways? Yes, I believe that was a vertical engine.

5017. Do you know whether that was considered a success or not? I really could not say.

5018. It was not brought under your notice? No.

5019. Have you noticed the cars attached to this motor? Yes.

5020. Did you notice any weakness anywhere—whether the floor-line was deflected beyond the horizontal line or not? I did not.

5021. You did not examine the general construction of the car? No, not minutely. 5022. Did you examine the heating space at all, the fire-box and tube? No.

5023. Beyond the opinion you have already given the Committee, you are not prepared to go into any further details upon the subject? No, not at present.
5024. Will you kindly inform the Committee on what date you resumed duty as Locomotive Engineer after your return from England? When examining the records of the office I found that the first minute I signed after my return was dated 11th June, 1883.

5025. You could not say whether you resumed duty before that date? No, I could not, positively. 5026. Will you endeavour to supply the date more definitely? Yes, if I can. I cannot positively say upon what date I resumed, but from the records of the office I have every reason to believe it was on

Monday, 11th June, 1883.

5027. I should be glad also if you can ascertain the date of the trial of the dump-car, when it was loaded with billet-wood, at which trial I believe you were present? I will, if possible. I was not present on the occasion when the dump-car was loaded with billet-wood, and from the inquiries I have made of the officers of this branch who were present, the date was I believe either the 7th or 8th June, 1883.

Mr. Henry Walker called in and examined:-

5028. Chairman.] What is your position in the Tramway Department? I am a driver on the Redfern

H. Walker. 15 Oct., 1884.

5029. What motors do you drive? I have been on several—Nos. 70, 71, 72, 73, and 75. 5030. They are compound motors? Yes.

You are still driving a compound motor? Yes. 5031.

5032. How long have you been driving the compound motors? Since they were first put on. 5033. Prior to that you were driving Baldwin motors? Yes.

5034. Will the compound motors do the same amount of work as the Baldwin motors? No, I do not

think that they will, judging by my experience of them so far.

5035. What number of cars do you generally take from Redfern to Bridge-street? Generally one; but sometimes we take two. If we have two cars we cannot keep time; we generally get behind. We oftener take one than two.

5036. Has the compound motor ever refused to act with two cars on? Several times. 5037. That is going up Elizabeth-street? Yes; I have engine No. 73 now, and there is

Yes; I have engine No. 73 now, and there is scarcely a day but what I get stuck up at Goulburn-street if there are two cars on and they are well loaded.

5038. Mr. Poole.] That is about half-way up the incline? The pinch is on the lower side of Goulburn-

street just before crossing.

5039. Chairman.] What quantity of fuel do you generally use? When the new valves were put in we used to use from $4\frac{1}{2}$ to 5 bags of coke, but after the motors have been out a few days the quantity gets higher, from 5 to 6 and $6\frac{1}{2}$ bags.

5040. What is the weight? Each bag is supposed to weigh 1 cwt. At present I am burning $7\frac{1}{2}$ bags.

5041. Mr. Poole. Is that in one shift? Yes.

H. Walker.

5042. How many hours do you work in a shift? I leave Randwick in the morning about 5.35 so as to H. Walker. leave Bridge-street at 6.5, and I am relieved at 2 o'clock. I run about nine trips to and from the station.

5043. How many hours are you engaged altogether? We are supposed to work 9 hours, but it all depends on the shift; one week we have a long shift and the next week a short shift. The morning shift is the shorter of the two.

5044. Then every 9 hours you use $7\frac{1}{2}$ bags of coke? Yes; as much as 9, 10, and 13 bags have been used in 9 hours.

5045. Have you used that quantity? Yes, before the new valves were put in. 5046. Since then you have been using $7\frac{1}{2}$ bags? Yes, but it is rising higher now. 5047. What has been the largest quantity which you have used in 9 hours? I that is in addition to about 2 cwt. of coal which I use at starting in the morning. I am using $7\frac{1}{2}$ bags now;

5048. What quantity do you use on the ordinary Baldwin motor in the same number of hours? The average is about six bags; that is the quantity I used; some only use five, but it all depends on the condition of the engine.

5049. They have an allowance of coal the same as the other motors? Yes, some of them carry 4 or 5 cwt.

of coal on the footplate.

5050. What do you think is the difference in the quantity of fuel used by a compound motor and a Baldwin motor in nine hours? I never use coal on the compound motors throughout the shift because they will not burn coal very well. When I get to Redfern in the morning I take out the coal and start a coke fire. We have all tried coal fires but they do not answer; there does not seem to be sufficient draught. There are some of the Baldwin motors which do not burn coal very well. I think that it -must be on account of the construction of the fire-boxes.

5051. I understand that from your experience as a driver of both classes of engines you say that the compound motors use more coke than the Baldwin motors? After a few days running they do. When they first came out with new valves they did not use as much coke as the Baldwin motors, but after running two or three days—two days—they have used more. What I mean to say is, that they get out of order sooner than the Baldwin motors, and then they use more fuel.

5052. How many cars do you generally take with the Baldwin motor from Redfern to Bridge-street?

5053. Always? Not always, but it is seldom that we run with one.

5054. Do you find that there is any difficulty with the Baldwin motor in taking two cars from Redfern to Bridge-street? There is with the small motors unless the two cars which are attached are single-decked. 5055. Is there any difficulty with the large and middle-sized motors? No; they will pull two cars; they do it every day

5056. Do you find that the compound motors get, out of order very often? Yes, very often.
5057. How long will they run without being taken into the shop for repairs? I have run them two or three days, and then they have been fit to go into the shop again. It is very hard work to get along with them then.

5058. Where do they generally break down? They generally blow through.
5059. What do you consider is the cause of that? I could not exactly say. Nearly all the engines now on the road are blowing through.

5060. Cannot that difficulty be overcome? They keep trying to do so.
5061. How long will the ordinary Baldwin motors run without being taken to the shop? It is seldom that they blow through unless they have been running for some months. I do not know, during the whole time I have been driving, that I have had one of them blow through.

5062. How long do they generally run without requiring repairs? They run from eight and nine to ten

months before they get overhauled.
5063. Mr. Poole.] That is with the exception of the side-rod brasses? Yes; they require to be attended

to frequently on account of the sand.

5064. Chairman.] How often are they taken into the shop for small repairs? Generally there is something to do every second or third night; it depends on the road. Some roads are very bad—the Newtown road especially—and in the case of engines running on these roads the brasses require to be reduced oftener than those of engines on other lines.

5065. How long does it take to do that? The side-rods on both sides are done in one night, besides other

little jobs.

5066. But in the combined motors there is very great difficulty, I understand? Yes, I cannot see how we are going to get along with them at all. I was on the first that was used; I was on it all the time it was being tried at Randwick.
5067. Mr. Poole.] You went out with the first motor? Yes, I was out at night mostly, running up the

Coogee Hill with it.

5068. Did the engine prime? Yes, she primed badly.
5069. Does she do so now? Yes, you can constantly see the water dropping from the cylinders down the

piston-rods.

5070. More or less she is always liable to prime? Yes, you cannot come up the hill without you see the water coming out of all parts.

5071. The pressure of the piston forces the water out of her? Yes.

5072. Is that the case with the other motors? No, unless you have a full boiler. 5073. With ordinary care you do not run any risk of priming with them? No.

5074. But you have to be exceedingly careful with the combined motors to prevent excessive priming? If you have two loaded cars on you have to carry a great deal of water, because often enough you have to stop, and then you have to open the cylinders, and thus before you get to Liverpool-street all the water and steam are taken away.

5075. Have you ever lost the fire-plug? No.

5076. Have you heard of the fire-plug being lost? I have.

5077. I suppose that was through priming? Yes.

5077. I suppose that was through priming? Yes.
5078. The engine threw all the water out of the boiler, and the fire melted the fusible plug? Yes.
5079. In answer to the Chairman you said that after the combined motors had been out a day or two you used about $7\frac{1}{3}$ bags of coke per shift, and that in your opinion the Baldwin motors do not use as much as that;—what kind of Baldwin motor had you in your mind when you made that statement—the large one or the small one? The ordinary medium-sized one, which we have on the Redfern line.
5080.

5080. I suppose that your mate would use about 7½ cwt. of coke in his shift? Yes, perhaps a little more. 5081. Then in the two shifts you would use from 14 to 16 cwt. of coke per day, in addition to the coal which is supplied for lighting up with? Yes.

Mr. H. Walker. 15 Oct., 1884.

5082. Have you had any difficulty with the valves and valve spindles? Yes, a few have bent. 5083. How often has that happened while you have been driving? I have had two bent, and a third slightly bent.

5084. Have you had any broken? No. 5085. Do you know the cause of the bending? I think it was owing to the heavy pressure of steam.

I did not consider the spindles strong enough, but we have had them strengthened since.

5086. The stuffing-boxes have been opened, and larger spindles put in? Different spindles have been put in, and a strengthening bracket put in the centre.

5087. But even now, with all the improvements which have been effected, you find that after the motors have been running a couple of days there is great difficulty in getting along the read with them and have been running a couple of days there is great difficulty in getting along the road with them, and keeping anything like a fair head of steam? It is very difficult; we cannot give satisfaction to our superior officers or to the traffic.

5088. When you have to take a second car you have great difficulty in running to time? We have. 5089. I suppose you would far sooner drive a Baldwin motor than a combined motor? There is not half as much trouble on the Baldwin motor.

5090. Is there a man to do the firing at Redfern station? There has been a man to do it since the four motors have been out, but when only two were out we had to do our own firing. Of course we are held responsible. We have generally to attend to the fire after the man puts the coke on. 5091. When you reach Bridge-street you have to turn the motor round? Yes.

5092. How long does that take? About 3 or 4 minutes, sometimes it is longer; sometimes the men are away cleaning cars, and we have to wait.

5093. How many men do you have to turn it around? Two, but I have known it to take as many as seven and eight, and even twelve; but it has been easier since the table was altered.

5094. The number you speak of would be when the table was stiff and a little out of adjustment? Yes, it would be out of order.

5095. Have you ever asked to be relieved from driving the compound motor? No; I have not asked. 5096. Is there any saving in the oil used? Yes, I dare say there is a little. 5097. But you think that there is not the slightest saving in the fuel? I do not think so. 5098. On the other hand, after the first day or two of use, the combined motor in your opinion uses more fuel than the ordinary Baldwin motor? I think so.

Mr. Thomas Rawlings Osborne called in and examined:

5099. Chairman.] What is your position? I am an engineer, but at the present moment I am a motor-

Mr. T. R. Osborne. 15 Oct., 1884.

5123.

5100. You have served your time as an engineer? Yes.

5101. How long have you been driving motors? A little over three years. 5102. What motor are you driving at the present time? No. 71. 5103. One of the compound motors? Yes.

5104. Do you experience any difficulty in taking more than the car itself from the railway station to Bridge-street? I have had no difficulty so far, but the loading has not yet been very big for a test. 5105. What loading has there been? Each of the cars have so far been about half-full. 5106. Have you had more than one car? One car as a rule.

5107. Have you tried two? Yes.
5108. With what result? The cars have not been fully loaded. There has been, perhaps, half a load in each car. There has only been about half the complement of passengers, so that I have not been able to get a thorough test.

5109. Have you found any difficulty in getting to Elizabeth-street? Not so far.
5110. What quantity of fuel do you use? I think the first day I was out I used about $4\frac{1}{2}$ bags, that is, $4\frac{1}{2}$ cwt. That would be from half-past 7 o'clock in the morning until 4 o'clock in the afternoon. Of course there would be a fire brought out from the sheds, but that would not be counted. We only count the coke which we actually take after we leave the shed.

5111. Supposing you have any coke in the motor at the time you start? None of that is counted. 5112. What quantity do you usually have when you commence? I dare say there is sufficient to bring us down from the racecourse to Bridge-street, and from Bridge-street to the railway. We burn 4½ cwt. after we leave the shed.

5113. How much do you burn from half-past 4 until the last trip at night? I have burnt five and six

bags; last night I burnt six.

5114. That would be about 10 cwt. in the day? Yes. The first day I was out I burnt $4\frac{1}{3}$ cwt.; the second day I burned 5. For two days in succession I think I burned 5. Now it has gone up to 6.

5115. You found it necessary then to increase the quantity of fuel? It appears so.

5116. What is the greatest quantity you have used from half-past 4 o'clock until the last trip at night?

Six bags.
5117. What quantity would be used for the Baldwin motors on this trip to the railway? I could not say.

The railway I have been driving a compound motor. I could not speak with certainty therefore as to the quantity which is burnt on the railway trip by the Baldwin motors.

5118. Mr. Poole.] When you come out from Randwick you have a certain amount of coke on the foot plate which is not counted against your running? No, that is not counted on the sheet.
5119. Only the coke you receive from Redfern? Yes.
5120. So that if you happen to have a bag of coke on the foot-plate when you go to the station at Redfern that would not count against the day's delivery? No.
5121. Who fires the motors up ready for your use at Randwick? They are ready when we go to the sheds in the morning. The cleaner is supposed to see that all is ready.
5122. If you had a full fire when you started you would not require to fire again going down to Relfour 2.

1043--- U

sheds in the morning. The cleaner is supposed to see that all is ready.

5122. If you had a full fire when you started you would not require to fire again going down to Redfern? No; but it would not be safe to come away without a little coke to spare.

Mř. Ť. R: Ösborne.

5123. I suppose you usually have from half a bag to a bag of coke on the foot-plate? Yes, lately we have been starting with coal

15 Oct., 1884. What run were you on before you were appointed to run the compound motor to Redfern? Moore Park to Raindwick and Coogee Bay.

5125. Is that a lighter or a heavier run than the Redfern line? It is much heavier if you go to Coogee. 5126. What kind of motors do you use on that line? One of the Baldwins. 5127. One of the heaviest ones? No, one of the medium class.

5128. And would your mileage be greater on the Randwick and Moore Park line per shift than on the Station run? Yes.

5129. Much greater? Yes.

5130. And the passengers per trip would be greater in number? I should say they would be, judging from the experience I have had in eight days on the Redfern line.

5131. Is not the Redfern line looked upon by the drivers as being one of the lightest lines to run? Yes.

5132. One of the very lightest? Yes; of course there is only the bank in Elizabeth-street.
5133. But that is only a short bank? Yes, and there is also the little piece going across from Bridgestreet; but we have to encounter that.

5134. About how much coke per shift would you use on the Moore Park shift? It would depend entirely on the state of the motor.

5135. But taking the average? On the average we might burn from eight to nine bags a shift.
5136. But your mileage would be considerably more? Yes; of course if you went to Coogee Bay the mileage would be still greater than running to Moore Park; if you stop running at Moore Park, and another motor takes it up there, the mileage would be less, and you would burn less fuel than if you went through to the bay. If you took one or two trips through to Randwick you would burn one or two bags of coke more. The grade from Coogee Bay to Randwick is very much heavier, and with a light motor

you are bound to keep up a good fire.
5137. Although you do not drive the ordinary motor on the Redfern length, from your experience of them do you think they would burn more fuel to do the same amount of work than is burned by the compound

motors? As far as the average goes I do not suppose they would burn more.

5138. According to your opinion then, there cannot be a very great saving of fuel by the use of the compound motor? Not under the present system.

5139. You have told the Committee that when the motors go out from the repairing-sheds, or when they have had an overhauling, you can do a shift with about four and a half bags of coke. I suppose when you referred just now to your burning four bags in the first day, you meant that the motor had just come out? Yes.

5140. But you increase your fuel up to six or six and a half bags in a shift? Yes.
5141. And you have been driving only nine or ten days? Only eight days; this should be my ninth day.
5142. You have had the same motor? Yes.

5143. And you find the consumption increases slightly every day? Yes. I could not say what we burnt last night, not being at work this afternoon. I have not my coke docket. On Monday we burnt six

5144. Had you any difficulty through the engine priming? No great difficulty as to her priming. That

is not a very great drawback.

5145. What in your opinion is the cause of this gradually increased quantity of which is necessary to keep up the supply of steam day by day? Am I to understand you this way, that the construction of the

motor is bad, or that there is extra wear and tear?

5146. The question is this: You informed the Committee that when you first began to drive, the motor did its duty with four and a balf bags to the shift; you have said that that has increased by two bags per shift;—what is your own idea as to the cause of that? Of course it would be waste of steam over and above what is necessary to drive the motor.

5147. And what is that waste caused by, in your opinion: of course if you do not know or if you are not sure you need not say? Of course we are outside and we cannot very well look inside to see. We may

have an idea as to what is wrong, but then we may be wrong ourselves.
5148. Would your ears not guide you as to the cause? In a manner of speaking they would. The construction of the piston-valves in these motors is such that it would be sometimes almost impossible to say with certainty whether the valves were blowing through or whether it was the packing between the valves. It would be necessary to take them out to see.

5149. The steam escapes through from the boilers without doing full duty on the piston-head? That

would be waste of steam.

would be waste of steam.

5150. In ordinary phraseology the engine would be blowing through more or less? Quite so.

5151. Have you any difficulty with the valve-rods? Not yet.

5152. Are the valve-rods of the engine you are driving of the same strength as they were originally designed to be, or have they been strengthened here? I could not say.

5153. You know the cast-iron that spans the boiler upon which the two sets of cylinders are bolted;—
has it shown any signs of weakness yet? Not yet.

nas it snown any signs of weakless yet? Not yet.

5154. Has it been strengthened by wrought iron plates being bolted on to it? I could not say whether the plates were put on here, but there are plates on it.

5155. You have been on the run out to Newtown and Marrickville I presume? The engines run from Newtown and to Newtown again without a fresh supply of water. I am speaking of the ordinary Baldwins. That is to say they do not get their water at the Bridge-street sheds? Not as a rule.

5156. The water you obtain at Newtown brings them into town and takes them back again?

5157. I am speaking of the medium-sized motors; —would the compound motors be able to do that run without a fresh supply of water? I do not think so.
5153. Would they be able to run from Bridge-street to Newtown without a fresh supply? I dare say

they would.

5159. But they would not come back? Not with safety I should imagine. You must understand I do not say that it cannot be done, but I should not consider that it would be safe to run the risk.
5160. You think that there would be great danger of a stick up for want of water? Yes.
5161. If these engines were brought generally into use, would it not be necessary to supply them with water more often than the Baldwin engines are supplied? Yes, unless the tanks were made larger. 5162.

5162. Is it not much more easy to shunt the ordinary Baldwin motors and to get round to the other end of the carriages again than it is to turn the compound motor on the turn-table and take up the running? Under existing circumstances it is.

Mr. T. R. Osborne.

D. Manning.

5163. If the Government decides to use all these new kind of engines you would require a complete circle

at Bridge-street? That would be necessary 5164. That is, it would be necessary to enable you to get to your work again with reasonable speed?

Yes.

5165. Do you fire the engine yourself? A fireman is kept at the Railway Station. Sometimes when we have another car on we generally put a little coke on so as to make sure of taking us down to the Railway again; but as a rule the man at Redfern does the firing.

Daniel Manning called in and examined:---

5166. What is your occupation? I am in charge of the fuel at Redfern. 5167. How long have you been there? Ten months. 5168. You supply fuel to all the motors? Yes.

15 Oct., 1884. 5169. Can you tell the Committee the quantity you supply to each class of motors per shift? The combined motors when they are in good repair take about 4 or 5 bags. As they are worked the supply

5170. Mr. Poole.] Up to what quantity? From 11 to 13 bags. 5171. Chairman.] On one shift? Yes, of course, when they first Yes, of course, when they first come out they do not require that quan-During the last week some of them have used 6½ or 7 bags, and some of them as much as 8 bags on the shift.

5172. What does the medium Baldwin motor use per shift? They use about 4 or 5 bags on the shift when in good repair.

5173. What weight is in a bag? They are supposed to contain 1 cwt.

5174. As you have charge of the fuel, can you inform the Committee whether taking everything into consideration, the combined motor uses more fuel per shift than the medium-sized Baldwin engine? They do, unless in the case of a common motor which is very much out of repair. 5175. You have no doubt about that at all? No doubt about it.

5176. Mr. Poole.] Do you keep a sheet or book, showing the amount of coke delivered to each kind of engine every day? I keep a book, and according as the coke is taken I enter it to each man, and as he goes out he gets a docket from another book, showing the amount he has taken. Then I put all those into a sheet and put the sheet in the office.

5177. And does the driver sign? Sometimes, if I require him to he does, but I always keep the butt, and

give him another part.

5178. But there is a book in which you register every day the number of bags of coke you supply to each engine? Yes.
5179. What is that book called? The docket-book.
5180. The fuel docket-book? Yes, and there is another which I call the coke-book.

5181. Mr. Suttor.] Are the bags sent full? They are sent full, but they are generally emptied into the shed, and the coke is afterwards taken out in baskets.

5182. Mr. Poole.] The coke is given out in baskets to both kinds of engines? Yes.

TUESDAY, 21 OCTOBER, 1884.

Bresent:-

Mr. GARRARD, Mr. POOLE,

MR. SUTHERLAND, MR. SUTTOR,

Mr. TEECE.

SYDNEY SMITH, Esq., IN THE CHAIR.

Mr. George Downe called in and further examined:-

5183. Chairman.] You were requested to produce certain books and a return? Yes, the books are here (produced), and the return will be here in half an hour. I took up the wrong paper in my hurry this morning, but I have telephoned to have the right one sent on. (Return referred to subsequently

G. Downe. 21 Oct., 1884,

5184. Will you inform the Committee whether any order has been given for thirty additional compound motors, or any less number? I think not.

motors, or any less number? I think not.

5185. Do you know if the Minister has approved of any such order? The Minister did approve.

5186. Of how many? Thirty.

5187. How long is that ago? I should think it would be six weeks or two months since.

5188. Has any action been taken to carry out that approval? Not that I am aware of.

5189. Do you know the price that was to be paid for these motors? £1,075.

5190. To whom was the order to be given? I anticipated the order would be given to the Baldwin Works. The papers, I think, are before you, with my minute and recommendation.

5191. Would the order be given direct to the Baldwin Company, or to an agent in Sydney? I could not say how the Minister would give it.

say how the Minister would give it.

5192. We omitted, when you were before the Committee on the last occasion, to obtain your history prior to your entering the Government Service in New South Wales;—will you kindly tell us how you were previously employed? It is stated in the papers—all my testimonials and everything—my experience for thirty-five years.

5193. In what papers? In answer to a question replied to in the House by Mr. Copeland, I think, at the time he was Minister for Works.

5194. Where were you engaged prior to entering the service of this Government? I was with Mr. T. S. Mort.

5195. How long? About three years.

5196. What were you doing? Designing and erecting machinery for him. Mr. G. Downe. 5196. What kind of machinery? Refrigerating machinery.
5197. What kind of machinery? Refrigerating machinery.
5198. What did you leave Mr. Mort's service for? The job was completed.
5199. Where were you engaged prior to that? In Victoria.
5200. How? As Manager of the Langlands Foundry Company.
5201. Were you there long? Twelve months.
5202. Why did you leave? Because I considered this Colony opened up more advantages.
5202. You left all these places of your own second? Ver 21 Oct., 1884.

5203. You left all these places of your own accord? Yes.

5204. Have you designed any other class of stock for the tramways other than the compound motors?

Yes; some cars, as I told you before. 5205. What sort of cars? Six-wheel Six-wheeled cars. In fact the drawings were made by me for the large ninety-

passenger car, and a six-wheeled car.
5206. Was the six-wheeled car subsequently altered? It was subsequently altered to four wheels, and

afterwards to bogies. 5207. Did you design any other car? The ninety-passenger car was drawn by me under Mr. Mason's

directions—those with the glass sliding doors.
5208. You have nothing to do with the Camden tramway? Nothing whatever.

5209. Are you aware whether there are any cars on the Camden tramway that have not been used for some time? Three cars that were put upon the Camden tramway when it first started were afterwards

abandoned by the Railway Department when they took charge.

5210. What has been done with them? Nothing as yet.

5211. Where are they? 'I think they are at Campbelltown.

5212. They are not being used? No, I do not think so.

5213. Have you seen those cars lately? I have not.

5214. What was the cost of those cars? I do not know what the original cost was. They were built

before I entered the Department.
5215. I understand the Railway Department declined to use them? I think so.

5215. I understand the Railway Department declined to use them? I think so.
5216. Could they not be used in Sydney? No; we have been obliged to take the same class of car off the streets here, because they are end delivery cars; the delivery is not sufficiently rapid; too much time is taken up in getting the passengers in and out. They are used occasionally at holiday times, but they are not suitable for general traffic, for the reason I have given.
5217. Are the Committee to understand that the cars at Campbelltown are not suitable for the tramway there or in Sydney? They are not suitable here, for the reason I have just given, and the Railway Department do not consider they are suitable for the traffic on that line.
5218. By whose directions were they sent to the Camden line? By order of the Commissioner.
5219. Mr. Poole. You say you designed and fitted up some refrigerating machinery for the late Mr. T. S. Mort? Yes.
5220. Where? The killing machinery was put up at Lithgow and the refrigerating machinery.

5220. Where? The killing machinery was put up at Lithgow, and the refrigerating machinery on board the ship "Northam."

5221. And you designed that? I designed it under Mr. Nicolle.
5222. Was the machinery fitted up on board the "Northam" a success? It was not.
5223. It was a failure? It was a failure.

5224. You were Manager for twelve months at the Langlands Foundry, in Victoria? Yes. 5225. Did you design or modify the design of any locomotives there? I had to do with the rebuilding of a contractor's locomotive there. There were certain portions—the cylinders and some other portions—and we had to make it complete and put it to work. That was done while I was there.

5226. Was that a success? As far as I know it was; it did its work.
5227. Were you a shareholder in that Company? I was not.
5228. And that was the only locomotive the design of which you interfered with there? I did not interfere with the design—I merely carried it out.
5229. You did not design or modify the design of any locomotive? No; I only carried out the original

specification.

5230. Previous to your coming to the Colonies, what mechanical branch of engineering were you most accustomed to? I served my time in the Government yard at Devonport; I was apprenticed there for seven years, and I worked for five years as a mechanic. After that I started in the management of general engineering works in Plymouth, in which we had to do with all descriptions of engineering work—mill work, portable engine work, and marine work.

5231. Not locomotives? Not locomotives.

5232. After that? After that I was Assistant Manager to a gas establishment for some time in England, and then I came to Victoria. At the time I was Manager for the engineering establishment at Plymouth I was also an Engineer Surveyor for the Board of Trade, an Examiner of Engineers, and Engineer Surveyor to the Emigration Board.

Surveyor to the Emigration Board. 5233. Do you know the special reasons why the Railway Department object to run the particular description of car referred to on the Campbelltown and Camden Tramway? I do not know any special

5234. The same reason that holds good in Sydney as to the delay in receiving and delivering passengers through the end would scarcely apply on the Camden line? No, it could not.

through the end would scarcely apply on the Camden line? No, it could not.

5235. There must be some other special reason? I do not know what it is.

5236. You had nothing to do with the design of these cars? Nothing whatever.

5237. Mr. Teece.] You say the order was given for these thirty compound motors? No, I did not say the order was given; I said it was approved.

5238. You recommended that thirty additional compound motors should be obtained? I did.,

5239. And the order was approved by the Minister? It was.

5240. The Minister has signed a minute to that effect? Yes.

5241. Do you know whether the giving of the order has been postponed? I do not think there is anything on the papers to show that it has been postponed, but there was a promise by Mr. Stuart in the House that he would not order them at once.

House that he would not order them at once. 5242. Do you know whether these motors are being manufactered by the Baldwin Company? my knowledge.

5243. To whom would this order be given;—would it be sent direct to Burnham, Parry, Williams, & Co.? I do not know.

Mr. G. Downe.

5244. Mr. Augustus Morris has told us that the orders for previous motors were sent through him;— 21 Oct., 1884. are you aware of any communication with Mr. Morris in reference to these thirty? I am not. I know a cablegram was sent offering to make them for £1,075.

5245. Was there any communication from him as to the time they would deliver them? I think that was in the cablegram; I think it stated they would send ten in November, ten in December, and ten in

January

5246. That was after the Minister approved of the order? Yes.
5247. And Mr. Morris was informed of the approval of the order? That I cannot say.
5248. You know that after the approval of the order Mr. Morris wrote, stating the time they could be delivered? I know that, after the approval of the order, there came a cablegram from the Baldwin works. 5249. You recommended the ordering of these thirty compound motors, the Commissioner endorsed that recommendation, and the Minister approved of it. Yes.

5250. Is there any minute afterwards disapproving or postponing that order? I do not know.

5251. In pencil here I find the words "postponed by Minister";—who wrote that memo.?

know whose writing that is; it is something like the Minister's own; I do not think it is the Commissioner's.

5252. What would be the cost of freight on these compound motors? To have them brought by sailingship it would be about £60 I think.

5253. And by steamer? Perhaps another £100, because they would have to go over 3,000 miles of rail transit; about £160 if brought by steamer.

5254. Mr. Sutherland.] You say you drew the plans of the six-wheeled car? Yes.
5255. Was there not a contract taken for six-wheeled cars? I am not quite clear, but I think there was.
5256. Who got the contract for them;—were they divided amongst three? They were divided amongst

three—Hudson Brothers, Mr. Wearne, and Mr. Ritchie. 5257. How many from each? Thirty-two from Hudson Brothers, fourteen from Wearne, and four from

5258. Of these six-wheeled cars? No, we only got two six-wheeled cars; they were altered to fourwheels after two had been made.

5259. What was done with them? They were afterwards altered to bogies. 5260. Were they not tested on the lines and found to be a total failure?

5261. Were they tested on the lines at all? Yes.

5262. And were they not a failure so far that they could not be run? Why not?
5263. I cannot say why—I am asking you? They were running constantly.
5264. Why were they altered? They were altered because the traffic complained that they had not brake power sufficient on the four wheels when braking down.

5265. Were the contractors paid the same price for the four-wheels as they had contracted for for the the six-wheels? Yes, because it was considered that the underframing was about equal, and that there Yes, because it was considered that the underframing was about equal, and that there would be no difference in cost.

5266. You considered the six-wheeled car as the best design you could get? The six-wheel was adopted with the view of lightening the dead haulage as much as possible; we saved the weight in every car of a pair of wheels and axles at the least. If you save that haulage over our lines upon every car that runs per day, that means something considerable when totalled up.

5267. However, you abandoned that contract, and the contractors got the same price for the four-wheels as they had contracted for for the six-wheels? Yes.

5268. And what became of the four-wheel cars that replaced the six-wheels? They were afterwards

altered to bogies.

5269. Why were they altered to bogies? By reason of the complaints that were made of the jolting said to take place over the joints of the rails being so much felt on a single pair of wheels, which would be distributed in a bogie—there were great complaints of that. And then the traffic complained that they could not brake them down. And the cry again was that there being only four wheels, if one wheel broke there would be danger of the car toppling over, and perhaps great loss of life would accrue therefrom. Acting upon the pressure thus brought to bear, the Commissioner decided to stop these cars and have beginn by under them have bogies put under them.

5270. You were the designer of the car, and you have given us evidence that everything you designed is perfect;—has anybody else given evidence to that effect? I am giving you the facts, as they appear to me; I do not know what the other evidence is.

5271. What was the next thing you designed on the tramway? This combined motor and car. 5272. And do you say the combined motor and car is a success? I do.

5273. Would you have any objection to have a test made completely out of your hands, to test this motor, by disinterested people? I would have no objection whatever.

5274. Did you make the drawings of any other car when you were with Mr. Mason than that you have already given to the Committee? I gave the drawings of different cars on the railway under him.

5275. Can you give us any special one that you have drawn that has never been used—one made and never used—or found unsuitable for the purpose? I drew a combination sheep and cattle truck and a C van.

5276. Do you know whether that was a success or not? The cost was said to be too high, and it was abandoned on that account.

5277. It has been abandoned? It is used, I believe, as a sheep or cattle truck occasionally, as far as I I have never looked after it for some time.

5278. Have not one or two of these combined motors broke down since you were here giving your evidence? The transverse angle-iron of one broke on Friday last. 5279. Only one? That is all.

5280. Can you give us the number? 7. 5281. Mr. Poole.] The last out? Yes.

5282. Mr. Sutherland.] Is 73 running all right? Yes, she is running still. 5283. How long had 74 been on the road? Ten days.

5284. And how long will it be before you get her on the road again? It is a very awkward job to repair the angle-iron.

5285. Will you not have to take the motor almost to pieces? No, we can lift the boiler and take the

angle-iron out. angle-iron out.
5286. Mr. Suttor.] With regard to the compound motor, what parts do you consider original, or what parts have you adapted? I look upon very little of it as original. It is an adaptation of a principle with the two cylinders one on top of the other; and then I adopted the boiler that I thought was most suitable. That was originally designed by Mr. Brown, of Winterthur. Then I put a change-valve in it—that was my own—which enabled all four cylinders to be worked at high pressure when occasion requires. Then I altered the arrangement of the attachment to the car from any we have got, because I

deemed it better than what we have.

5287. Have you patented the motor as a whole? I have not patented anything.
5288. I think some officers of the Department have pointed out to the Committee that there is a very great saving in fuel with these compound motors as compared with the Baldwin motors;—have you inquired into the relative amounts of fuel consumed? Yes.

5289. And you are still of opinion that there is a great saving by using your motor? Yes.
5290. Does the actual test of running show that there is considerably less fuel consumed by the compound motor than by the Baldwin motor? Yes.

motor than by the Baldwin motor? Yes.

5291. What inquiry have you made as to the amount of fuel used? The fuel-men at the station serve out the fuel to the drivers; they put the amount on a docket, which the driver signs, acknowledging that he has received so much; and the driver enters that upon his daily sheet or return of work done. This sheet shows the amount of fuel he consumes on his trips, and the returns I speak from are from these sheets

5292. Up to what time have you made this inquiry;—have you inquired up to the end of last week? No,

up to the end of September.

5293. Have you found that one of your motors generally consumes the same amount of fuel, whether she has been running on the road for some time or whether she has just gone on the road after an over-haul? Sometimes she consumes a little bit more until she gets into proper trim. With a little wear, if haul? Sometimes she consumes a little bit more until she gets into proper trim. With a little wear, if the valves keep in good order, she will want a little less. When she first comes out she consumes a little the valves keep in good order, she will want a little less.

more than when she gets a little free.

5294. Is it your duty to examine these motors occasionally? Yes.

5295. Are they in fairly good order, excepting those in the workshop? Yes, there are four doing traffic now. One of them is blowing a little, and may have to be taken in.

5296. Is No. 103 on the road? Yes; that is the one I refer to as blowing a little. She takes two cars—that is, another car besides herself.

5297. Is she sound? I know nothing of her being unsound.

5298. I suppose when examining the motor you examine the car as well? Yes; No. 73 motor is in 103 car, and they are still running.
5299. As a rule I understand you run the combined motors with their own carriage only? They often

take another car besides their own.

5300. But as a rule a combined motor only runs with one car? It takes two when required. If the traffic does not demand an extra car they run by themselves. They each take two or three trips per day with a double car.

5301. As regards the saving of fuel, whether they take two cars or one, the comparison is in favour of the combined motors? Yes.

5302. And I clearly understand you to say that you arrive at this opinion after having actually tested the amount of fuel consumed by both engines? Yes.

5303. Mr. Poole.] Do you know that one or both of the sole-bars of car 103 is fractured on the lower edge? Yes, they are fractured on the lower edge. 5304. You know that? Yes.

5305. Is that from the fault of the design, or of bad workmanship or material? If you call it a fault at all you may say it is in the design, because you must take the cross-grain of the wood; but if you can get wood that can be bent to form that, you do not get the cross-grain of the wood.

5306. I take it you took into consideration all the practical difficulties—that you were well acquainted with the timber you would get? Yes.

5307. You have told the Committee to-day that there is very little of the compound motor that is new? \mathbf{Y} es. ,

5308. That the various parts are adaptations of machinery that you have seen or read of, or heard of elsewhere? Yes.

5309. Now I will call your attention to question 3606 in your evidence of 7th October:—"3606. Coming back to the design;—that you inform the Committee is solely your own—?" It is my adaptation.
5310. When you designed the six-wheeled cars you considered that was the best kind of car you could design for the purpose? From my standpoint, yes. I considered we should save dead haulage; it was my duty to save dead haulage if I could.

5311. That car was the best kind of car to effect that object? Yes.

5312. There were only two of them used, I think you said? There were three of them used.

5313. And the remainder of that order the contractors were authorized to turn into four-wheeled cars?

Yes; to still further lessen if possible the dead weight.

5314. Now you tell the Committee that complaints were continually made of the excessive jolting of the four-wheeled cars? Yes.

5315. Did you not take that into consideration in designing the four-wheeled cars? I did not take into consideration the bad road I should run on; I considered they would make the road good; I had no right to think I should have to run on a bad road.

5316. You had no right to consider the road the cars had to run on? I had a right to consider the road, but not to suppose it would be in a bad state. If the road was maintained perfect there would be no

jolting, and no complaints. 5317. As designer you took into consideration the nature of the road, its formation, and general character? Yes, supposing it would be efficiently maintained. Yes, supposing it would be efficiently maintained.

5318. And knowing all that, you designed the four-wheeled car? Yes.
5319. Was there not a difficulty in getting the six-wheeled car to go through the points at the crossings?

There was not; there could be no difficulty, because the outside wheels on each end radiated to the curve.

5320. And the pony action adjusted itself in coming off the curve on to the straight road? Yes. 5321. The fact remains, however, divested of all technicalities, that first of all these cars were to be six-wheeled cars; these were changed into four-wheeled cars; and these again have been altered to run on double bogies? You have not got it exactly. When we were pushed for rolling stock, I suggested to the Commissioner that we should make them on six wheels, and save the dead haulage of a pair of wheels and arlors they contains did their work posterior and I then proceeded that we might still wheels and axles; they certainly did their work perfectly; and I then suggested that we might still further reduce the dead weight by taking another pair off. There was no time to make this alteration before we had to proceed with these cars, and therefore drawings could not be got ready till we had two of the six-wheeled cars made. Then we had one made with four wheels, brought it on to the railway lines, and ran it on the lines to make sure the radiction was perfect, and then the others were ordered to lines, and ran it on the lines to make sure the radiation was perfect, and then the others were ordered to be put on four wheels.

5322. And since then they have been converted into double bogies? They have, for the reasons I have given. 5323. Will you give the Committee your idea of the cost of converting these four-wheeled cars into double bogies, or eight wheels? There was a return given on that subject in answer to a question in the

5324. When that question was asked, it would be referred to you for an answer? Yes. 5325. And that answer is yours? Yes.

5326. Now I will call your attention to that answer as given in the Votes and Proceedings of the Assembly, No. 49. The question was: "Who was the designer of the tram-cars intended to run on four wheels; at what cost were they altered, so as to be run on eight wheels"? The answer given by Mr. Wright is this: "The cars were designed by the Superintendent of Rolling Stock, and the cost of altering same was £70 per car, but the actual loss would not exceed £25 per car." Now can you explain to the Committee how that was? I think I can pretty well explain how that was arrived at. The value of the popies was £50: they were taken out for the reasons given and hogies substituted, the contract of the ponies was £50; they were taken out for the reasons given and bogies substituted, the contract price for which was £70; and then there were some little extras attached to altering the cars, say about £2 a car, and an extra set of bearings and brasses, about £3—bringing up the cost to about £75 per car. Now, if the ponies as they were taken out were only old iron, I grant you the answer is wrong; but if, when we get our roads in better order these can be again utilized for ponies under trucks, then the value remains at what they cost, less any depreciation until they are in use.

5327. They are rusting in the meantime? They are resting in the meantime.

5328. Is it not a fact that Hudson Brothers had £70 per car for what they did in the conversion of the

four-wheeled cars into eight-wheeled cars, and the Department found the wheels and axles? The Department always finds wheels and axles in all cases.

5329. Is it not a fact that Hudson Brothers got £70 each for the conversion of these cars? Yes.
5330. And the Department found wheels and axles? Yes.

5331. Does it not follow as a matter of course that the Department must find two extra axles and four wheels? Yes, they must.
5332. Must not that be added to the £70? Yes.

5333. Then how can you reduce the cost to the Department down to £25? When that answer was given the wheels and axles were lost sight of.

5334. But you evidently deducted them? No, we did not deduct them at all.
5335. The contract price was £70 for what Hudson Brothers did; the Department found wheels and axles. Now, assuming that the two axles and four wheels were in good order and fit to be used in the bogies, does it not follow that the Department had to find the other two axles and four wheels? Yes.
5336. What was the value of them? The value of them is £16 3s., for two axles and four wheels. That should be added on to the £25, no doubt.

5337. Should it not be added to the £70? If you say the pony is only old iron you alter the value to

£66 or £71.

5338. £70 was the first cost of Hudson Brothers' work, then the Department found them wheels and axles to the value of £16 3s., that makes £86 3s. And after the cars came back to the yard they were still subject to some alterations with respect to the brakes? That I am not clear about.
5339. What is it you deduct from the £86 3s; the value of the radiating gear only? Yes.
5340. What is that? They cost £50; the ponies and the wheels and axles were omitted.
5341. It seems to me the answer given to Parliament does not square with the facts? The wheels and

axles were omitted in the hurry, no doubt.

5342. Since you were here before the Committee, have you considered it any part of your duty to interview any one of your officers that have given evidence here? I sent for Mr. Davis to ask him some particulars, before answering questions about the cars, to see if he could give me some information to

refresh my memory.

5343. Is it a question of memory, or do you refer to written records of all these matters? I had to depend on memory in this case to some extent, because that answer was given to the Commissioner when I had not an opportunity to refer to the records. I sent for Mr. Davis to ask what there was in connection with it at the time—to ask if he could remember the circumstances; and then he told me he had given evidence. I said, "What evidence did you give"? and he said he could not remember.

5344. In making up an answer for your superior officer, to be given through him to the Minister, and through the Minister to Parliament, do you trust to memory? This is what had to be done. The question is sent to me, and I sent it to the officers each to give what particulars may be in his department. In this case for the answer to the first question I referred to the Accountant. I put on the paper,—"The Accountant can answer last clause," and he can produce the paper and show you that I did so, and the answer that he gave.

5345. You simply throw the responsibility on the Accountant? I said, "the Accountant can answer the last clause." Then the Commissioner sent for me the morning the question had to be answered, and we

discussed the matter then, and wrote the answer you have there.

5346. However the answer was arrived at, the fact is it is not correct? It is correct, omitting the wheels and axles.

5347. Mr. Sutherland.] How do you arrive at the £16 3s.? That is the imported cost, including freight, landing charges, and other matters.
5348. Have you taken into account charges in this Colony? Yes, that is all included. The amount I am

giving you is what the store has rendered me as the cost. 5349. 160

Mr, G. Downe. 21 Oct., 1884.

5349. Is the cost of sending the wheels and axles to the manufacturer's included. The manufacturer fetches them from the store.

5350. The manufacturer pays for fetching them? Yes; that is in the contract—that he has to get the

material from the store.

5351. Chairman.] Who would be the person to rely upon to give evidence regarding the consumption of fuel, say for the motors running between Redfern and Bridge-street? You can have the drivers' sheets and returns. The fuel-men have their dockets, as I explained just now, on which they put the amount issued to each engine. They give each driver when he goes off duty a docket; the driver signs the docket, and puts on his sheet the amount the man gives him a docket for.

5352. Independent of the drivers the fuel-men at Redfern station could inform the Committee of the exact quantity distributed to each class of motor? Yes, the amounts which they issue. But besides

that we give all the Baldwin motors from 4½ to 5 cwt. of natural coke every day, when they leave Rand-

wick, of which the fuel-men take no account. 5353. Is that done in every case? Yes.

5354. Does the compound motor get a like allowance? No, only just enough to take it to its destination. 5355. You are quite certain the Baldwin motors each receive four or five bags prior to leaving Randwick?

Yes; 5 cwt. is the instruction I give. 5356. Is that quantity issued daily?

168; 5 cwt. is the instruction 1 give.
5356. Is that quantity issued daily? Yes, every morning.
5357. If they have any surplus at the end of the day is 5 cwt. additional put on the next morning, or is the amount made up to 5 cwt.? No, they do not do that. What little is left is used for night-work and making up the fire in the morning. They have to take up so much natural coke into the shed for making up fires in addition.

5358. Have you heard of any person making a claim against the Government for infringement of patent in regard to your motor? Mr. Rowan said something about infringing his patent, but he has never

5359. Do you know whether it is his intention to do so? I do not.

5360. Do you think he has any grounds for making a claim? I do not. The attachment of the car is the thing which he sought to claim a royalty for. The attachment of the car which he patented and the attachment of the car as it is are distinct; and that is the only thing he patented in the Colony, so that I do not see how he could sustain his claim.

5361. Who is Mr. Rowan? He is a brother of Mr. W. C. Rowan, who had a great deal to do with

steam-cars in England and on the Continent. It was from them we got the first steam-car.

5362. Is he an agent? For his brother.

5363. Is he agent for the Kitson motors? Yes.
5364. Is it true that while the plans were being drawn for the combined motor the Kitson motor was at Randwick shed? Yes.

5365. Do you know whether any of the parts of that motor were measured? Not for this purpose.

.5366. Not for yours? No.

5367. Are you quite certain the draftsman did not make any measurements from the Kitson motor? There is no similarity—nothing to assist him in any way.

5368. What royalty was paid on Joy's patent? I think it was 50 dollars.

5369. 50 dollars per motor? 50 dollars for the first, and I think the others were to be 45 dollars.

5370. On every motor? Yes.

5371. Mr. Poole.] Has Mr. Rowan any arrangement with the Government to perform any work at all at Randwick—to do anything for the Government Sawing at Randwick.

Randwick—to do anything for the Government Service at Randwick? He is making an experiment with the electric light. He offered to show that the electric light was economical and efficient for working in the running shed at night; and the Government agreed to provide him with motive power, but he has to

do the rest at his own cost.
5372. And if he succeeds? It is a question of cost. If he shows that it is cheaper to use the electric

light, I have no doubt the Government will entertain it.

5373. If it succeeds, will not Mr. Rowan be paid for his outlay at Randwick? I do not think so.
5374. What kind of motive power are you finding for him? I took the motor out of the little Kitson car.

Mr. Frederick Davey called in and further examined:-

Mr. F. Davey. 5375. Chairman.] Since you were before the Committee last week have any accidents occurred with the compound motors? Yes.

21 Oct., 1884 5376. What engines have broken down? The last new one, No. 74.
21 Oct., 1884 5377. What was the cause of its breaking down? It was the construction of the thing was not right; it

was not strong enough to bear the resistance.

5378. What parts have been broken? It is now being taken to pieces; we have hardly got to the extent

of it yet.

5379. How long will it take to effect the repairs? I cannot tell; I do not know the extent of the damage yet. The men have been a day and a half pulling it to pieces.

5380. What do you think it will cost to place it in proper order? It would be difficult to say.

5381. How many men are employed upon it? Two fitters and two labourers will be two days taking it to pieces; then there are the boiler-makers; they might be a week.

5382. Then two fitters and two labourers will be two days putting it together again? More than that.

5383. How long will it be before it is put in traffic again? A fortnight or three weeks perhaps.

5384. Can you give the Committee any idea of the cost, roughly? When the boiler-makers begin you never know when they will stop.

never know when they will stop.

5385. Is there anything wrong with the car? Not with that car. The principal part that is wrong with this motor is that the saddle that carries the boiler has given way. That has sprung the sides out, and it has sunk as far as the axle. It could not get any further.

5386. Was it unsafe to run? It could not run.

5387. The frame is bulged out? Yes; it wants taking to pieces and putting together again.

5388. Is any other compound motor damaged besides 74? No. 70 the first that came is in for an over-

5389. How long is it since she was in the repairing shop? She came in this day week; she has been in a week.

5390. Since you were before this Committee? Yes.

Mr. F. Davey.

5391. What was the nature of the repairs required? General repairs. The valve gear is out of order, and the steam-pipes and pistons. We are going to turn the piston-rods and put in new glands.
5392. Does the Committee understand that motor No. 70 requires a complete overhaul? Yes. The

steam-pipes joints must be remade, the smoke-box door taken down to be examined and cleaned, and new glands put in all the spindles.

5393. What do you think is the cause of all these break-downs? No. 70 is not a break-down.

5394. The breakages? On account of the bad design; the unmechanical design causes them to shake to

5395. You are quite certain that no matter how often they are repaired they will go out of order on

account of the design? Yes, the principle is wrong.
5396. How long will it take from the date No. 70 was taken into the shop to have her ready for traffic

again? At the end of this week she will be ready—say ten days.

5397. What do you estimate the cost of repairs? £25 or £30, for labour and material.

5398. How long do you think she will run without requiring another overhaul? She might run perhaps another month or six weeks. She might shake herself all to pieces in that time. If there was nothing done to her she would run about a week.

5399. In any case in about a month she would require another overhaul at a cost of £25 or £30? she will have to get a temporary overhaul every month—fastening up everything, screwing up bolts, and

5400. Do the Committee understand that it will cost about £25 every month to keep this motor in repair? Yes, I dare say it will. Perhaps the next overhaul will cost more, because many parts will want renewing 5401. You have already stated that you do not have similar difficulty with the other motors—the We have not. Baldwins?

5402. How much do they cost to keep them in order? Some of them run for four months, and do not cost £10 the whole time.

5403. Can you inform the Committee whether, when the combined motors leave Randwick, they are supplied with any coke? Yes.

5404. What quantity? I do not know what the bunkers will hold; at the very least $2\frac{1}{2}$ or 3 cwt.

5405. These are the motors that run between Bridge-street and Redfern? Yes. They have always got a good fire in; that is another $1\frac{1}{2}$ cwt. in the fire-box.

5406. Is there a similar quantity allotted to the ordinary Baldwin motors? Yes. 5407. You are quite certain that both the combined motors and the Baldwin motors receive a like proportion of fuel when they leave Randwick? Yes, about the same; they always have a quantity of coal in the bunker when they start.

5408. If the Committee have been informed that the compound motors receive no allowance when they leave Randwick, that would be a mistake? Yes, certainly; I see it put in one of them every morning.

5409. A similar quantity for each motor? I do not know exactly how much each receives, but they

partly fill the bunkers I believe.

5410. Mr. Sutherland.] I think you said you were altering the principle by the repairs you are now doing. We are putting in new glands for the stuffing-boxes; what were in before were of no use; they were some one's patent, but they were no use.

5411. You are substituting what were in before with new ones? Yes, new glands.
5412. Of a different construction? The same as all engine glands are.
5413. Is that by Mr. Downe's order? Mr. Howe's order; I presume it is Mr. Downe's through him.
5414. Mr. Suttor.] You consider that the principle of these compound motors is altogether wrong, and that they will never work? Yes, I am more convinced than ever that it is wrong. If I had known what

I know now I would have spoken even more strongly than I did before.

5415. Chairman.] I presume that you refer to the break-down of Nos. 70 and 74? I do not call No. 70 a break-down; it is an overhaul. No. 74 has run about ten or twelve days.

5416. How long was No. 70 running? I could not say.

5417. When was she taken into the shop? About a fortnight ago. No. 72 was ready to go out when I went there, and when 72 went out I took 70 in for repairs. Since that 74 has come in with the framing

sprung and the boilers out of place.

5418. What is the name of the fuel-man at Randwick? I could not tell you his name. There is a coal-stage there, and they put in their fuel, and then a cleaner goes with them to put them on the triangle and turn them round, and before he goes he puts the fuel on, about $2\frac{1}{2}$ cwt.

5419. Is it considered any person's duty to allot the coal to them at Randwick? Of course; they are

not supposed to have a fireman, but they have a man to take them out, and this man's duty is to fill the bunkers with coal or to put coal in. There are four men to the four combineds.

5420. You are quite certain that an equal-proportion of fuel is given out to both the combined and Baldwin motors? Yes.

Baldwin motors? Yes.
5421. You have seen it being put on? Yes.
5422. Mr. Sutherland.] I think you said there is a man for each combined motor;—who goes out with it?
Yes, every time it leaves Randwick down to Sydney.

That man goes to Moore Park with them? Yes.

1 see, every time it leaves Randwick down to Sydney.

5423. That man goes to Moore Park with them? Yes.

5424. What time does that man get for that;—what time does he charge for? A quarter of a day, I suppose. That does not come under me; it is in the running department. I do not see how they can charge it less than a quarter of a day, if charged at all.

5425. Then if there were fifty combined motors there would be fifty men that would have to go out with

them in the same way? Yes.

WEDNESDAY, 22 OCTOBER, 1884.

Present:—

Mr. CHAPMAN, Mr. POOLE,

MR. TEECE. MR. SUTHERLAND.

SYDNEY SMITH, Esq., IN THE CHAIR.

Mr. Frederick Davey called in and further examined:—

Mr. F. Davey. 5426. Chairman:] When you were before the Committee yesterday, I asked you a question regarding the quantity of coal supplied to the different motors at Randwick. Have you since had an opportunity of 22 Oct., 1884. ascertaining the system pursued in regard to the coaling of each class of motor? Yes.

5427. What quantity is each style of motor supplied with before leaving Randwick every morning—the combined and the Baldwin? When there were two combined motors running each had three bags of coke tetched by a special engine from Moore Park, and the man that fetched it had to sign for it; his name is Joseph Dana; he is now a shunter at Randwick. Now coke has been stopped and coal taken name is Joseph Dana; he is now a shunter at Randwick. Now coke has been stopped and coal taken—what we call natural coke or Bulli coal. It is taken from the coal-stages. Steam is got up by that through the night, which takes about $2\frac{1}{2}$ cwt., and there is about $2\frac{1}{2}$ cwt. put in each bunker every morning for them to leave Randwick with. That is done to comply with the regulation that no driver shall leave the shed without his engine being fully equipped with coal, water, and stores generally. That is sufficient to carry him to Bridge-street and to the Railway. The Baldwin engines are treated in the same way, only that the big engines will take perhaps $3\frac{1}{2}$ cwt., the medium class about 3 cwt., and the small class about $2\frac{1}{2}$ cwt.; and of course steam is up in them, the same as in the others. 5428. Then both classes of motors are supplied with similar quantities of coal? The 9-inch class of engine, the same size as the combined, takes about the same quantity of coal to start with—about $2\frac{1}{2}$ cwt. 5429. Have any combined motors broken down since you were here yesterday? Yes, one broke down last night; she got off the road anyhow.

last night; she got off the road anyhow. 5430. What number? 71 I believe.

5430. What number? 71 I believe. 5431. What was the nature of the damage? In crossing the points at Bridge-street yard, by some means or other one part of the motor took one line and the other the other. That was while backing down the yard.

5432. What was the cause? After the rain the points might be choked.
5433. That would occur with other motors as well? It did not because they had been over the points

5434. Was any person hurt? There was no person hurt.

5435. Was there any approach to an accident? If the driver had been in his ordinary position—if he had had his feet where they generally are—he would have been hurt and dangerously crushed. The frame and the boiler came round and burst the side of the cab and bent the stay-plates.

5436. Had the driver been in his proper position he might have been seriously hurt? Yes, ha stood where he generally stands, but, looking back, he happened to have his feet the other way. 5437. An accident like that could not occur with the Baldwin motor? No. 5438. Do you consider the liability to this accident as a defect in the design? Yes, most decidedly.

5439. Mr. Poole.] Did you notice particularly the state of the road? No, I have not been there since. 5440. You do not know whether the road just at that part formed a double curve, so that the bogic frame

of the motor would be on one curve and the bogie frame of the car on another? The car bogie went on the right road and the engine wheels of the bogie of the motor went on the wrong road..

15441. Was it a double curve? No, I do not think so. It was on one of the roads going into the yard. 5442. Mr. Sutherland.] Did I understand you aright to say that when the two combined motors were working there was a special engine that brought coke from Moore Park to Randwick to supply these two motors? Yes, there was no coke delivered at Randwick; it came from Moore Park; an engine was sent specially for it.

5443. The engine was sent specially every day for coke for these two combined motors? Yes. 5444. And if I understand you properly that is charged to the Randwick shed? The Randwick man signs for it, not the driver of the motor.

5445. It is then put down to the Randwick shed, not to the motor that gets it? I could not say what it is charged to, but I know the man that fetches it signs for it, not the driver that uses it.

5446. You say that now, since there have been four combined motors working, they are supplied with coal, not with coke? Yes.

coal, not with coker res.
5447. Or, in other words, since this inquiry has been going on, they have been supplied with coal; the special engine has not been sent to Moore Park for coke for them, but they are supplied with coal from the coal-stages at Randwick, and that coal is taken in for the use of the works at Randwick? No, for the motors that come to Randwick in firing up in the morning. That is charged at so much per motor, but does not appear in the driver's sheet. It is entered in the night foreman's book, so many bags of coal for such a motor; the driver does not sign for that. The driver's sheet does not show the amount of fuel that is on the motor when he takes charge in the morning. that is on the motor when he takes charge in the morning.

5448. Mr. Poole.] He simply signs for what he gets during the day? Yes, when he is in service, when

he first gets hold of the car.

PURCHASE OF RAILWAY ROLLING STOCK.

APPENDIX.

[To the evidence of Charles A. Goodchap, Esq., 3 September, 1884.]

[To the evidence of the Honorable Geoffrey Eagar, 16 September, 1884.] В.

The Under Secretary for Finance and Trade to W. P. Woolcott, Esq.

The Under Secretary for Finance and Trade to W. P. Woolcott, Esq.

Sir,

The Treasury, New South Wales, Sydney, 5 June, 1882.

Referring to your appointment by the Minister for Public Works as Collector of the rents on the property at Pyrmont, resumed for public purposes, I have the honor, by direction of the Colonial Treasurer, to inform you that, as a Collector of Public Revenue, you are required to furnish the guarantee of either the Victoria Life and General Insurance Company or the London Guarantee and Accident Company (Limited) for the sum of £500, personal bonds not now being accepted by the Government.

In the cash book which has already been supplied to you it is requested that you should enter every sum received on behalf of the Government, for which you must give a printed receipt out of a book of receipts with which the Government Printer will furnish you. The particulars of such receipts must be fully and carefully entered on the butts of same.

Your collections must be lodged daily in the Bank of New South Wales to the credit of a Public Account opened in your name as a Government officer. Payments therefrom, by crossed cheque, in favour of the Colonial Treasurer, must be made to the Treasury on the 8th, 15th, 22nd, and last day of each month, unless any of these dates fall on a Sunday, when the payments must be made on the day following.

I enclose form of receipt-voucher which you are to use in making these payments. A supply of the forms can be obtained at the Government Printing Office.

I also enclose for your guidance a copy of the Audit Act of 1870, and circular issued from this Department relating thereto, together with a copy of Instructions to Collectors of Public Revenue, published in the Government Gazette of 27th August, 1869, which you should carefully peruse. From these documents you will see that you require to furnish monthly attested accounts to the Auditor General, with whom you had better place yourself in communication on the subject.

You will be good enough to furnish me, at

I have, &c., G. EAGAR.

P.S.—The guarantee referred to herein will be effected by the Treasury on your behalf, and application made to you for payment of premium in due course.-G.E.

[To the evidence of W. P. Woolcott, Esq., 16 September, 1884.]

MEMORANDUM of Agreement made this day of May, 1884.

To let and take.—Premises, unoccupied, portion of Atlas Works; situate, Pyrmont; rent, £2 per week, payable monthly, for the term of a weekly tenancy, to be computed from 12th May instant. Not to assign or sublet the whole or any part without leave. To leave premises in as good repair as at present. Proviso for re-entry by lessor on non-payment of rent, or non-payment of insolvency. performance of covenants, or in case of insolvency.

CARSON WOODS. HON. COL. TREASURER, Landlord.

[To the evidence of George Cowdery, Esq., 23 September, 1884.] D 1.

REPORT OF COMMITTEE ON AUTOMATIC FREIGHT-CAR COUPLERS. From the "Railway Review," Chicago, 21 June, 1884.

Your Committee appointed to make a report on automatic freight-car couplers would respectfully submit the following: We have sent our circulars to all representatives of the different car departments, embodying the following questions :

1. In your judgment would there be a large saving to the railroads of the country by the adoption of a standard automatic coupler?

Would the adoption of such a coupler be safer for trainmen?

Is it practical or desirable to adopt such a coupler for all new construction or renewals?

If so, will you please make any suggestions which may occur to you as to the best methods to secure these results? Which in your judgment is the simplest and most economical freight-car coupler in service, all things considered?

5. Which in your judgment is the simplest and most economical freight-car coupler in service, all things considered?
6. Are there any practical difficulties in the way of adopting a standard automatic coupler?
7. If so, please say what, in your judgment, they are?
8. If you were asked to adopt a standard freight-car coupler for your road, what one would you select?
We have received twenty-four replies, twenty-two of which have answered in the affirmative and two in the negative to the first three questions. Twenty-two have answered "No," and two "Yes" to the sixth question. There are a variety of opinions in answer to questions 4, 5, 7, and 8.

Your Committee have given this subject careful thought, and have experimented with a large number of draw-bars during the past year, and we have also witnessed tests of the various draw-bars made at Saratoga. We have carefully examined all of the models which have been presented at this meeting, and we find such a similarity of principle involved in various ones examined that we would suggest before their adoption they would be referred to the Eastern and Western Railroad Associations for their decision as to the validity of the patents.

Our classification of the various draw-bars are as follows:—

Our classification of the various draw-bars are as follows:—
Worthy of special mention:—Archer, Cowell, United States, Janney, Ames, Mitchell, Wilson and Walker, Conway-

As meritorious: -Gifford, Granger, Bechard, Pease and Sankey, Hilliard, Hitchcock, Prescott, Marks, Howe, Union, Perry, Burrell.

We have also examined the Quakenbush, Life and Limb Protecting, Lancaster, Smillie, James Horseley, Barnes, M'Keen, Stebbens, Williams, Skinner, New Era, Blanden.

In conclusion we would say that we realize the importance and magnitude of the work which has been given us, and we would therefore urge upon the members of this association the importance of thoroughly discussing the merits of car

We think the subject is one which should not be passed over slightly, and think that the different roads we represent we think the subject is one which should not be passed over slightly, and think that the different roads we represent and the public at large demand of us a thorough investigation as to the best coupler and prompt action in recommending its adoption. We would earnestly request that the association appoint a committee of experts to be present at the trial or hearing of the different railroad commissions, or any trial ordered by the executive committee of the association.

Respectfully submitted.

J. W. MARDEN,
F. D. ADAMS,
R. C. BLACKALL,
Committee.

(From "The Railway Review," June 21, 1884.)

Another meeting of car-builders has come and gone, and still the freight-car coupling question is unsolved. This would furnish strong ground for censure were it not that the members of the Convention gave evidence at this session of appreciating the folly of continued procrastination, and that they even went further than this and took a long step forward in an agreement upon a definite plan which will doubtless result in decisive action. As will be seen by our report of the proceedings elsewhere, the association agreed upon the appointment of a committee of experts who shall take up the whole question of car-couplers. This agreement will not be acted upon until it is assented to by the railroad companies represented in the association, who will be expected to pay the expenses of the committee, but we are confident that this assent will be obtained, and that the plan will be carried out. that the plan will be carried out

that the plan will be expected to pay the expenses of the committee, but we are confident that this assent will be obtained, and that the plan will be carried out.

'Under this plan some leading difficulties will at once disappear. For instance, there will be an energy at work in one direction untrammeled by other requirements; a perfect inquiry into the merits of all couplers is impossible with the carbuilders, who have their daily duties to attend to. Again, the car-builders will be relieved of the annoying and entangling questions of conflicting patent-rights, and of imputations of favoritism, venal or otherwise. The determination of the best coupler or couplers will rest with an agency entirely independent of the Car-Builders' Association, because paid for by the railway companies direct. Of course the value of such determination rests upon the personnel of the committee appointed to investigate, and in this regard the association has made an excellent selection. The name of Mr. Forney, who was named for the place, was suggested by The Review some weeks ago, and the well-known theoretical and practical acquirements of that gentleman constitute assurance that the duties which it is proposed the railways shall assign to him will be well performed.

Accordingly, we see that at last the car-coupling problem is to be properly attacked. And it is getting time. The public are becoming more and more clamorous for reform in this regard. Massachusetts, as we have seen lately, provoked at delay, this year takes the matter into its own hands, and on all sides evidence accumulates that further procrastination will not be tolerated. Humanity, economy, and policy demand that change be made in present methods of freight car-coupling, and for this reason we urge railways to support the car-builders' plan of placing the question in hands of independent experts. Reform will be somewhat hard, but we refer to the standard-time reform, even though it is hardly a parallel case, to show how much may easily be accomplished if the e

THE NATIONAL EXHIBITION OF RAILWAY APPLIANCES—COUPLINGS, SIGNAL ARRANGMENTS, ETC. DARLINGTON, OCTOBER, 1882.

This is to certify that Messrs. Thomas and Cowdery, of Sydney, New South Wales, exhibited in Class 1 a Double Automatic Coupling, and in consideration of the merit thereof this First Class Certificate is hereby awarded.

306, City Road, London, E.C.

FRED. W. EVANS, Joint Secretaries.

[To the evidence of Carson Woods, Esq, 24 September, 1884.]

(From "National Car Builder," New York, July, 1884.)

CHILLED CAST-IRON WHEELS.

In respect to breakages it does not appear, so far as evidence goes, that chilled wheels made of the best irons are any more liable to break than steel-tired wheels.

, (From " New York Railway Gazette," July 4, 1884.)

BREAKING OF STEEL TIRE WHEELS.

THE Imperial Railroad Bureau of the German Empire has collected statistics of the breakages of tires, which, in view of the growing use of steel-tired car wheels in this country, will be of interest here? It seems that on the German system the number of tires broken in 1883 was:—

Miles worked. 21,883 22,149 Six winter months, January to April, November and December Six months, May to October 1,937

Per 100 miles of road this gives 12.2 breakages in the colder half of the year and 8.8 in the warmer half.

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By these breakages there was some interruption to the operation of the roads caused in 281 cases, including eighteen derailments. From those cases where the locality on the road was known where the breakage occurred, it appears that per 100 miles of road with different kinds of substructure the tire breakages were as follows:—

Per 100 miles of track on-No. tires broken. Wooden cross ties 7‡ Iron longitudinal sleepers..... 23

The inference from this is that tires break chiefly at bad joints, and that the joints are supported best on longitudinal

The report shows that 76 per cent. of the breakages were on spoke wheels, and only 21 per cent. on disk wheels; but in the absence of information as to the proportion of disk wheels running, this is not significant. No less than 40 per cent. of the tires broken were of puddled steel, and 84 per cent. of these breakages were due to defects in the material and to its imperfect welding.

E 2.

The United States Car-Co., 48, Congress-street, Boston, Mass., 13 Feb., 1883.

Messrs. Carson Woods, Rich, and Co., Carson Woods, Esq., Sydney, N.S.W.,-

Gentlemen,

We shipped the screw-lever dump and coal car to you early in January, via barque "Julia," L. Jordan, master. We also sent several pieces of castings without charge, which were duplicates of what were with car, to replace any that may get broken in transit via vessel. We sent bill to Messrs. Richard Irvin and Co., New York City, as requested by you, and received a prompt remittance for balance due for car. We are meeting with grand success here with our cars; the one we shipped to you was loaded and dumped, and found to work perfectly. We trust you will see personally to it—that the car is put together in a good workmanlike manner—then satisfactory results will follow, and one man be able to dump car loaded with 20 tons in 30 seconds with ease. The past week a Pennsylvania coal road placed an order with a reliable car-builder for eighty our patent screw lever cars. Since your Mr. Woods left here we have sold our patent covering the entire Dominion of Canada to some Montreal men, and they are forming a rolling-stock company, with \$650,000 capital, to build our style dump-cars, and lease them to Canada Railroad Companies. Let us hear from you, and of your success with the car after its arrival. Yours, &c.,

Yours, &c., . FRANK BROWNELL, Treas.

No. 2.

J. E. Rose, Esq., M. of T. M. & C. Railway Company, Cincinnati, Ohio,—

Gill Car Manufacturing Company, Columbus, Ohio, 3/1/82.

My dear Sir,

It affords me pleasure to answer your recent inquiry. We have in many particulars improved the United States Car Company's dump, and the C. H. V. & T. Railway Company have adopted it, and are getting a considerable number of them. We are building fifty for the Cleveland Rolling Mills Company. They give entire satisfaction where used, and we would be happy to send you one on trial if you will probably be in the market for some of them. Early next week we expect to send your neighbour, Mr. John Carlisle, one of them, up on the Chatteroi Railway, and should be pleased to have you make inquiries of him when he has tried it. The other day one man dumped six of them in 11 minutes. One of its good points is the ability and ease with which it can be dumped on either side, and all at once or slowly, and along a considerable distance, or part on one side and part on the other.

We have so changed the construction as to admit of the master car builders' standard axle and box, and it is the opinion of the writer, any road, old or new, would find very great economy in its use, either for building or distributing cinders and ballast, or anything that can be dumped.

H. R. GILL, Treas.

A. F. Thayer, Esq.,-

Boston and Albany R.R. Co., Car Department,

Dear Sir,

In answer to your question as to what is my opinion as a practical car-builder of the merits of the dump and coal car of the United States Car Co., I would reply as follows:—

First. I have given the matter the fullest examination, and have proved its practicability for such purposes as it is designed, and in my opinion it is certain to come into use rapidly on account of its simplicity and positive merit. There is no complication about it, which permits it to be easily worked by an ordinary person (brakeman), and requires only one man to operate it. At a recent trial of the car upon the Boston and Albany R. R. one man dumped twenty-five tons of gravel from one car in less than 2 minutes, and in another instance two car-loads of coal in 3 minutes, and had the car ready to return. The Boston and Albany R. R., Co., as I understand, have purchased the right to build these cars; and I think will do so as soon as practicable for their own use.

Second. The construction of the car body is so near alike any ordinary car that cars already built may be changed and this patent applied at a small cost.

In my opinion the car cannot be surpassed for the easy bandling of coal in 3 minutes.

this patent applied at a small cost.

In my opinion the car cannot be surpassed for the easy handling of coal of any kind, also iron and every kind of ore; and it is especially adapted to handling coke, gravel, sand, ashes, logs, railroad ties, stone, and railroad iron, or anything of like nature used in construction or repairs, and ballasting, filling, of trestle-work, and the like. In my opinion in the very near future this car will be so generally adopted that we shall rarely see the kind of car now in use, for these cars will substitute on account of the immense saving in cost of labour. The principle is that of the common horse coal and dump cart applied to railroad uses, and it would seem as reasonable to expect coal dealers to ask their men to return to the old method of shovelling out their coal as it will in the future to expect coal and railroad companies to unload their cars in the present expensive way. It will give me pleasure to show and explain the working of this car at any time we may have one here, or give any information I may be able to at any time you may call on me.

Yours respectfully,

Yours respectfully, F. D. ADAMS, M.C.B. Boston and Albany R.R.

No. 4.

Simeon Brownell, President.

Joliett Steel Company, General Superintendent's Office, Joliett, Ill., 8 July, 1882. U.S. Car Co., Boston, Mass.,-

Dear Sir,
In regard to your inquiry as to the workings of the train "Screw Lever Dump-cars," I would say they are now

working quite satisfactory.

I think your device is quite practicable, and in time this style of car will come into general use for handling ore and coal or such material as can be dumped in this manner. I think it is an improvement over a former style of dump-car.

We have twenty-five cars of your patent, carrying 20 tons of ore per car. We find there is no trouble in one man handling or dumping them to advantage.

Your struly,

We find there is no trouble in one man Yours truly, H. S. SMITH, General Superintendent.

APPENDIX.

No. 5.

Simeon Brownell, President; The U.S. Car Co., Boston, Mass.,—

Rock Island and Mercer County Railroad Company, Rock Island, 19 July, 1882.

Dear Sir,

In answer to yours of even date, the thirty-five screw-lever dump-cars you had built for us at Wells, French, & Co.'s shops, Chicago, Ill., M. Van Wormer patents, are here and in active service, making daily trips to our mines and return, a distance of 26 miles. I have examined them carefully. The dumping device is simply perfect, one man with ease dumping 100 tons of coal, five cars (20 tons each), in the remarkable short time of 9 minutes. As to durability I think it is the best and strongest 20-ton car I ever saw. Your dumping device is strong, simple, and durable, and I think far ahead of any dump-car in use. I had been thinking of and experimenting for four years on a side dump-car, and you can imagine my feelings when confronted with the very thing I had tried to obtain.

Have had sixteen years experience as M.M., and have done my best to find a defect, but I give it up, and acknowledge its the best car I ever saw—perfect. One car of your patent stood fifty-two hours loaded with full 20 tons, and it could not be noticed that the car had gone down in the centre \$\frac{1}{4}\$ of an inch; that I consider remarkable. We want not less that 100 more of your cars, and I have recommended our President (Mr. P. L. Cable) to order them immediately. You have without a doubt made a ten strike.

a doubt made a ten strike.

As you have a dump-car which its merits alone are bound to bring it into general use on all roads where dirt, coal, ore, Very truly yours, J. H. PARK, M.M., or gravel are used, will take pleasure in answering all inquiries.

R.I. and M.C. and R.I. and Peoria R.R's.

No. 6.

Simeon Brownell, Esq.,

President of the U. S. Car Co., Boston, Mass.;

Rock Island, July 21, 1882.

The cars that were built for this Company under your patent have arrived, and have been placed in service, and to all appearance are a thoroughly well built car, and so far as its dumping qualities have been tested we are inclined to pronounce them a success, and I think is a car that will come into general use for the purpose for which it is designed.

Very respectfully yours,

H. B. LUDLOW,

Superintendent Cool Valley Mining Co.

No. 7.

Columbus, Hocking Valley, and Toledo Railway Company.

Simeon Brownell, Esq., President U. S. Car-Co., Boston, Mass.,—

Nelsonville, Ohio, 4 August, 1882.

The eight cars are working all O.K. I have examined them over carefully, and pronounce them the strongest car ve in our yards. The repairing is much less than on our own. I saw to-day one man dump full 20 tons of slack with They are a car that we ought to have more of. I hope the balance will be put in as good shape as these, for we need Yours truly,
J. STONEBURNES them badly.

General Car Repairer, C., H.V., & T. Ry. Co.

Pennsylvania, Slatington, and New England R.R. Co., Office of the Chief Engineer, New York, 4 August, 1882.

To the President and Directors of Pa. S. and N.E.R.R.,-

Dear Sirs,

We have examined the side dump-car of the U.S. Car Co., and beg leave to report as follows:—The car was partly filled with coal (about 8 tons), and was upon the treatle of the N.Y. Lake Erie and W.R. at their coal pockets at the west end of the Bergen tunnel. The Agent of the U.S. Car Co. readily dumped the contents of the car in about forty seconds, and could have as easily dumped the car, if it had contained its full load of 18 tons. The car worked perfectly, and we have no hesitation in recommending its adoption on your road. We consider it a great saving in time and labour in discharging contents, and thus a less number of cars will be required to do the same amount of business, and saving a large sum in first cost. The car can be used for any kind of freight, which is not the case with the present kind of hopper bottom cars, so that the return freight now lost to hopper bottom cars will be earned by cars having these attachments, and the entire cost of the car will be saved in a short time in the return freights alone. This car is a much stronger car than the hopper bottom coal car, for it has four centre stringers that go the entire length of the car, through the centre where the strength is needed, and have also four truss rods which add greatly to the strength of the car.

The attachments by which the car is inclined, and the contents unloaded are very simple, and can be easily operated by any common workman, as there is no complicated machinery about it to get out of order:

We have no hesitation in saying that it will be a great saving in dumping any kind of materials that can be dumped, and a great saving in time and money.

We have no restrain in a sorting and a great saving in time and money.

We are satisfied the car will do all the Agent of, the Company, Mr. A. F. Phayer, says it will do, and we have no hesitation in recommending its adoption on your road.

Very respectfully,

A. B. PAINE,

Chief Engineer

Chief Engineer. F. M. WARD, Supt. of Bridges.

No. 9.

Columbus, Hocking Valley, and Toledo Railway Company, . Nelsonville, Ohio, August 24, 1882.

Simeon Brownell. President, The U. S. Car Co., Boston, Mass.,

'Sir. The "Dump Cars" Mr. Van Wormer fixed over for us at Gill Car Co.'s Works are here in active service; they were loaded full of slack, all we could get on, and they stand up under a load nicely, and the dumping device is all we can desire one man dumping them with ease. I liope all will be put in the same good condition, as we need just such a car daily. Vare using these in making new track with fine slack.

Yours, &c., CHAS. E. SCHAFF,

General Yard Master, C., H.V. & T.R.C.

No. 10:

Mr. S. Brownelk,

President, United States Car Co.,-

Melrose, Mass., October 21, 1882.

Dear Sir,

We have used your side dump-cars at our coal-yards, and they have given us the greatest satisfaction; and any one can readily see the immense saving made by them in handling coal. I will say for myself that I am ready at once to put up trestles at my yards, and will do all that I can, as I know every other coal dealer will do, to have your car come into general use by all the railroads that handle coal, it being for our interest as well as for the railroads to have it done, and as specifly as possible. I liave paid a great deal of money for demurrage on vessels that have been kept here by delays in unloading cars, which your cars entirely do away with, as we easily unload 18 to 20 tons in a minute or two each.

Yours truly,
SETH E., BENSON.

The Commissioner for Railways to C. Woods, Esq.

Department of Public Works, Railway Branch. Sydney, 28 August, 1883. Sir,

In reply to your letter of the 27th instant, having further reference to the proposal made by you with regard to the rights of the dump-car patent, and in which you state that you are prepared to build two hundred cars in the Colony, inclusive of the patent rights, for the sum of £190 each, I have the honor to inform you that I have submitted the above proposal to the Honorable the Secretary for Public Works, and he approves of the acceptance of the same, on condition that the cars are delivered complete on the Railway line, Sydney, at the price named, and that they are in all respects equal to and of the same weight as the one now in possession of the Department. It is a further condition of the acceptance of your offer, that after the delivery of the above cars is completed the Government are to have free and undisturbed use of the patent rights for New South Wales for all cars they may build or have built by private firms.

I have, &c.,

CH. A. GOODCHAP;

Commissioner for Railways.

P.S.—You will have to enter into a bond for the due fulfilment of your contract, and to assure the Government in the undistructed possession of the patent right so far as the Government Railways of New South Wales are concerned; the cars to be delivered-50 in nine months, and the remainder in lots of 50 at three, six, and nine months within the succeeding nine months.—CH. A. G., 28/8/83.

E. 4.

From the "Evening News," Sydney, 30: June,, 1883. DUMPING CARS.

MR. CARSON WOODS, of the firm of Carson Woods, Rich, and Co., of this city, has recently imported into the Colony a screw lever dump-car from America, and it has lately been subjected to several trials at Darling Harbour and Redfern. Yesterday an official trial was made of it at the latter place, in the presence of Mr. Read, Traffic Manager; Mr. Scott, Tocomotive Engineer: Mr. Middley Tocomotive Operating Operati Yesterday an official twil was made of it at the latter place, in the presence of Mr. Read, Traffic Manager; Mr. Scott, Locomotive Engineer; Mr. Midelton, Locomotive Overseer; and several other gentlemen interested in such matters. The car may be briefly described as a "tip"-car, and one man can work it so effectually as in a couple of minutes, by the turning of a handle, to eject the whole of its contents on either side of it. The screw-lever works in a cog-wheel upon the end of a shaft. running the whole length of the car, and upon this shaft are two chain-wheels, one over each truck. These wheels have sockets, in which the chains fit. Side-bearings, levers, and latches also form an important element in working the dumping, or "tipping." Attached to the side-gates of the car is an arm that extends under the car, and strikes upon the truck as the car is dumped, thus opening the latches, which are thrown back by means, of weights in the centre of the car. The rockers are of the same width as the trucks, and the chains are kept in position by the wheels, which have flanges upon them for that purpose. Speaking of the car generally, a high authority on such subjects in the United States considers it must come into use rapidly on account of its simplicity. There is no complication which prevents its being easily worked by an ordinary person. At a recent trial of the car one man dumped 25 tons of gravel from one car in less than 2 minutes, and in another instance two car-loads of coal in 3 minutes. The construction of the car is so near like any ordinary car that those already built may be changed, and the patent applied at a small cost. The cars run upon two sets (each of four) bogic wheels, and have a capacity of from 20 to 30 tons. That tested yesterday was of the former dimensions. It was placed on one of the lines near the Botany-road. It was full of gravel, and when it was tipped, or dumped, more than half of this shot out on to the ground, until' it was piled up so high that the balance (about a third) did no save, especially in the case of coals, coke, timbers gravel, &c.; or in fact, almost anything that is not of a breakable character. The makers of the car are the Gilbert Carriage Manufacturing Company, of Troy, United States. The trial of sesterday was considered very satisfactory, and no doubt before very long our railways will be well supplied with these patent cars, as they are called, although in appearance they are very much like the ordinary trucks.

[Ordered to be appended to Mr. Goodchap's evidence of 18 September, 1884.]

The Commissioner for Railways to The Locomotive Engineer.

It was stated to me at the Committee on Rolling Stock, in fact I was asked if I had seen a plan of a truck made by one of the officers combining light tare and large carrying capacity, attention; if it exist I should like to know something about it. I am not aware that this plan has been brought; under my

18/9/84.

THE Commissioner informs me that he was asked by the Committee appointed to inquire into the purchase of Rolling Stock,

whether he had seen a plan of a truck made by one of his officers combining light tare and large carrying capacity.

Neither the Commissioner nor myself have seen any such plan, and if it is being prepared by an officer of the Department it is probably under your directions. The Commissioner wishes to have full particulars regarding this matter. I shall be glad, therefore, if you will submit the plan—should there be any such—at once with your report thereon.—W. Scott, 22/9/84. The Locomotive Overseer.

All particulars are given in the papers on coaling engines—L.E., 83/270, Comr., 82/10,292; and other papers, Comr., 82/18,558, L.E. 82/3,699.—J.M.

82/18,558, L.E. 82/3,699.—J.M..

The plans referred to were all prepared in our Drawing Office. The first, No. 754, was made in December, 1882, tracings of which were sent to Commissioner with my report, E.E., 83/270. The finished drawing of double bogic waggon was completed in October, 1883, and the drawing of the 4-wheeled waggon is just now done, all of which I think you have seen in progress in the office. A reference to the papers will make matters clear no doubt.—Thos. Mediators, 22/9/84. L.E.

Comr., 83-6,056.

The report referred to is one that was submitted by Mr. Midelton during my absence in England, respecting the coaling of engines. It was designed to carry coal-boxes, but in the report no reference was made to its being of light tare, combined with large carrying capacity.

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APPENDIX.

The finished drawing which Mr. Midelton alludes to as just now being completed has never been brought under my attention. It is true, I saw a drawing on one of the draftsmen's boards, but was never consulted in any way with reference to it, and I was therefore quite unaware of what was being aimed at, in the preparation of the drawing. As before stated, the whole matter was done without any reference to me, and this is only one instance of many where I have no control over the work performed in the Drawing Office.—W. Scott, 23/9/84.

I was not aware that the question asked of me had reference to the waggon proposed for coaling engines. I understood that it was a design made as I understood by one of the subordinate officers, neither Mr. Scott's nor, Mr. Midelton's name being mentioned. Had I known that reference was being made to the truck for coaling I should have replied differently. I may say here that when Mr. Midelton brought his scheme for coaling engines under my attention (and this was during the time Mr. Scott was in England), I thought very highly of it, and believe I so expressed myself. Indeed, I gave directions for its adoption—not necessarily including the truck, for that was to be dependent upon whether the 250 trucks already ordered for coaling purposes had been proceeded with—but the box system with the use of crane. I thought highly of the truck also, for although no mention is made in the report about the tare, I questioned Mr. Midelton on the subject and found that the tare was not excessive when the trucks could be used for general traffic; of course, when the boxes were in the truck that tare, when compared with the carrying capacity for coal, would be unfavourable.

After approving of Mf. Midelton's plan, I received a letter from Mr. Scott addressed from England, and he then spoke of a design for coaling similar to that of Mr. Midelton's (without knowing, I understand, that Mr. Midelton had a plan), and also of an elevated platform plan which he considered much superior; this made me hesitate about going on with Mr. Midelton's plan, at any rate for Eveleigh, and I thought it well to postpone final decision till Mr. Scott should return. In the meantime Mr. Midelton—in pursuance of his request that should his plan not be approved of for general application, it might at any rate be allowed to be tested at Goulburn—was allowed to bring it into operation at that station, to be applied more generally should it prove a success. I presume the plan of the truck (there were to have fifty of them for Goulburn) was being proceede

The design of the truck to which Mr. Midelton refers has only to-day been brought under my attention, although, as previously stated, I saw it on one of the draftsmen's boards. The drawing has only been completed and signed to-day upon my asking for it.

The whole work was got out without any reference being made to me, and I was consequently unaware of any effort that was being made to secure light tare. I have now for the first time examined the drawing, and so far as light tare and large carrying capacity are concerned, I do not see that it possesses any very exceptional features or advantages that would not necessarily accrue where iron framing was used instead of wood. Its weight is stated to be 4 tons 2 cwt. without side chains and springs, and its carrying capacity 7½ tons, but it must not be overlooked that the truck is without sides, and if these were provided of wood, the same as on D trucks, the tare would be about 4 tons 13 cwt. to carry 7½ tons, while our ordinary D trucks, with a tare of 4 tons 10 cwt., will carry 7 tons, so that it does not possess in this particular any very great advantage over our ordinary waggons.

The slightly larger carrying capacity is partly brought about by the trucks being 6in. longer and about 1 foot wider than our D trucks. The smaller tare is to be accounted for because the truck is made of iron framing instead of our heavy Colonial hardwood. The subject however of the use of iron in the construction of our goods-stock is one that I have not overlooked, but have had under consideration for some time, with a view to secure a reduction in the tare of vehicles, and I attach hereto copies of correspondence between Messrs. P. and W. M'Lellan and Co., of Glasgow, and myself, from which it will be seen that it is a matter upon which I expect to be able shortly to lay some definite proposals before you for the manufacture

of some stock upon this principle.

W. SCOTT, 25/9/84.

The Commissioner.

Messrs. P. and W. M'Lellan, Trougate, Glasgow,-

Gentlemen

20 June, 1884.

During my recent visit to England I ascertained that you had built some iron goods trucks for the Indian railways. I shall be much obliged if you will be good enough to favour me with particulars of these trucks, such as their price (delivered in Sydney), weight, carrying capacity, and any other particulars you may consider necessary to enable an opinion to be formed as to the desirability of introducing them on the railways of this Colony. I shall be glad if you can also inform me what has been the experience of the Indian railway people with regard to the use of these trucks, after having practically tested them, as compared with trucks with wooden sides.

W SCOTT I have, &c., W. SCOTT,

Locomotive Engineer.

Clutha Iron Works, Glasgow, 7 August, 1884.

W. Scott, Esq., Locomotive Engineer, Department of Public Works,

Railway Branch, Sydney.

We have the pleasure to acknowledge the receipt of your favour, dated 20th June, making inquiry with respect to the iron goods trucks we build for Indian State and other Indian railways.

In reply, we have to state that we are preparing drawings of these waggons, which we hope to have ready in time to send to you by next mail with the other information you desire. We may add that after many years' experience of these waggons upon the Indian railways the authorities now contract for no other description, as they appear to have entirely superseded those with wooden sides.

Thanking you for the inquiry,

We are, &c., P. & W. M'LELLAN.

[Ordered to be appended, 2 October, 1884.]

Mr. W. Scott to The Clerk of the Legislative Assembly.

Mr. W. Scott to The Cierk of the Legislative Assembly.

Department of Public Works, Railway Branch,
Locomotive Engineer's Office, Sydney, 22 September, 1884.

I have the honor to return herewith the evidence given by me at my last examination before the Select Committee on the purchase of Rolling Stock, and should be glad if the corrections can be made.

I enclose herein as promised copies of reports forwarded by me to the Commissioner, and a return of the number of D trucks at Eveleigh with the patent coupler.

W. SCOTT.

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As promised when being examined by the Select Committee of the Legislative Assembly on the 16th instant, I beg to state that the following D trucks are fitted with the patent couplings and are standing at Eveleigh:—

49 loaded with ballast.

14 empty.
5 loaded with old railway material.

68 Total.

W. SCOTT 22/9/84.

Dump-cars.

I inspected the dump-cars on the 1st instant with Messrs. Midelton and Bourn, and again on the 6th instant, and I observed the same defects as pointed out in Mr. Bourn's minute of the 1st instant. I enclose herein a minute from Mr. Midelton, stating that, acting upon instructions received from the Partiamentary Committee now sitting, he examined the cars, and that the majority of the axles were very defective. Upon receipt of this minute I proceeded to Darling Harbour and very minutely examined seventy-five of the bogies, and out of this number I had to mark sixty-nine axles as being defective, and numbers of them are quite unfit for our service. They have been forged out of scrap, the iron has not been properly worked, and bad flaws are visible both longitudinally and horizontally. They appear to be of such inferior workmanship that I consider; it will be necessary to submit (say) four of them to a test. These will, of course, be destroyed; and I have to ask your permission to make the test. If the axles comes up to the proper standard the cost should perhaps be borne by the Department; but in the event of their being found to be inferior the expense should be borne by the Contractor. It is stipulated that the metal work is to be manufactured in the Colony, but this has been imported from America.

The terms of the contract are that the 200 cars are to be built in the Colony; but this portion of the contract I consider is not being carried out, the cars being merely fitted together here, the various parts having been imported from America.

W. SCOTT,

W. SCOTT

The Commissioner.

8/9/84.

DUMP-CAR AXLES.

I was at Darling Harbour to-day, inspecting the new dump-cars, and also the pattern car, in accordance with instructions received from the Parliamentary Committee now sitting.

I am sorry to have to say that the majority of the axles I saw are very defective, and such that I would not allow to run on the road, and I recommend that one or two be tested before any car is allowed to run with a load. I also suggest that the Commissioner's attention be called to the matter after you have made an inspection of them.

The Locomotive Engineer.

I notice also that one of the head-stocks of the pattern car is badly fractured by buffing, and one of the bolster beams in bogie is sagged about \(\frac{2}{3}'' \), due to the weight on it.—T.M.

Memorandum from Mr. E. J. Bourn to Locomotive Overseer.

Memorandum from Mr. E. J. Bourn to Locomotive Overseer.

Sir,

Locomotive Engineer's office, Regent-street, Redfern, Sydney, 1 September, 1884.

In accordance with the Locomotive Engineer's memo., 84/1,669, 26/8/84, re new dump-cars, I beg to report that I paid a visit to the works of Mr. Carson Woods, Darling Harbour, on 28/8/84 for the purpose of inspecting cars now being put together, and I wish to bring under the notice of Locomotive Engineer that I found there is no provision made for the fixing of continuous draw-gear, the gear being fixed consists only of a short draw-bar hook, fixed with a voluble spring, washer and cotter. In this style I do not consider there is sufficient allowance of strength for the haulage of waggon, and they are very liable to break the head-stock when in transit.

The buffers as now fixed are also very weak, sufficient staying power not being provided to prevent even ordinary shunting against them, to stop the buffers from being knocked through or breaking the headstocks.

The draw and side chains are vory roughly forged and the links are not sound in the weldings, the safety-chain hooks are not in accordance with the drawing, and a large number of them are not sound.

The bogies are not to the sample of those previously supplied, more particularly as regards the working of the dumping chains. In the former ones there is a provision, made with an iron casting and a wheel, to enable the chain to work from an eye-bolt fixed on the inside of the sole-bar, whereas in those now being erected this is disponsed with, and the end of the chain is only fixed with a temporary piece of ½" round iron fixed with a washer plate and two nuts on the bottom side-bar of bogie frame. Several of these I examined and found that they were cracked in the corner.

On the 29/8/84 I met Mr. Carson Woods' foreman, as previously asked, and called his attention to the foregoing omissions and defects, more particularly to the continuous draw-gaer. He informed met that this could not be done without interferin

E. J. BOURN.

Dump-cars.

In accordance with your instructions I yesterday had the pattern dump-car loaded with 24 tons of rails and had it run backwards and forwards about 10 chains. I then measured the compression of the springs and found it to be only \(\frac{1}{2}\) an inch. I am however of opinion that it would not be judicious to run these cars with such a load, as I do not consider the bogic frames are sufficiently strong to bear such a strain.

The Commissioner.

DUMP-CARS.

WITH reference to the contract entered into by Mr. Carson Woods for the supply of 200 dump-cars, I have to report that in accordance with the terms of contract fifty of the cars should have been delivered on the 28th May last, but up to the present none have been handed over, and those that are now being put together cannot be accepted unless very material alterations are made in them. I enclose herein copy of Mr. Foreman Bourn's report.

W. SCOTT, 2/9/84.

The Commissioner.

Memorandum from Mr. E. J. Bourn to Locomotive Overseer.

Sir,

I beg to report for your information that, in conjunction with the Locomotive Engineer, I examined on the 6th inst. fifty-seven bogies of dump-cars standing on the Government Line at Darling Harbour, and found that sixty-nine of the axles were in a very unsatisfactory condition, owing to the iron not being properly worked together in a number of them, and in the remainder the iron is laminated through not being properly welded.

On the 8th instant I visited the works of Mr. Carson Woods and examined ninety-six bogies, and found that 101 axles were in a similar condition to those examined on the 6th inst.

There are still a number of bogies to examine, but their being covered with material prevents my so doing at present.

E. J. BOURN.

I have already said before the Parliamentary Committee now sitting that I would not allow one of these axles to run over our lines. I can corroborate what Mr. Bourn says.—J.M., 9/9/84.

REMOVAL

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APPENDIX.

REMOVAL OF DUMP CARS.

WITH reference to my memo., 84-1,806, of the 17/9/84, intimating that four dump cars had been removed from Darling Harbour to Eveleigh, for the convenience of the contractors, I have to report that five more of these cars were removed by Traffic Branch to the same place early yesterday morning. I may add that they were brought up before the receipt of your paper, directing that no more were to be received.

W. SCOTT,

To Commissioner.

Per D.C.M'L., 18/9/84.

DUMP-CARS REMOVED TO EVELEIGH.

I HAVE to inform the Commissioner that four dump-cars have been taken out of the builders' shops and placed at Eveleigh. They have not, however, been taken charge of by the Department, but have only been put at Eveleigh for the convenience of the contractors. Whilst they were being removed the brake-gear gave way, being fixed too near the ground; but I understand this is being rectified in the other cars.

Per D.C.M'L., 17/9/84.

The cars should not be allowed to travel on our lines without the question being first decided whether they can be accepted. No more can be received.—Chas. A. G., 17/9/84. Loco. Engineer, B.C.

Traffic Manager to see. It appears five more were brought up before receipt of Commissioner's directions above. Please return paper early.—W. Scott, 17/9/84.

' Memorandum from Mr. E. J. Bourn to Loco. Overseer.

Sir,

Loco. Engineer's Office, Regent-street, Redfern, Sydney, 11 September, 1884.

I beg to report for your information that four of the dump-cars recently put together by Mr. Carson Woods, at Darling Harbour, have been brought up to the Sydney goods siding this morning, but by whose authority I cannot say. During the shunting three of them were crippled by the brake-gear (being fixed too near the ground) coming in contact with the cross-rails leading into the paint-shop.

I have instructed examiner John Baker to mark them off, and not to allow them to be taken out.

These waggons have not been brought under my notice for the purpose of being passed as correct.

Will you please inform me how to act in this matter. Examiner Baker's report attached.

E. J. BOURN.

Urgent. Loco. Engineer, pro T.M., W.L.N., 12/9/84.

[Ordered to be appended, 2 October, 1884.]

Railway Age, 17 August, 1882.

Papers re cars to carry 30 tons freight.

"The feasibility of constructing freight-cars to carry the enormous weight of 30 tons of freight was favourably discussed at the master car-builders' convention, and a practical experiment has already been made on the Union Pacific road, a car containing 1,000 bushels of wheat having been run from Solomon City, Kan., to Kansas City. The peculiarity of this car is a central truck, by means of which it is claimed that all freight-cars can carry from 50 to 100 per cent. additional weight."

Traffic Manager to see.—B.C., 5/10/82. Another to Locomotive Engineer.—Ch. A. G.

Seen. It would certainly be a great saving if the carrying capacity of our trucks could be increased, and I have before suggested that the maximum weight of our open trucks should be increased from 6 to 7 tons. It rests entirely with the Locomotive Engineer to say what can be done in this respect.—W.V.R., 14/10/82. Commissioner.

I think the printed matter* refers to the "Cleminson system," or perhaps to a car with three four-wheeled bogies (one at each end and one in centre of car), but either plan would be an unwise one to adopt. I prefer either a four-wheeled vehicle, an eight-wheeled, or a twelve-wheeled vehicle, and the four and eight I prefer most of all. I am fully prepared to do as Mr. Read suggests, that is, increase the carrying capacity of our waggon stock without increasing the dead weight; and as soon as I can possibly put the work into the hands of a competent draftsman, I shall have much pleasure in showing you what I propose, and if we could adopt a central buffer and draw-bar (combined), this question could be most satisfactorily set at rest, I think, and also cover the present danger in coupling and uncoupling cars, &c.—Thos. Midelian, 19/10/82. The Commissioner.

Over a year has now elapsed since this question was mooted, and in the meantime tenders have been invited for the supply of rolling stock for five years. Mr. Scott has also made a visit of inspection to America and England, and in pursuance of my instructions has devoted his consideration to the question of lessening the tare of rolling stock. I should be glad to learn what is to be the outcome of all this in regard to the improvement of our rolling stock.—CH. A. G., B.C., 22/11/83. missioner.

Mr. Scott.

Minute from Mr. W. Scott to Commissioner.

Carrying capacity of Goods Trucks.

It will be seen by reference to my report on observations made by me during my recent visit to America and England that the question of the carrying capacity of goods vehicles engaged my particular attention. When in New York I called upon the Secretary of the Master Car Builders' Association of America, and obtained from him a report prepared by a Committee, appointed by that body, "upon the carrying capacity of freight-cars." Their report undoubtedly shows that there are many advantages to be gained by increasing, where practicable, the size of the cars, amongst which the following are the most important: the most important :--

Reduction in first cost. Saving in cost of repairs. Less dead-weight to load. Shorter trains and sidings.

Shorter trains and sidings.

Fewer couplings required.

Fawer brakes required.

The carrying capacity of the freight-cars in America had been generally increased from 10 to 20 tons with advantage.

Evidence was then obtained, and the question considered as to the advisability of increasing the size of the cars so as to admit of their carrying 30 tons; and the Committee, finding the weight of testimony much in favour of the larger cars, recommended that a few, with a carrying capacity of 30 tons, should be built as an experiment, the result of which I am anxiously looking for. I gather, however, from an article in the Railroad Gazette, of 5th October, 1883, that sufficient consideration has not been given, in the experiments made, to the question of their capacity for resisting wear and tear to which they are subjected from the shocks and strains, and it appears it is still a matter for inquiry as to what extent the carrying capacity of trucks can be advantageously increased to.

I am most decidedly of opinion that large trucks of a maximum and the carrying capacity of trucks can

I am most decidedly of opinion that large trucks, of a maximum carrying capacity of (say) 20 tons, would, if adapted for our traffic, be a great advantage in many respects.

As you are aware our G trucks are much larger than our ordinary goods trucks, and with a dead weight of 11 tons 8 cwt. have a carrying capacity of 18 tons, so that we have already progressed in a degree to the same lines as those advocated in America.

When comparing the dead-weight and carrying capacity of our trucks with those of America, it should be borne in mind that where we use a very heavy hardwood the Americans use a light soft wood, and that while our trucks are in every respect substantial in construction, theirs are comparatively frail.

* See above extract.

I concur.—CH. A. G., 29/1/84.

APPENDIX.

In 1874 100 of our D waggons were built of soft wood (kauri), and the iron was much lighter than usual, so that the dead-weight was reduced from 4 tons 12 cwt. to 3 tons 13 cwt. 1 qr.; but the result has been very unsatisfactory, as in many instances the backs of these trucks have been broken with the ordinary loads, and several of the head-stocks and intermediates have been pulled out. In fact, out of the 100, only about thirty remain, and they are being renewed with hardwood as they

It should also be borne in mind that the gradients and curves on the American lines, where these large trucks are used, are very much easier than ours, and consequently it is not necessary that their draw-gear, couplings, &c., should be as strong

The goods stock on the English lines is all strongly built, and it is at once evident that the tendency is not in the direction of reducing the dead-weight, but rather to strengthen the stock, so that greater loads may be carried and the cost of

repairs consequently reduced.

Their waggons are all carried on four wheels, except a few which are built specially for heavy loads, and they are on

The following table shows that tare and loads vary considerably on the different lines :-

	Covered Goods.		Medium.	
	Tare.	Load.	Tare.	Load.
Freat Western London and North-western North-eastern South-eastern Freat Northern London and Brighton Midland	tons. cwt. 5 6 5 11 5 19 5 11 5 17 5 3	tons. 9 7 8 8 10	tons. cwt. 4 15 4 18 5 9 and 4 15 5 6 and 4 7 5 4 4 2 4 14	tons. 9 7 8 10 9 7

Of course the Board of Trade requirements have a great influence on the English companies building their stock so-strong, but I am decidedly of opinion that the error, if any, is on the right side, and on Government lines such as ours I think we are much safer on many grounds in following their example, within fair bounds, than in adopting that of the American private companies where the risk run is so much greater. W. SCOTT, 19/1/84.

MR. Alison's cars reported upon by Mr. Scott in 84/2,228, carry 40,000 lbs., and weigh 19,300 lbs., and another carries 13,000, and weighs 7,900 lbs. This is far better than our "G" truck.—Ch.A.G., 29/1/84.

The English load is, as compared with the tare, very much better than ours. We are not only outpaced in this respect by America but even by England's practice, which Mr. Scott adopts as his model. Take for instance their "medium," equal probably to our D; trucksour trucks weigh 4 tons 12 cwt., and carry 6 tons, while their mediums average 4 tons 16 cwt., and carry 8½ tons. I should be satisfied to get this, but I see the South-eastern Railway of England can load 10 tons in a truck weighing 4 tons 7 cwt., notwithstanding the exacting margin of safety insisted upon by the Board of Trade. I am glad Mr. Scott has given attention to the matter and that it is likely to bear fruit. But do not conclude that this paper shows that we have done the right thing hitherto; it shows on the contrary, even by English practice, that we are far out. I am in favour of increasing the size of trucks; in this way the tare, as compared with the load, can be reduced.—Ch.A.G., 29/1/84. Locomotive Engineer, to be returned.—Ch.A.G.

Seen—W.S., 2/2/84. The Commissioner. Traffic Manager to see.—Ch.A.G., 8/12 84.

I think a good deal might be done in reducing the tare of our vehicles, but I cordially agree with Mr. Scott that even that can be overdone—and I think it is overdone in America.

In the matter of goods waggons (or what are known there as freight cars) I have not seen one come from America yet that I regard as strong enough—they are certainly in that respect a long way behind those in England or New South Wales.

Wales.

I believe in large waggons too, and have ordered a good many of them, but they are more suitable for thickly populated countries, where the traffic is heavy, than in a large measure to a sparsely populated country like this, where, in very many cases, we would not get loads for them.

As regards the reduction of the tare of the vehicles, I wrote to the Commissioner on the 16th November last.—
W.V.R., 15/2/84. Commissioner.

[To the evidence of Thomas Midelton, 7 October, 1884.]

J 1.

ACCIDENTS THROUGH BROKEN WHEELS.

Extracts from The Railroad Gazette, January 4 to July 25, 1884.

Train accidents in November. "On the morning of the 8th the rear of a passenger train, on the Chicago, Rock Island, and Pacific Road, was thrown from the track near Jamesport, Mo., by a broken wheel, and rolled over down an embankment. The car was badly broken; one passenger killed and 12 others hurt."

"On the evening of the 13th several cars of a freight train, on the Connecticut and Passumpsic Rivers Road, were thrown from the track near St. Johnsbury, Vt., by a broken wheel."

"On the evening of the 14th a freight train, on the New York and New England Road, ran off the track at the New York, New Haven, and Hartford crossing, in Hartford, Conn., and four cars were piled up together. It is thought that the accident was caused by a broken wheel:"

"On the morning of the 17th the engine and one car of a passenger train, on the Ohio Central Road, were thrown from the track near Bucyrus, O., by the breaking of a wheel under the engine truck. The engineer was hurt."

"On the morning of the 21st a car of a passenger train, on the Louisville and Nashville Road, was thrown from the track near Newcastle, Ala., by a broken wheel."

"On the morning of the 29th several cars of a freight train, on Wabash, St. Louis, and Pacific Road, were thrown from the track near Kirksville, Mo., by a broken wheel."

Extracts from The Railroad Gazette, February 29, 1884.

Accidents in January. "On the night of the 16th a car of a passenger train, on the Rome, Watertown, and Ogdensburg Road, was thrown from the track near Ogdensburg, N.Y., by a broken wheel."

"On the morning of the 22nd three cars of a passenger train, on the New York, Lake Erie, and Western Road, were thrown from the track near Stockport, N.Y., by a broken wheel."

"On the afternoon of the 22nd a passenger train, on the Toledo, Cincinnati, and St. Louis Road, was thrown from the track on a trestle near Beavertown, O., by the breaking of a truck wheel under the engine. The whole train went off the trestle, carrying away a part of it, and was wrecked, injuring three trainmen and five passengers."

"On the evening of the 28th a car of a passenger train, on the Manchester and Keene Road, was thrown from the track near Greenfield, N.H., by a broken wheel."

Extracts from The Railroad Gazette, April 25, 1884.

Accidents in March.

"On thenight of the 6th, a car of a freight train on the New York, Lake Erie, and Western Road, was thrown from the track near Callicoon, N.Y., by a broken wheel."

"On the morning of the 7th, the engine of a passenger train on the Chicago, Milwaukce, and St. Paul Road was thrown from the track near Astoria, Ia., by the breaking of a wheel. The engine was thrown over on its side, the engineer and fireman were killed, and a brakeman was very badly hurt."

were killed, and a brakeman was very badly hurt."

"On the evening of the 9th, six cars of a freight train on the St. Joseph and Western Road were thrown from the track near Maryville, Kan., by a broken wheel."

"On the night of the 9th, two cars of a passenger train on the New York, New Haven, and Hartford Road were thrown from the track on a trestle bridge at Mott Haven, N.Y., by the breaking of a wheel. Both cars went on the bridge and upset into the Harlem River. One passenger was badly hurt."

"On the night of the 18th, a car of a freight train on the New York Central and Hudson River Road was thrown from the track near Auburn, N.Y., by a broken wheel, blocking the track two hours."

"Early on the morning of the 19th, five cars of a freight train on the New York, Lake Erie, and Western Road were thrown from the track near Port Jervis, N.Y., by a broken wheel."

"On the morning of the 25th, a car of a coal train on the Central Railroad of New Jersey was thrown from the track at Annandale, N.J., by a broken wheel, and the twenty-five following cars were piled up on top of it in a bad werek."

"On the night of the 27th, several cars of a freight train on the Wabash, St. Louis, and Pacific Road were thrown from the track near Wabash, Ind., by a broken wheel."

Extracts from The Railroad Gazette, May 30, 1884.

Accidents in April.

"On the night of the 1st, the tender and three cars of a freight train on the New York, Lake Erie, and Western Road were thrown from the track near Goshen, N.Y., by the breaking of a wheel under the tender."

"Early on the morning of the 3rd, a car of a passenger train on the New York Central and Hudson River Road was thrown from the track near Utica, N.Y., by the breaking of a wheel."

"On the afternoon of the 9th, several cars of a freight train on the Norfolk and Western Road were thrown from the track near Battersea, Va., by the breaking of a wheel."

Extracts from The Railroad Gazette, July 25, 1884.

Accidents in June.

"On the evening of the 12th, six cars of a freight train on the Chicago, Burlington, and Kansas City Road were thrown from the track near Browning, Mo., by a broken wheel and badly wrecked; a tramp who was stealing a ride was killed and another one hurt."

J 2.

ACCIDENTS THEOUGH BROKEN AXLES.

Extracts from The Railroad Gazette, January 4, 1884, to July 25, 1884.

Accidents in November.

"On the afternoon of the 8th, the engine of a passenger train, which was running backwards on the Boston, Foosac Tunnel, and Western Road, near Mechanicsville, N.Y., was thrown from the track by the breaking of an axle under the tender. The engine was wrecked, the engineer badly and the fireman fatally hurt."

"On the morning of the 13th, three cars of a construction train on the New York, West Shore, and Buffalo Road were thrown from the track near Savannah, N.Y., by a broken axle, and went down a high bank, injuring thirty labourers."

"On the afternoon of the 17th, three cars of a freight train on the Wilmington and Northern Road were thrown from the track near Wilmington, Del., by a broken axle, and went down a high bank.'

"On the afternoon of the 24th, a car of a freight train on the Wilmington and Northern Road was thrown from the track near Mortonville, Pa., by a broken axle and upset."

Extracts from The Railroad Gazette, February 1, 1884.

Accidents in December.

"Very early on the morning of the 1st, four cars of a freight train on the Pennsylvania Railroad were thrown from the track near Princeton Junction, N.J., by a broken axle."

"On the evening of the 12th, the tender of a passenger train on the New York Central and Hudson River Road was thrown from the track, near Rochester, N.Y., by a broken axle."

"On the 20th, an engine and two cars of a freight train on the Chicago, Burlington, and Kansas City Road were thrown from the track near Farmington, Ia., by the breaking of a driving axle under the engine. Three trainmen were badly injured."

"On the morning of the 26th, the engine of a passenger train on the Chicago, Burlington, and Kansas City Road was thrown from the track near Sumner, Ia., by the breaking of a driving axle on the engine. The entire train followed the engine from the track, the baggage car and forward coach being overturned and badly broken. Two passengers were hurt."

Extract from The Railroad Gazette, February 29, 1884.

Accidents in January.

"Early on the morning of the 21st, several cars of a coal train on the Delaware, Lackawanna, and Western Road were thrown from the track on a bridge near Dover, N J., by a broken axle. The axle cut through one of the bridge girders, breaking it down and blocking the road all day."

Extracts from The Railroad Gazette, March 28, 1884.

Accidents in February.

"On the night of the 13th, two cars of a freight train on the Pennsylvania Railroad were thrown from the track near Downington, Pa., by a broken axle."

"On the night of the 28th, two cars of a passenger train on the Indiana, Bloomington, and Western Road were thrown from the track near Columbus, O., by a broken axle."

Extracts from The Railroad Gazette, April 25, 1884.

Accidents in March.

"On the morning of the 20th several cars of a freight train on the Rome, Watertown, and Ogdensburg Road were thrown from the track at Hess Roads, N.Y., by a broken axle."

"On the night of the 30th, nine cars of a freight train on the Chicago and Grand Trunk Road were thrown from the track near Battle Creek, Mich., by a broken axle." Extracts

Extracts from The Railroad Gazette, May 30, 1884.

Accidents in April.

"On the morning of the 12th, sixteen cars of a freight train, on the Pennsylvania Railroad were thrown from the track, near Robertstown, Pa., by a broken axle."

"On the night of the 15th, several cars of a freight train on the Texas and St. Louis Road were thrown from the track, near Pittsburgh, Tex., by a broken axle, and four trainmen were hurt."

"On the evening of the 22nd, twenty-one cars of a coal train on the Central Railroad of New Jersey were thrown from the track, near Bloomsbury, N.J., by a broken axle."

"On the afternoon of the 23rd, eight cars of a freight train on the Texas and Pacific Road were thrown from the track, near Clear Fork, Tex., by the breaking of an axle. Several of the cars went down a high bank and were badly wrecked."

[Extracts from The Railroad Gazette, July 25, 1884.]

Accidents in June.

"On the morning of the 1st, a car of a freight train on the Housatonic Road, having a circus on board, was thrown from the track, near New Milford, Conn., by a broken axle."

"On the morning of the 14th, twenty-four cars of a freight train on the New York, West Shore, and Buffalo Road were thrown from the track, near Fairport, N.Y., by a broken axle. The cars went down a bank and were scattered in all directions, making a very bad wreck."

"On the night of the 18th, several cars of a freight train on the International and Great Northern Road were thrown from the track, near Laredo, Tex., by a broken axle."

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Principle on The Bull-ord Horette, July 18, 1884

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Extract from Tie Rubroad Garate, January 4, 1884; to July 25, 1881.

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COMPARATIVE STATEMENT of Passenger Accommodation, Capacity, and Dead-weight in the various Passenger Rolling Stock on the New South Wales Government Railways.

	Description of Vehicle.	Carrying Capacity.	Weight of Vehicle	Proportion of Dead Weight	Numb Comp men	per of No part- parts. or	umber of ssengers a side.	Sea	th of t per enger.	1 10	er	Cubic	Contents assenger.	General Remarks.
		1st 2nd Class Class Pass. Pass.	empty.	ner Pas-	1st Class.	2nd 1s	st 2nd Class	1st Class.	2nd Class.	1st Class.	2nd Class	1st Class.	2nd Class.	
	First-class carriage, new type (now being built, 6/10/4.	18	tons cwt.qr 7 0 0 (estimated)	871	3		3	in. 24	in.	sq. f. 8.28	sq. f.		cub. ft.	Weight estimated only. This carriage is without bogies, and allows the passengers greater space than any other type now in use, except the "Ashbury," which it approaches very closely.
•	First-class, Redfern type (bogie) 8 Compo., Redfern type, do 8	48 16 40	13 16 2 13 8 3	645·2 537	6 2		4 5	$22\frac{1}{2}$ $22\frac{1}{2}$	18	5· 4	4. 3	36· 4 36· 4	29. 1	The bodies and underframes of all these carriages are comparatively light, and the
	Second-class, Redfern type do 8 "	70	13 10 0	432	ļ [7	. 5		18		3.65	ş	24. 6	
	Compo., "Ashbury," do 12 ,,	24 40	(estimated) 24 11 3	860.5	4	4	3 5	24	17½	8. 6	4.26	63. 3	31. 3	This carriage has a very heavy body and underframe, which necessitates heavy bogies in proportion, and six axles to carry the extra weight. The lantern roof also adds greatly to the weight of the carriage.
	First-class, "Cleminson" do 8 ,, Second-class, "Cleminson" do 8 ,,	36 70	18 9 2 19 0 0 (estimated)	1,149 600	6	7	- ا	24 	171	7· 8	4 6	60. 6	31. 8	The same remarks apply to these carriages as to the "Ashbury," except that they
	First-class, American type, do 8 ,,	, 60	16 10 3	617:4	1		1	17 1		5· 8 *4· 6		42· 3 *33·24		The bodies of these carriages are comparatively light; the bogies, however, are heavier than those of the Redfern type of carriage, while they are considerably
	Compo.; American type, do 8 ,, Second-class, American type, do 8 ,,	28 32 60	16 10 0 16 2:0	616 601	1	1			17½ 17½	*4 6	5·8 *4·6 5·8	*33·24	42· 3 *33·24 42· 3	for 1st class, is greatly inferior, though the floor area and cubic space per
		40		_			ے ا	•••	l i		*4.6		*33·24 24· 3	passenger are greater, being the same for both classes of passengers.
	Standard, second-class carriage 4 ,,	40	7 7 2	413	,	4	. 5	•••	18	•••	3.7		24 3	A light carriage, carrying a large proportion of passengers in comparison to deadweight. The side framing of this carriage is very light on account of its having windows only in the doors and Venetians only in the side lights. There is but one partition, running up to the roof at centre of carriage. The carriage has a weather roof.

^{*} These dimensions show floor area and cubic contents, exclusive of gangway space.

COMPARATIVE STATEMENT of Carrying Capacity, Weight, Size, and Dimensions of American Dump-car, G Wagon (on Bogies), Midelton's Double Bogie Iron Coal-wagon, to Drawing No. 919.

			American Dump-c	ars.	G	Wagons	(on Bogies).	Mid	elton's D	duble Bogie Iron C	oal-wagon.	Mid	al-wagon.		
		lumber arried.		Remarks.		Number carried.			Number carried.		Remarks.		Number carried.		Remarks.
Total length inside	8 3 2 0		ts. c. qr. lb. 9 16 2 0 13 10 0 0 23 6 2 0 18 0 0 0 27 16 2 0 13 4 0 0	each bale 4' 6" x 2' 6" sq. @ 4 cwt.	ft. in. 27 8 7 7 2 0		12 12 0 0 13 10 0 0 26 2 0 0 15 0 0 0 27 12 0 0 13 4 0 0	ft. in. \$1 0 9 3 0 2	 30 	ts. c. qr. lb. 2 19 1 15 5 8 0 0 8 7 1 15 4 15 3 16 13 3 1 3 15 0 0 0 28 3 1 3 20 0 0 0 28 7 1 15 15 8 0 0	with boxés 2' 6" deep.	ff. in. 15 5\frac{1}{2} 9 3 0 2		ts. c. qr. lb. 4 2 0 0 2 8 0 0 6 10 0 0 7 10 0 0 14 0 0 0 7 12 0 0	with boxes 2' 6" deep.
Weight of wagan loaded with case bales of wool Weight and number of pressed bales of wool carried		 88	23 0 2 0 17 12 0 0	each bale 2' 8" cube @ 4 cwt.		88	25 16 0 0 17 12 0 0	•••	99	23 15 1 15 19 16 0 0	.f	44. 44.	 49	11 14 0 0 9 16 0 0	
Weight of wagon loaded with pressed bales of wool Weight and number of edge bales of wool carried	•••	42	27 8 2 0 9 9 0 0	each bale 4' 9" x 3' x 2' 4", @ 4 ewt. 2 grs.		42	30 4 0 0 9 9 0 0		50	28 3 1 15 11 5 0 0	······································		25	13 18 0 0 5 12 2 0	
Weight of wagon loaded with edge bales of wool			19 5 2 0	ewt. 2 qrs.	}	l	22 1 0 0]	l]	19 12 1 15				9 14 2 0	
Cost of vehicle complete	£190 with cast-iron wheels.				£289 with wrought-iron wheels and steel tires.			£236 (estimated) with wrought-iron wheels and steel tires with Midelton's fastening.			£121 (estimated) with wrought-in and steel tires with Midelton's			iron wheels 's fastening.	

THOS. MIDELTON.

[Ordered to be appended, 15th October, 1884.]

Minute Paper from Mr. T. Midelton to Commissioner for Railways.

Coaling Engines here and on other Lines—Commissioner's M.P. 82-18,558 herewith.

In compliance with your minute of 13/11/82 on the above paper, I have much pleasure in making the following

I have carefully considered the five designs for coaling engines, illustrated in the Railroad Gazette of September 15th, 1882, and am sorry to say I could not recommend either of them for adoption here.

I set it down as an axiom that all coaling appliances (and indeed a great many other things on a railway) should be portable; then, if an engine cannot get to the coal the coal could be taken to the engine, but with any system of fixed plant for coaling engines it is obviously necessary for them to go to that fixed plant at all times for coal; hence there is only one-half the advantage there is with plant that is portable. We now have at several places on the railway system fixed coal stages which have swallowed up time, capital, and space for their erection, and have served a purpose while temporarily wanted but are now abandoned; the same capital would have provided special coal-waggons which could be useful now wherever required.

It is an important point to note, that whatever system of coaling engines is adopted, it should be one which could be

It is an important point to note, that whatever system of coaling engines is adopted, it should be one which could be used at any locomotive depôt on the railway without difficulty, otherwise it is probable we may have as many different sorts of coaling stages, &c., as we have locomotive depôts. I think that what does for one place should do equally well for all, and this I have secured.

all, and this I have secured.

The scheme, fig. 1, adopted at Altoona, on the Penna. Railroad, requires a lot of preparation by cutting out, or filling in, before the fixed stage can be erected; consequently it is only at exceptional places, like Eskbank for instance, where this or perhaps either of the five systems proposed could be used. I think such a scheme would be very troublesome and costly to work. It is stated the coal is raised 110 feet high, but this probably is a mistake; however, if it is only raised 1 foot higher than is absolutely necessary (say just the height of a tender) it is the reverse of economical. The plan involves a lot of manual labour, and a great deal of space.

Fig. 2 is certainly the best of the five schemes, and shows how engines could be coaled direct from a mine, but this plan even necessitates the erection of a large stage, or bridge, really, a lot of hand shunting, and a special locality. I will suppose such a plan in operation at Eskbank; it would be necessary for each colliery proprietor to consent to run his skips from his mine direct on to this bridge, and there deposit the coal; this would mean a system of light tramways from all the mines to the said bridge; such a system I consider would be extremely inconvenient, and perhaps be applicable only at this particular station.

this particular station

Schemes 3, 4, and 5, possess nothing to recommend them; indeed all the designs are expensive and undesirable for many reasons. Each would require special drawings and a lot of consideration to make them suitable for the different locomotive depôts, where it would be necessary to erect them, and I should certainly prefer seeing the capital spent in

providing waggons as I am about to propose.

When an engine takes coal at a depôt it is nearly always necessary to rake the ashes out of the ash-pan into a pit; therefore it is not only the question of taking coal-expeditiously which has to be considered but that of taking water and depositing ashes, and the further operation of cleaning them out of the pit again; neither of the schemes illustrated in the

therefore it is not only the question of taking coal-expeditiously which has to be considered but that of taking water and depositing ashes, and the further operation of cleaning them out of the pit again; neither of the schemes illustrated in the Railroad Gazette shows an ash-pit or a water-crane.

The question of getting rid of the large quantities of coal ashes which accumulate in the pits, and about the yards, at all locomotive depts, is nearly as important a question as that of coaling engines, and should, therefore, be taken into consideration when making adequate provision for locomotive requirements. The ashes, whether used as ballast on the permanent way, or sold for building and other purposes, is an important item, and I think the locomotive department should get some credit or return for ashes, as I consider the sum they would realize would almost pay the expenses of coaling the engines. Under the system I shall propose (an outline of which I furnished to you in my report of July 4/82, M.P. 82/10, 292, herewith) all this will be done.

I understand that the 250 coal-waggons ordered for the exclusive use of the locomotive department are to be the same as the ordinary D waggon; but, if not too late, I recommend that they be constructed as shewn on tracing No. 754 herewith* to either design, as may best suit the Traffic Department. The four-wheeled waggon will hold fifteen coal-boxes and carry 7½ tons of coal. It contains 93 cubic feet capacity more than our present D waggons. The double bogies how under order, except that my waggon is I' 4" wider than the G waggon son referred to. I may mention that the tare shewn is too high, and it is an error on the safe side, as I propose to construct the entire waggon of iron.

When the coal-boxes (which are shewn in detail on tracing No. 744* herewith) are removed, the waggons are then available for the Traffic Department for wool, grain in sacks, rails, timber, hay, straw, &c., &c., and the boxes can be used at the locomotive depôt for coaling engines from the

not sold in the future but still used by the Permanent-way Department, 1 think we (the 1000.) Should get all waggon-load for them, as if they could not be obtained other ballast would have to be got for Permanent-way and probably at a greater cost.

This system would also do away with a lot of labour, calculations, shunting, &c., now necessary for weighing each coal-waggon when full and again when empty as a check for the quantity used or paid for.

Sketch B* herewith shows a complete running shed and appliances for all the work to be carried on expeditiously (as I propose for Goulburn). The same thing is shown to scale on tracing 754.* The engine-shed to hold forty engines of the largest class (twenty each side of the central traversing table. The road A is for engines going into and out, of the said shed; road B is a through road, on which water can be taken and a shunt made if required, so as not to interfere with any of the other roads or operations to be carried on on them, and so that it will not be necessary for all engines to run over the traverser unless going into or coming out from the shed when only it is intended the said traverser shall be used. On line C are placed as many water columns as may be required at any time. Road D has a pit on it of the required length, and on this road all engines are intended to come for coal, water, and raking out ash-pans, and twenty or more may stand on it one after another, and each do its work and go away out on the road for traffic, or go direct into the shed (that is if the first in is attended to by the coal-men), and so on as engines come in. And in case an emergency engine came in when twenty were standing on road D for coal, &c., it could be immediately accommodated by the crane only in ordinary operations; that is, when the coal-waggons come in on road F, and the engines are coaled direct from them by crane on road E. To keep the whole system complete I should, where it can beconveniently arranged, do it as shown in sketch B,* but where the locality will

"Tracing 754.
"Stable"

Sketch B *

the mines the engines could be run in on road E, the crane kept on road F, and the coal-boxes filled from the faces of the respective heaps H by the coal-men, and lifted on to the tenders. Indeed I almost wish to propose that the special coalwaggons shall be used by us during the slack season of the year for our own purposes exclusively; then enough coal could be stacked at each depôt to carry us over the busy season; the coal-boxes could be left at the respective depôts for coaling engines, and the low-sided special coal-waggon could be used by the Traffic Department the whole of the wool season, or longer if required. The waggon I propose is useful for a great many purposes, although worked for loco. coal exclusively, and could take the place of the G waggons referred to.

The first coal-boxes would, I estimate, cost £6, made in Sydney, but about half that sum if made in England, in large quantities, packed and shipped with the plates close together in cases, and just riveted together by us here. The waggons would be of iron also, and very light and strong. I should prefer making them of steel if there were time and it could be properly arranged.

The paper herewith marked C shows what takes place now with regard to coaling engines, and is worthy of study.

The paper herewith marked C shows what takes place now with regard to coaling engines, and is worthy of study, Paper C. as it shows the waste of time which the Department is paying for. With the system I propose eight men at Sydney would do all the coaling in half the time it is now done by thirty-five. A shunting-engine and two more men entirely dispensed

with.

Another plan could be adopted; say forty boxes were made and kept at each loco. depôt, and coal-waggons made with four sides, something like a D or ballast waggon, and the size shown in tracing 744* in plan, and in tracing 754* in plan and Tracing 744.* elevation, they could have drop bottoms along and nearly close to each of the sides, and the said boxes placed behind closely in a row between roads D, E, and F, and the coal deposited into the boxes; but this system means handling the coal once more than is necessary, and I should prefer the plan first referred to. I could construct small cranes suitable for this purpose at a very moderate sum, and so arrange that at some stations it could be worked by hand until the work was too much, and then a small steam cylinder and boiler could be attached.

If this system is not adopted throughout the line at once, I would earnestly request that you will consider it advisable to have (say) 50 of the 250 coal-waggons ordered made on my plan, and all the arrangements I propose carried out at Goulburn loco. depôt, as I feel extremely sanguine about the complete success and economy of the system, having considered it for over ten years. With 20 or 30 boxes and a small crane (even now) on the Sydney stage I could effect great economy.

I am sorry to have to go to such length in my report, but the subject is one in which I feel very anxious indeed, and have taken great pains to note the wants and difficulties attending the question for a very long time, and I trust you will not consider me occupying your time unnecessarily.

not consider me occupying your time unnecessarily.

The Locomotive Engineer, Redfern Railway Station, Sydney,-

Sir,

I will feel obliged if you will cause to be forwarded to me, at Ashfield, at your earliest convenience, one truck of cinders, upon which I shall be happy to pay all charges.

I have, &c.,

T. T. JONES, per A.T.D.J.

Mr. Cobb,—

Please have a D truck loaded with coal-ashes and addressed to T. T. Jones, Esq., Ashfield, as soon as it can be done. I see ashes are being loaded to-day. Let this go through the Traffic Department, as Mr. Jones will pay all costs. Let me know the value of ashes, and the freight to Ashfield.

T.M., 3/1/83.

1 truck sent to-day,—
Value of the ashes d. 0 0 6 Freight

J.C., 4/1/83. Charge £1 ls. 6d. Will you send voucher to Mr. Jones for the above and collect amount. I presume this is the usual course.—T.M., 5/1/83. Traffic Manager.

RETURN of what took place at Upper Coal Stage, Sydney Yard, in 24 hours. Date, 21 August, 1882.

	No. of Engine.	Time of arrival at coal stage.	No. of coal . road.	No. of men coaling.	Time occupied coaling.	Taken in with shovels.	Taken in with baskets.	Taken in by hand in lumps.	No. of times each engine coaled.
No.	71, tank	11. a.m	2	2	10 minutes	Shovels			.2
,,	161, ,,	11 15 ,,	2	3	8 ,,			Lumps	2
,,	160, ,,	11 30 ,,	2	2	10 ,,	. Shovels			3
,,	159, ,,	12·15 p.m	2	3	5 ,,	7 "			$\frac{2}{4}$
,,	163, ,,	12.30 ,,	1	3	10 ,,	.,,,	1.	T	4
,,	113, tender	12.45 ,,	2	2	20 ,, ~			Lumps	1
,,	191, ,,	12.55 ,,	1	3	10 ,,			,,	
,,	74, tank	1.30 ,,		2	10 ,,	. Shovels		T	1 1
,,	30, ,,	1.40 ,,		2	10 ,,		***********	Lumps	
,,	79, tender	3 ,,	1	3	20 ,,			,,	1
,,	162, tank	3 20 ,,	1	2	10 ,,		***************************************	,,	2
,,	160, ,,	4.5 ,,		. 2	15 ,,	. Shovels	2000		3
,,	37, tender	4 ·30 ,,	. 1	3	10 ,,		Baskets		1
,,	163, tank	4.50 ,,	. 1	2	10 ,,	. Shovels		***********	4
,,	32, tender	5.30 ,,	. 1	4	10 ,,	,,			1
,,	111, ,,	7.40 ,,	. 1	3	8 ,,	. ,,			2
,,	68, tank	7.45 ,,	.] 1	2	10 ,,	,,			1
"	41, tender	10.20 ,,	1 .	2 .	7 ,,				1
"	39, ,,	11:30 ,,	. 1	2	15 ,,	Shovels and	*	Lumps	1
,,	111, ",	3.5 a.m	. 1	2	15 ,,	,,			2
,,	43, ,,	3.50 ,,	.].	1	5 ,,			Lumps	1
"	158, tank	4.25 ,,	1 7	2	10 ,,	Shovels and		,,	2
"	49, tender	4.40 ,,	1 3	2	13 ,, .	,,			1
"	163, tank	6 ,,	1 7	2	5 ,, .	1			4
	94, tender	6.5 ,,	1 1	2	1 00				1
"	160, tank		1 1	2	13 ,, .				3
,,	35, tender	6.20 ,,	1 3	2	10	,, and		Lumps	1
,,	159, tank	7 ,,	1	2	8 ,, .	1 ''			2
,,	161, ,	7.30 ,,	1 1	2	10 ,, .	1 "			2
,,	100'	7.32 ,,	1 -	$\overline{2}$	l 6 "	., ,,			2
,,	36, tender	7.45 ,,	1 1	3	6 "	1 "			1
"	OH.	1 6 "	1 1	3	1 7 "	,			1
"	00	" منہ ا	1 5	š	15 "	`` ''	1		1
,,	20, ,, 158, tank	0.45	1 7	2	9 "	"			2
,,	87, tender	0.55	1	$\frac{2}{2}$	9 ′′	,,		Lumps	ī
"		0.70		$\frac{2}{2}$	15 "	Charrola			$\bar{2}$
,,	71, tank	0.10	1 1	$\frac{2}{2}$.	K ''	1			l ī
,,	75, tender	0.05	1 .	3	110	T "	1		î
,,	193, ,,	9.25 ,,		3	1 19 "	,,			i
,,	194, ,,	9.40 ,,	1 1	2	1 11 "	,,	1	1	4
,,	163, tank	10.57 ,,	· 1	Z	11 ,, .	., ,,		••••••	-

D WAGGONS.

Time of arrival of D Waggons at coal stage.		No. of men unloading.	No. o ^f men screening.	Time occupied unloading one D Waggon.	, Remarks.
11 a.m	1 2	3 3 2 2	Nil '1 1	45 minutes	

This does not show how much coal each engine took each time she was coaled. coalmen now employed here and at all other stations.—T.M., 8/1/83.

There were 20 men (including ganger) employed on Sydney coal stages, 20/2/80.

There are (including ganger) 35 men employed now (5/1/83).

64 men at all out-stations.

Please let me know the number of

Total.....99

Some of these (say 6) are only temporary hands.—C.A.N., 8/1/83. Loco. Engr.

I have given considerable attention to the scheme for coaling proposed by Mr. Midelton, and, after mature consideration, I have no hesitation in approving of its adoption. It will result in our having an expeditious supply at a cheaper cost, and I am satisfied that in many ways a considerable saving will be effected.

Mr. Midelton should best know how far the 250 trucks ordered for coaling purposes have progressed, and whether those he recommends can be substituted for them. No time is to be lost in giving effect to the scheme, and I leave the matter in Mr. Midelton's hands with a request that the Engineer for Existing Lines and the Heads of other Branches will afford him every facility in carrying it out.

I am afraid the freight on the boxes, if ordered from England, will absorb any saving which may be effected in first cost, and it is probable that they may be constructed as cheaply in the Colony.

CH. A. G., 20/1/83.

The bogic truck—similar to the "G" truck should be ordered—they will be very serviceable for the carriage of wool and grain up, and for rails on the down journey during the busy seasons.—Ch. A.G.

Return at once, through Traffic Manager and Engineer for Existing Lines Branches. Noted, 26/1/83.—J.M. Mr. Cowdery, then to Traffic Manager.

I HAVE the honor to inform the Commissioner that it is impossible for trains running between Mount Victoria and Bathurst to keep time if something is not done to improve the coaling arrangements at Eskbank.

I think it is very desirable that a coal stage should be put up in the yard at that station for local purposes, and another on the main line, so as to avoid the necessity of cutting off engines from the through trains; and an engine could coal in much less time on the train than it could by running into the yard and back.

Will the Commissioner kindly approve of this being done, as engines are sometimes delayed 50 minutes in getting coal out of the trucks at Eskbank under present arrangement, whereas they ought to be able to coal in 10 minutes, and the consequent delays seem very unnecessary.

I

consequent delays seem very unnecessary.

I recently handed to Mr. Cowdery a copy of the American Railroad Gazette, in which was the plan of a coaling arrangement in every way suited for Eskbank.

Mr. Cowdery, for report, B.C., 27/11/82.—Ch. A. G. See my minute on attached paper.—Commissioner, 29/12/82.

Mr. Avern, for early report.—G.C., per G.L., 30/11/82. Will Mr. Tipping be good enough to meet the District Engineer at Eskbank early on Friday morning, with a view to settling the best position and dimensions of these coal stages.—F. M. A., 4/12/82. Mr. Tipping. For the information of the Acting Locomotive Engineer please instruct me as to what I am to do re this matter. If I am to meet Mr. Avern on Friday morning it will be necessary for me to leave here on Thursday night.—John Tipping, 5/12/82. I was at Eskbank myself on Sunday and Monday last respecting this and other matters, therefore there is no necessity for your going to Eskbank on this matter. While Mr. Avern is that far he might as well I think come on here and see me. Please advise him accordingly. I have repeatedly explained to Mr. Cowdery what I want with regard to coaling engines, and also sent him drawings. I do not know that I can do any more. The whole of the coaling was a few months ago, as you know, done at other places. Suddenly we were asked to make immediate provision at Eskbank to coal all engines there. This of course was an unreasonable request. We have, practically, no provision there for water or coal or pit accommodation; indeed we are only allowed by the Traffic Department to occupy a portion of the goods yard. Please come here and see me as soon as possible. See Commissioner's, 82/10,292, 80/4,092, 82/18,558.—T.M., 6/12/82. Mr. Tipping.

Memorandum from Mr. J. Tipping to Mr. F. M. Avern.

Sir,

Re your memo. requesting me to meet you early on Friday morning at Eskbank, I cannot get away from Penrith, as the time-sheets for this district have to be in Sydney on Saturday morning. I have forwarded the M.P. to Mr. Midelton, and will wait his instruction re the matter of coal stages for Eskbank.

J. TIPPING.

Please return the M.P.—F.M.A., 8/12/82. Mr. Tipping. Returned herewith.—J.T., 11/12/82. Mr. Avern. I have examined the Eskbank yard. I think the best we can do in the matter of a coaling stage is to provide one against the bank between main line and coal sidings. The position is very favourable. Coal could be unloaded from the trucks to the stage, where level would be a couple of feet above the top of a tender standing on coal-yard road. From such a stage the labour of coaling would be small.—F.M.A., 27/12/82. Mr. Cowdery. I recommend Mr. Avern's suggestion be approved of.—G.C., per G.L., 29/12/82. Commissioner. Loco. Engineer to see.—D.V., 2/1/83. Seen. Please see my minute of 6/12/82, on Comr. 82/19,214 hereunto attached. I am sorry I cannot fall in with either the Traffic Manager or the District Engineer's recommendations; indeed, considering there is a new running shed, a 50-feet turn-table, a large coal-stage, and a water-tank at Wallerawang nearly ready for use, I think it would be rather undesirable to do much at Eskbank just now, although I firmly think that Eskbank is a far better place for a locomotive depot than Wallerawang. It should be borne in mind that ash-pits are wanted at Eskbank, water-tanks, and a good supply of water, if a coal-stage is erected there. We already have a very good 50-feet turn-table. All that is required at Eskbank now is a small portable hand-crane, to lift 15 cwt., about twenty iron boxes, and one man; then I could coal engines quite as expeditiously as Mr. Read suggests, and the cost of this would not be half that of a large coal stage. Please see my report on "Coaling Engines," dated 5/1/83, herewith.—T.M., 5/1/83. The Commissioner.

Memorandum from Mr. J. Turton to Locomotive Overseer.

Sir, Government Railways, Locomotive Engineer's Branch, Bathurst Station, 10 December, 1882.

I have to report that I am much inconvenienced by the ashes accumulating round the turn-table at Bathurst, and want of additional lengths of rails by which to run them out of the way. It is next to impossible to get the engines coaled, turned, and the coal unloaded. I am also in want of the temporary coal-stage, to keep a supply for Christmas holidays, and enable me to unload coal-trucks as they arrive. I have spoken and written to the District Engineer on these subjects, but nothing has yet been done to relieve the Department of the inconvenience and obstruction to the work being carried out. The new pit, in addition to engine-shed, will not be completed for two weeks at present rate, and it also is urgently required; as at present, for want of it, three or four dead engines have to be placed on the coal road, which still further obstructs the work and causes a large amount of unnecessary shunting of engines and consequent loss of time. Immediate action re above matters is urgently required. Nothing yet done to new turn-table.

J. TURTON.

J. TURTON.

This is a most serious matter. I was lately at Bathurst and saw the extreme inconvenience Mr. Turton was put to from want of room; he is worse off now than he was twelve months ago; the new turn-table not being finished and the old one not being long enough, necessitates the uncoupling of nearly all the goods engines from their tenders to turn them. This occupies the time of five or seven men, and the turn-table road being also the coal stage road, coal cannot be unloaded if an engine is on this road raking out ashes, &c., and vice versa. I cannot too strongly urge the extreme importance of this yard being completed. A day or two ago there were sixty-two waggons of coal in the Bathurst yard which could not be unloaded as there was no room to put the coal. The reserve coal-stage has been pulled down and no adequate provision made for stacking coal elsewhere. I simply want a coal road for my own use exclusively—no coal-stage or anything of the kind—and this could be expeditiously done. Hope you please direct that something shall be done at once. The Commissioner and I shall be glad to point out to Mr. Avern what will help us best and cheapest.—Thos. Midelion, 15/12/82.

Mr. Cowdery,—Please give this immediate attention.—D. V., pro Commissioner, 19/12/82. Mr. Avern to attend to this.—G. C., per G. L., 21/12/82.

Attended to. The tramway is laid in, a temporary coal-stage has been erected, and your permission obtained to resume work on ash pit and approach to new turn-table which has been commenced.—F. M. A., per R. H. A., 22/12/82.

Mr. Cowdery.

Mr. Cowdery.

Commissioner.—G.C., per G.L., 27/12/82. Loco. Engineer.—G.B., B.C., 28/12/82. Mr. Turton, for report.

How are you accommodated now?—T.M., 1/1/83.

The ashes have been removed and temporary rails laid down beyond the old turn-table to run the ashes out on, a temporary coal platform has been laid down near new carriage-shed, on which I have about 300 tons of coal. The new pit in addition to engine-shed has been completed, and a junction made from it to cattle road. I can now get on very much better with the work. The new turn-table is not yet completed.—J. Turton, 8/1/83.

The Loco. Overseer. Seen.—T.M., 9/1/83.

Memo. from Mr. J. Turton to Mr. F. P. Hubbard.

Loco. coal standing in trucks at Dubbo.

Sir,

Messrs. Evans and Hornidge were here this morning, and complained of having coal-trucks loaded standing here. I had about fifteen to commence with this morning, and whilst arranging the matter with the abovenamed gentlemen two trains arrived, within 10 minutes of each other, with fifteen or sixteen more trucks loco. coal. I am not ordering more than I require for this station, but I again submit I cannot keep them unloaded as they come in, without they come more regular. I really do require another fuelman to do the necessary work, which has increased so much. Mr. Evans states that trucks arriving should be unloaded the same day. I have several here that arrived on 16th and 17th instant. Extra shunting is required to always unload the first that arrives, and it seems at first sight as if it was badly arranged, but we take the trucks that are handiest to get, so as to have them unloaded at the coal stage. I think that as the coal arrives so uncertain, I should be allowed to engage a man or two temporarily, so as to release the trucks.

T. P. HUBBARD.

I would recommend that an additional fuelman be appointed. They can then be arranged to work in three shifts, as at Bathurst. I have instructed Mr. Hubbard, by wire, to take on, temporarily, two men to get coal unloaded.—J. Turon, 23/11/82. Loco. Overseer. Appd.—T.M., 7/12/82.

This difficulty of a glut of coal is of long standing, and I am anxious to have it remedied by a more regular delivery. Seeing that this Department is almost compelled to engage extra men to unload the waggons when they come in so irregularly, not only at Dubbo but at other stations, I think it unfair that my expenditure should be so increased, for no fault of this Department. I should be glad if you could suggest and bring about a remedy.—T.M., 27/11/82. Storekeeper.

I have given this coal supply business my very best and most careful attention for many years, and, as far as the arrangements made by this Branch for securing a regular supply are concerned, I do not see that they can be improved upon. Clear weekly orders, based upon the Inspectors' memos., are issued from this office, in duplicate, to the various stations from which coal is supplied, viz. —Esk Bank, Moss Vale, Bundanoon. One copy being sent to the Station-master, the other to the contractor, and this office is furnished by each of these stations with a daily return of the coal issued to each station. This, it may be thought, ought to secure the perfection of supply; and so it would, no doubt, but for two conflicting agencies—scarcity of trucks and private trade of the collieries. Do what I can, I confess I have found myself unable to cope successfully for any great length of time with these two antagonistic forces, more especially when the traffic is exceptionally heavy, as during the wool season. I consider the only remedy to be the one verbally suggested to me by Mr. Midelton, and this I have frequently recommended during past years, viz., increased storing facilities at the various coaling stations. This granted, and the slack season approaching, I have no fears whate

Midelton.—T.M., 7/12/82.

I desire specially to bring under Mr. Midelton's notice the way in which his Department is delaying our trucks at Dubbo. I understand that the daily supply of locomotive coal required there is about eight trucks, and it appears that the locomotive foreman has only labour enough to unload four or five, and consequently trucks are frequently detained for a week under load. I am informed that yesterday there were thirty trucks of coal on hand for the Locomotive Department at that station, which will, I understand, take at least a week to unload with the present staff. Will he kindly give this matter his attention, as it is impossible for us to supply the collieries if this state of affairs continue to exist.—W. V. Read (Per D.K.), 23/11/82. Urgent. Acting Locomotive Engineer.

Mr. Turton, for immediate report.—R.J.S., 23/11/82. Report attached.—J. Turton, 1/12/82. The Locomotive Overseer.

tive Overseer.

Memorandum from Mr. T. Hubbard to Mr. Turton.

Sir, Government Railways, Locomotive Engineer's Branch, Dubbo Station, 30 November, 1882.

In answer to the Traffic Manager's report re unloading coal-trucks at Dubbo, I have already reported fully in writing and verbally on this matter to yourself—First.—The uncertain way in which the trucks are brought to Dubbo.

The want of a new coal-stage where we could coal engines without interfering with other engines coming into and out of the engine-shed. The extension of the present engine-shed siding, as pointed out to yourself by me, and the removal of the danger signal at the end of the coal-stage, would greatly help to falicitate the unloading of coal-trucks.

As it is at present, one engine coaling blocks up the whole entrance to the engine-shed; and lastly, insufficient number of fuelmen. At this date I have twenty loaded trucks of coals here. I would respectfully call your attention to the great increase of traffic at this station, both in the increased number of trains, and the addition of the Nevertire extension of 64 miles, and all engines have to have sufficient coals put on their tenders to take them from Dubbo to Nevertire and back to Dubbo, making a distance of 128 miles. (No coaling at Nevertire.)

T. P. HUBBARD, Loco. Sub-Inspector.

I think it would be an advantage to have a dead end from outside or north engine-shed road, for coal trucks to stand on, also for the junction of engine-shed roads with main line to be moved east about 50 yards, and the signal-post near the junction-above-mentioned to be removed about 100 yards east of its present position. This would enable engines to be coaled at either side of coal-stage or to run round the engine-shed or coal-stage without fouling or going on to main line which they cannot now do. An additional fuelman is also required.—J. Turton, 1/12/82. The Locomotive Overseer.

Memorandum from Mr. J. Turton to Locomotive Overseer.

Sir, Government Railways, Locomotive Engineer's Branch, Bathurst Station, 1 December, 1882.

On account of a number of trucks standing full of locomotive coal at Dubbo, and as the Traffic Department was in urgent request of them, I have taken on a young man named John Parkes, as fuelman, temporary, to assist in getting the coal unloaded. Proposed rate, 7s. 6d. per diem. for nine hours. J. TURTON.

Approved .- T.M., 6/12/82.

Telegram from Mr. Loco. Engineer Midelton to Inspector Turton, Bathurst. PLEASE answer immediately.—Is your coal-stage full of coal? How many waggons full of coal are there in the yard? Have you sufficient men to unload coal? Have you room to unload coal?

Memorandum from Mr. J. Turton to Mr. T. Mideltón.

Memorandum from Mr. J. Turton to Mr. T. Mideltón.

Sir,

Government Railways, Locomotive Engineer's Branch, Bathurst, 7 December, 1882.

I have to report re your telegram attached, that I was down the line when it arrived. There are thirty-nine trucks of coal now standing in the yard loaded; some of them will be unloaded to-night, as I have instructed the fuelmen for some time back to coal engines from trucks as much as possible. The coal-stage is not full nor can I keep it so, as I am much inconvenienced for want of additional coal-stage room and the new turn-table. The want of the latter alone causes a loss of four to five hours daily, through having to uncouple to turn engines and recouple them, before they can take coal. I am also much incommoded for want of means to dispose of the ashes, by which the fuelmen are prevented from unloading coal-trucks as they otherwise would. I have spoken to and written to the District Engineer to get these obstructions removed, but it has not yet been done. I have also seen him about the temporary coal-stage that was to have been erected immediately the late new one was pulled down, and which was commenced and discontinued, as it was thought by him better to erect the permanent one, which has also been discontinued. I would urge the necessity of at once completing the new coaling and turning arrangements, as by doing so the work of the Locomotive Department will be very much facilitated. The number of trucks standing is owing in some measure also to the manner in which they arrive, which has been as follows:—Nov. 24, 6; 25th and 26th, 16; 27th, 7; 28th, 13; 29th, 13; Dec. 1st and morning of 2nd, 26; 3rd, 18; 4th, nil; 5th, 13; 6th, 4. As the coal-trucks can only be unloaded on to the stage during the day, and between trains, it is impossible to get them unloaded with the limited facilities at my command, unless the coal arrives regularly as ordered and not in gluts. I have enough men at present, permanent.

J. TURTON.

Telegram from Mr. J. Turton to Mr. T. Midelton.

TWENTY-TWO trucks of coal arrived last night and this morning; fifty-two now in the yard. I will take some temporary hands to unload them.

APPENDIX.

Minute from Acting Locomotive Engineer to Commissioner.

Subject:—Cost, &c., of coaling Locomotive Engines.

Department of Public Works, Railway Branch,
Loco. Engineer's Office, Sydney, 4 July, 1882.

I have carefully perused your 80/4,092 herewith, and upon inquiry I find that you have not yet been supplied with the report you asked for on the 6/2/82. I therefore have much pleasure in forwarding you my views on this very important matter which I may state has occupied my serious attention for some years.

The supply and distribution of fuel is a very large and important item in locomotive expenses, and it is clear that if coal could be taken direct from a mine and put at once on tenders that this would be the cheapest and most simple way that it could be distributed, and it is quite possible to do this, with the exception of its transit from the mine to the various locomotive denots.

coal could be distributed, and it is quite possible to do this, with the exception of its transit from the mine to the various locomotive depots.

I most thoroughly agree with the views expressed by the Secretary, viz., "that we should have suitable waggons constructed for the conveyance of coal, and also have crane appliances." I am happy to learn that waggons have been actually ordered, and hope they are specially designed to suit the work they are intended for.

There are far too many men employed in coaling engines, but I do not wish to dispense with their services; on the contrary when suitable provision is made for coaling engines, but I do not wish to dispense with their services; on the contrary when suitable provision is made for coaling of no coaling engines, but I do not wish to dispense with their services; on the contrary when suitable provision is made for coaling I could more profitably employ these men at other work, especially as the traffic is so rapidly increasing.

At the time you wrote your minute of 7/8/81, and even up to now, this question has been almost constantly in my mind, and I have only to repeat the words used in my report to Mr. Scott when describing my design for the Eveleigh Works (No. 4), and forwarded to him on the 30th December last. It runs thus:—

"The coaling of engines I intend to be done as follows:—On the coal road, next the up main line, will stand as many coal waggons as the siding will hold (which said waggons should be specially designed and constructed for the purpose); then engines coming to the sheds would run in on the road next the coal road; between these roads runs a small jib-crane of special design, capable of lifting 2 tons; this would be used to lift 10, 20, 30, or 40 cwt. of coal as required direct from any waggon on the said coal road to any tender at any time; this avoids coal stages altogether, and the coal is only handled once by this means in place of four times as at present. It is intended that the coal waggons should be unloaded regularly at the

would be done; each man and each engine could do what there is to be done without any obstruction or detenuon whatever. The space between the coal road and the shed roads could be used for erecting a very large coalstage on, but it is not advisable to adopt this plan."

I most thoroughly endorse your expression, viz., "not only in Sydney but at all our depôts we are incurring an extravagant and unnecessary expenditure in connection with our coaling arrangements." I am very anxious to do what I can to reduce this extravagance, but I fear unless immediate steps are taken the cost of coaling engines at Bathurst, Penrith, Goulburn, and other places will be materially increased instead of reduced, and it is evident that the nearer we can approach the true theoretical manner of coaling the greater the economy will be in all respects, and many thousand pounds per annum can be saved in this one item alone.

Drivers complain about the long time they have to wait after finishing a journey before they can turn their engines to get coal and water; half-an-hour is ample for this purpose at any depôt if the locomotive yard and appliances are properly arranged, and this is quite a simple matter to accomplish in all new yards or re-arrangements of old ones, but as far as I can learn it has not yet been successfully done on our lines, and unless it is done soon the cost with our rapid extensions must increase very much. A driver's time generally reckons from the hour he comes on duty till he leaves his engine, and it is evident that the more expeditiously all his duties can be accomplished the less the cost to the Department.

About twenty to twenty-four waggons of ashes per fortnight are, I am informed, loaded up in the Sydney yard by the Locomotive Department and handed over to the Permanent-way Department. Under such circumstances I think we should be allowed something for these ashes, or allowed to use or sell them ourselves.

I have, &c.;

THOS. MIDELTON.

I shall be glad if the Engineer for Existing Lines will, in consultation with Mr. Midelton, devise some means by which greater economy, both in time and expense, can be effected in the cost of coaling locomotive engines.—Ch. A.G., 7/7/82.

Will Mr. Midelton please name a day upon which we might meet and consult on this matter.—G.C., per G.L., Mr. Midelton.

Saw Mr. Cowdery to-day, 15/8/82, with reference to Eveleigh, and explained my views as herein shown, and also showed him drawing of coal-waggon specially arranged for this purpose.—T.M., 15/8/82.

I cannot devise any better plan for coaling engines than that which is herein described, and also shown on tracing of proposed new running engine-shed for Goulburn. The same arrangement is shown in my No. 4 design for the Eveleigh works, and in a tracing which I have just prepared for Newcastle running-shed.—Thos. MIDELTON, 18/9/82. The Commissioner Commissioner.

This matter will, I trust, receive immediate attention. I do not know how far Mr. Midelton's plan of coaling proposed at Eveleigh under his plan of shops must be modified to admit of adaptation to accepted design, but as far as possible Mr. Midelton's proposals for coaling engines are to be carried out at once at Eveleigh and other stations.—Ch. A.G., 29/9/82. Mr. Cowdery, B.C.

Minute from Mr. D. Vernon to Mr. R. J. Sheridan.

Discharging Coal from Truck to Stage, Redfern.

Mr. Sheridan will be good enough to furnish me with the number of men employed and amount paid for wages for the above service.—D.V., 19/2/80.

Twenty men. Wages, £6 13s. 6d. per diem. This includes coaling engines and screening coal.—R.J.S., 23/2/80. The Secretary. It appears to me that if we had a number of suitable waggons constructed for the conveyance of coal from the harbour, and crane appliances at the stage, a very large saving might be effected.—D.V., 26/2/80. Will the Locomotive Engineer look into this matter? The expenses must be cut down, and before touching the wages and salaries, I wish to see whether economic working cannot be otherwise obtained.—Ch.A.G., 26/2/80.

I looked into this matter on receipt of the Commissioner's minute, and found that there were nineteen men employed on this service, besides the ganger. During the year about 20,000 tons of coal were placed on the coal-stages at Redfern; the same quantity being again transferred from the coal-stages to the engines, making in all 40,000 as having passed through the hands of these nineteen men in the year.

The

365 days of the year being reduced by $\left\{ \begin{array}{ll} 52 \; \text{Sundays} \\ 6 \; \text{Proclaimed holidays} \\ 4 \; \text{Exhibition} & \text{do} \end{array} \right.$

and 40,000 tons of coal unloaded in 303 days by nineteen men is equal to 132 tons in one day, which equals about 7 tons per man per day of 8 hours.

The limited accommodation will not admit of a more economical mode of working. The alterations taking place from time to time in the arrangement of the yard and sidings prevents the fixing of such mechanical appliances as would enable the coal to be handled with a minimum of men.—R.H.B., 19/10/80. Commissioner.

Seen. I trust that when the workshops are removed some more economical method of receiving and staging the coal and charging the engines with it will be effected. To pay over £2,000 a year for wages for handling 20,000 tons seems to me extravagant—equal to 2s. a ton.—Ch.A.G., 22/10/80. Resubmit end of June, 1881, to see whether better arrangements can be made, owing to alterations, which will be, I hope, by that time effected.—Ch.A.G., 22/10/80. Resubmitted, I/7/81.

I am disappointed that the progress in making the changes has been so slow. Indeed nothing for some time has been done apparently towards the erection of the new workshops which I expected by this time would have been nearly completed.—Ch.A.G., 7/8/81. End of September. Resubmitted, 4/10/81. Will Mr. Scott give attention to this matter in designing the accommodation at Eveleigh.—Ch.A.G., 24/10/81.

This will be attended to.—W. Scott, 26/10/81. Commissioner.
End of year, 8/11/81. Resubmitted, 3/1/82. Not only in Sydney but at our depôts I am strongly impressed with the idea that we are incurring an extravagant and unnecessary expenditure in connection with our coaling arrangements.—

D. V. 13/1/82

the idea that we are incurring an extravagant and unnecessary expenditure in connection with our coaling arrangements.—
D.V., 13/1/82.
End of month, 13/1/82.—Ch.A.G. Resubmitted, 1/2/82. Acting Locomotive Engineer for report on the whole question.—Ch.A.G., 6/2/82. Report forwarded.—J.M., 4/7/82.
Mr. Hyndman as regards Eveleigh. Please return at once.—G.C., per G.L., 5/10/82. Mr. Hyndman. Will Mr. Cowdery please send for men as to this matter.—R.A.H., 6/10/82. All arrangements have been made.—R.A.H., 20/10/82. Engineer for Existing Lines. Mr. Avern, as regards coaling stations in his district. Please return papers at once.—G.C., per G.L., 21/10/82. Mr. Avern. Seen.—F.M.A., 24/10/82. Mr. Cowdery.
Mr. Stephens, as regards coaling stations in his districts.—G.C., per G.L., 26/10/82. I am making inquiries from Locomotive Overseers Webster, Allan, and Close. I shall send in report as soon as I receive their answers.—R.D.S., 14/11/82. To Mr. Cowdery. Commissioner.—G.C., per G.L., 15/11/82. Mr. Midelton to see.—D.V., 16/11/82.
Seen. I should be very glad at any time to give Mr. Stephens any further information that he may require on this subject than that which I have stated herein, and as the system I propose can be adopted at any station without much trouble in the way of preparing a site, I hardly see the necessity for his applying to the Locomotive Inspectors for information when I can give it better and quicker, as I have well considered what is required at all the locomotive coaling depôts. I beg to refer you to your 82/19,214, Engineer for Existing Lines, 82/8,328, to which is attached herewith, also my report dated 5/11/83 herewith; also your 82/18,558 herewith.—Thos. MIDELTON, 5/1/83.

Minute from Mr. W. Scott to Commissioner.

Coaling arrangements for Locomotive Purposes.

As the question of coaling arrangements for locomotive purposes has been specially brought under your notice, I feel it my duty to report for your information upon what I consider the best system to adopt.

I may state that during my recent visit to America and England I paid special attention to this matter, and I have no hesitation in stating that it is the best that came under my notice.

As it will be seen by the tracing herewith, boxes to hold $\frac{1}{2}$ ton each, which are run on four wheels, are substituted for shoots. Through the wheels being round on the tread and close together they are easily turned in any direction. I would point out that this system is particularly well adapted for places like Eveleigh and Eskbank, where coaling platforms can easily be kept at a high level. In many places in England they go to the expense of making an elevated road upon which the waggons were run to the height required, so much do they prefer this system over any other. While I have no objection to the crane system being adopted for places where a high-level stage cannot be obtained readily, I very strongly recommend the box system where we have natural advantages in its favour.

I may also mention that the dump-cars would be specially suitable for dumping the coal on to the platform.

Mr. Cowdery's plan for Eveleigh—The stage and shoot plan will cost some £11,000. Mr. Midelton's crane and box plan will cost £750. What will Mr. Scott's plan cost? Mr. Cowdery, B.C., 15/3/84.—CH.A.G. Urgent.

Mr. Thomson for cost of Mr. Scott's plan.—G.C., per G.L., 18/3/84. feet by 35 feet.—M.T., 25/3/84. Engineer for Existing Railways. Estimated cost, £6,960, for coal-stage 600

Estimated cost of coal-stage, 600 feet by 35 feet, £6,960.—G.C., per G.L., 26/3/84. Commissioner.

What number of boxes, to hold ½ ton each, will Mr. Scott require to carry out his design of coaling at Eveleigh?—G., 29/3/84. Urgent. Question will be finally determined this month if possible.

The stage I recommend does not require to be more than 25 feet wide, so that Mr. Cowdery's estimate would be considerably reduced. It should be borne in mind that both Mr. Cowdery's and my scheme provide a stage to store coal on and a roof to cover it from the weather. The number of boxes required for my scheme will be 50 at £3 each, or a total of £150.—W. Scott, 7/4/84. The Commissioner. on and a roof to cover it from the of £150.—W. Scott, 7/4/84.

What will be reduced cost if stage be made 25 feet wide instead of 35 feet ?—Ch.A.G., 12/4/84. Urgent. Locomotive Engineer, B.C., 15/4/84.

I presume you will supply this information.—W.S., per R.J.S., 16/4/84. Mr. Thomson, for reduced cost of stage, if made 25 feet wide instead of 35 feet.—G.C., per G.L., 16/4/84. Estimated cost of coal stage 25 feet wide,—£5,980. The cost of a roof is not included in this estimate.—M.T., 22/4/84. Engineer for Existing Lines.

Estimated cost of coal-stage 25 feet wide, -£5,980. The cost of a roof is not included in this estimate. -G.C., per G.L., 22/4/84. Commissioner.

After giving this matter careful consideration, I recommend that the stage designed by Mr. Scott be adopted.—CH.A.G., 29/4/84.

Approved. -F.A.W., 30/4/84. Locomotive Engineer, first. Please return.—G.B., B.C., 30/4/84.

Seen.—W. Scott, 7/5/84. The Commissioner. per G.L., 12/5/84. Mr. Cowdery.—R.J.S., 9/5/84. Mr. Thomson tonote.—G.C.,

Noted. Am I to prepare contract plan and specification for this work?—M.T., 14/5/84. Engineer for Existing Railways. Yes.—G.C., per G.L., 15/5/84. Mr. Thomson. Plan and specification herewith.—M.T., 11/7/84. Engineer for Existing Railways.

Draft advertisement inviting tenders for the construction of coal-stage at Eveleigh herewith. Estimated cost, £4,420.—G.C., per G.L., 13/8/84. Commissioner. For approval of Minister.—Ch.A.G., 14/8/84. Approved.—G.R.D., 15/8/84. Advertisement sent to Herald, Telegraph, Evening News, Public Works, and Government Gazette.—T.S.L., 21/8/84. Mr. Cowdery,—R.J.S., B.C., 21/8/84. Noted.—G.C., per G.L., 22/8/84. Commr. Locomotive Engineer, B.C., 22/8/84.—L.P.I. Seen.—W. Scott, 25/8/84. Commr.

Department of Public Works, Railway Branch, Sydney, 13 August, 1884.

Tenders will be received at this Office until 11 o'clock on Tuesday, the 9th September, from persons willing to contract for the construction of a coaling stage at Eveleigh, Great Southern Railway.

Plan may be seen, and copies of specification, form of tender, schedule of quantities, and further particulars obtained, at the office of the Engineer for Existing Railways, 44, Fhillip-street, Sydney.

Tenders to be endorsed "Tender for Constructing Coal Stage at Eveleigh."

The Commissioner does not bind himself to accept the lowest or any Tender.

CHAS. A. GOODCHAP. Commissioner for Railways.

New South Wales Railways-New Workshops at Eveleigh.

Estimated cost of Coaling Stage and Hoppers $360' \times 42'$ 6" (not c	overed)	:	-
Cost of coaling stage, 600 feet long, as per estimate, 12/1/84 Deduct for 240 feet.	£	£11,735	
Hardwood piles, 2,800 feet at 4/	£ 560		
, girders, &c., 4,752 cubic feet at 5/	1,188		٠.
flooring, 4,420 cubic feet at 4/	884		- '
Sheet iron, 30 tons at £30	900		t
Plate iron, 6 tons at £25	150		
Stops, hinges, bolts, &c., 7 tons at £30	210		
Chain, $2\frac{1}{2}$ tons at £30	70		
Cast iron, 11 tons at £15	165		
Brickwork, 66 cubic yards at £3	198		
Excavation, 32 cubic yards at 2/6	4		•
•	4.329	1	
Contingencies	216		-
Cost of 240 feet	210	4,545	
Total estimated cost		£7,190	and the second

The estimate for this stage may be reduced to £7,200 without interfering with the arrangements, and may be increased as required.

I am quite satisfied that to coal the engines with the steam crane, as proposed, will not answer, as it will take too long. Plan herewith.—G.C., 18/2/84. Commr.

Estimate for new Coal Stage and Hoppers, Eveleigh. s. 0 0 11,735 Stage and Hoppers..... 4,096

G.C., 16/1/84.

M.T., 11/2/84.

Minute from W. Scott to Commissioner. Coal Stage, Eveleigh.

The plan of coal-stage herewith is somewhat similar to those I saw in America. In England the coaling is generally done by a small steam crane which lifts boxes holding 10 cwt. each, or by boxes holding a like quantity, which are run on a high-level stage from which they tip the coal into the tenders.

I believe the plan proposed by Mr. Cowdery will, with slight modifications in the sizes of the shoots, answer very well, but I would recommend that the stage be provided with shoots at both sides, and a stage 20 feet wide between and clear of the shoots for stacking coal on, as by this means engines can coal at both sides and afford necessary space required for keeping a quantity of coal in stock. At the present time we have two coal stages capable of holding 1,000 tons each in Sydney yard, whereas the shoot stages shown on plan only provides space for about 500 tons, which would of course be inadequate for our requirements. It is also very necessary that the coal-stage should have a roof over it, both for the protection of the men to be engaged on it and the coal from the weather.

W. SCOTT.

W. SCOTT 5/10/83.

Forward this report from Mr. Scott to Mr. Cowdery, who will carry out plan of the coaling stage referred to, with such modifications as are required by the terms of Mr. Scott's report.—Ch.A.G., 12/10/83.

Will Mr. Cowdery let me know to-day what progress is being made with the additional sidings at Newtown, and when the work will be sufficiently advanced to admit of the new sidings being used.

Mr. Cowdery is informed that the traffic is being blocked, owing in fact to the delay that is taking place in giving more accommodation at Newtown (there being some 70 trucks shut out encumbering Sydney yard, and delaying the return of trucks to the coal-fields at Lithgow), and partly to the undue use of trucks for locomotive purposes, owing to the want of coaling arrangements for Locomotive Branch.

I should like to have the engineer's undertaking that these evils shall be removed, and a time named within which they will be removed.

will be removed.

Please report in each case separately—"Newtown Sidings" and "Better Arrangements for Locomotive Cooling.

Please report in each case separately—"Newtown Sidings" and "Better Arrangements for Locomotive Coaling."

CH. A. G., 28/6/83.

The roads at Newtown are now being put in and the embankment made up, and will be completed in three weeks. Drawings for coaling are now being prepared, and will be ready to submit in a few days. This paper I put in my pocket a few days ago, and quite forgot it.—G. C., 5/7/83. Comr.

Seen. Perhaps the paper about the Newtown sidings is in the other pocket. Will Mr. Cowdery please look.—Ch. A.G., 9/7/83.

My minute has reference to the siding at Newtown, and also to better arrangement for coaling.—G. C., per G. L., 23/7/83. Comr.

23/7/83. Comr.

I assumed of course that the "roads" referred to were the roads at Eveleigh (the words "at Newtown" having been resulted the two matters might be reported upon separately. I will treat this added since), and more especially so as I requested the two matters might be reported upon separately. I will treat this paper as referring to the coaling arrangements. Where are the plans which on the 5th inst. it was said would be ready in a few days?—Ch.A.G., 26/7/83. Mr. Cowdery, B.C. Plan herewith.—G.C., per G.L., 1/8/83. Comr. Let me see it.—Ch.A.G., 26/8/83. The plan is to be carried out. I understand that Mr. Scott considers that it is as good at least as, if not better, than any plan of coaling he had seen on his visit of inspection.—Ch.A.G., 26/9/83. Ask Mr. Scott.

Minute from Mr. T. Midelton to Mr. W. Scott.

Coaling Engines, &c.—Reply to Traffic Manager's Minute of 23/7/83, on Commissioner's 83-6,056.

Coaling Engines, &c.—Reply to Traffic Manager's Minute of 23/7/83, on Commissioner's 83-6,056.

There can be no doubt about the correctness of the view taken by the Traffic Manager, viz., that "The Locomotive Department should certainly be best qualified to deal with the question of stages for the storage of coal." I am therefore surprised to hear that he does not think very highly of my "scheme of transporting coal from the mine to the locomotive engines," but I am still hopeful that he will think highly of it if he will read the accompanying papers as thoroughly, &c., as has been done by the head of the Department, and adhere to the wishes and directions expressed by him in his minute of 20/1/83, on L.E. 83-270.

If the Traffic Manager can suggest a better scheme than the one I propose for coaling engines, obtaining water, and disposing of ashes, I shall feel deeply indebted to him, and be exceedingly glad to hear what he has to say. It is evident from Mr. Read's minute of 23/7/83, that he misunderstands me; I certainly did not propose to make waggons like the G's to carry only fifteen coal-boxes, or 7 tons 10 cwt. of coal per waggon; what I proposed will tare 8 tons 10 cwt. (say 9 tons), and will carry thirty boxes and 15 tons of coal, or eighty-four bales of wool = 17 tons or 20 tons of rails, &c.; the four-wheeled waggon I suggested would carry 7 tons 10 cwt. of coal exclusive of boxes. We have no such waggons at present. This will meet Mr. Read's hypothetical waggon, which should be capable of carrying from 40 to 50 per cent. more than its own weight.

One would suppose from reading Mr. Read's minute that he never ran an empty waggon on any train, and if the charges are as he states, I think the sooner we do as is done in England, viz., run our own coal trains with our own engine the better; indeed, this is just what I would urge to be done as soon as possible; then all our difficulties re unloading

APPENDIX.

waggons, irregular supply of coal, real cost of haulage, &c., &c., would be at an end. I am sure we could haul a truck of coal from Eskbank to Nyngan, unload it (my way), and work the empty waggon back to Eskbank for less than 20s. 1d. per ton. The Great Eastern Railway Company (E) work 400 tons coal, train 180 miles, at 19 miles an hour, for \(\frac{5}{16} \)d. per ton per mile. The total weight of train would be about 700 tons, worked by one engine, and the empty waggons run back to the mine as I propose. These trains earn for the Company about 2s. 4\frac{1}{2}d. per train mile. The L. & N. W. Railway, work similar trains from Wigan to London, nearly 200 miles I think; surely it is not an uncommon thing to run empty waggons. I would ask the Manager to be good enough to read the papers again and see what I propose. I surely have as much interest in the shape of economy as any other officer, and if I have overlooked any point which would be advantageous to the Department, I am sure I shall be exceedingly grateful if he will enlighten me. I have shown that my coal-waggons are for my use when I want them, that is during the slack time (winter season); in the busy time they are available for traffic, and only weigh 8 tons 10 cwt., and will carry 17 tons; the boxes I use while the traffic use my waggon.

THOS. MIDELTON, 14/8/83.

Doubtless Mr. Midelton has well thought out his scheme, but I must say I fear it will not work as well as he anticipates. I believe the coal proprietors will object to load the boxes spread over the floor of a truck, as those on the far side will not be within reach of the shoot, besides which, if the boxes are to be substituted for coal-stages, there will be some difficulty in obtaining standing room for the quantity that would be required, irrespective of the question of cost of the boxes.—W. Scott, 20/8/83. The Commissioner.

Mr. Scott should ask Mr. Midelton if he has missed these contingencies in making his design.—Ch. A.G., 25/8/83.

Mr. Scott should ask Mr. Midelton, 28/8/83.

Mr. Midelton, 28/8/83.

I reply to the Commissioner's question. I have not missed the question of loading my waggons; indeed I see no difference between loading them than a D waggon; the operations are precisely the same. All the points raised by Locomotive Engineer are fully explained in former papers. I still am prepared to show that my plan is the most economical and convenient of any yet proposed.—T.M., 1/9/83. Locomotive Engineer.

Commissioner.—W. Scott, 1/9/83. Seen.—Ch.A.G., 10/9/83.

Seen. The Locomotive Department should certainly be best qualified to deal with the question of stages for the storage of coal; but I cannot say, from what I can gather from these papers, that I think very highly of Mr. Midelton's scheme of transporting the coal from the mines to the locomotive depôts.

I notice from his minute of 5/1/83 that the new waggon he proposes building for the purpose will be practically the same as the new G waggons that are being built for the Traffic Department, except that it will be built of iron. The design of the waggon is not with these papers, so I cannot tell what the tare will be; but I notice that he proposes it shall carry fifteen coal-boxes, each one of which will contain 10 cwt. of coal = 7 tons 10 cwt. per truck.

That is a very small load for a truck of such dimensions. The boxes themselves will doubtless weigh about 4 cwt. each; at least I should think so from the enclosed plan; but that is just like adding about 3 tons to the tare of the truck when carrying coal, and it involves a tremendous waste of engine power. It appears to me that a truck could be designed capable of carrying from 40 to 50 per cent. more than its own tare, and that any advantage which might be derived, either at the loading stations or in unloading at the locomotive depôts, will be far more than counterbalanced by carrying such a weight in iron. weight in iron.

weight in iron.

Take, for example, a truck of coal from Eskbank to Nyngan, the trainage upon which amounts to £1 0s. Id. per ton; if the boxes weighed 3 tons the Department would lose equal to £3 0s. 3d. in trainage. Even to Mount Victoria it would lose 5s. 9d., and I should think the whole truck of coal could be discharged for the latter sum.

I am, on another paper, reporting as to the merits of Eskbank as a coaling station in preference to Wallerawang. The return of the empty boxes does not appear from these papers to have been considered; but perhaps it has been, although it does not appear. It should be borne in mind that when they are on the trucks no other loading can be put in them.

W.V.R., 23/7/83.

Mr. Midelton's attention may be drawn to this matter through Mr. Scott.—Ch. A. G., 31/7/83. Mr. Midelton, are W. Scott.—28/83. Too. Freiner W. Scott.—28/83. Too. Freiner W. Scott.—28/83. Too. Freiner W. Scott.—28/83. Too. Freiner W. Scott.—28/83. Too. Freiner W. Scott.—28/83. Too. Freiner W. Scott.—28/83. Too. Freiner W. Scott.—28/83. Too. Freiner W. Scott.—28/83. Too. Freiner W. Scott.—28/83. Too. Freiner W. Scott.—28/83. Too. Freiner W. Scott.—28/83. Too. Freiner W. Scott.—28/83. Too. Freiner W. Scott.—28/83. Too. Freiner W. Scott.—28/83. Too. Freiner W. Scott.—28/83. Too. Sco

Mr. Midelton's attention may be drawn to this matter through Mr. Scott.—Ch. A. G., 31/7/83. Mr. Midelton's Report (in reply to Traffic Manager's minute), herewith.—T.M., 12/8/83. Loco. Engineer. per W. Scott, 2/8/83.

Memo. to Locomotive Engineer.

Department of Public Works, Railway Branch, Sydney, 19 June, 1883.

Your M.P. 83/268 and 83/270 sent to you on 22/1/83. Subject: Coaling

Pro Chief Clerk,

J.T.W. (Important.) Please return our M.P. No. 83/866. of Engines, &c.

Mr. W. Scott to The Commissioner.

Mr. W. Scott to The Commissioner.

Sir,

Mr. Scott said he would be in Sydney first week in the World be in Sydney first week in the World be in Sydney first week in the World be in Sydney first week in the World be in Sydney first week in the World be in Sydney first week in the World be in Sydney first week in the World be in Sydney first week in the World be in Sydney for the World be in Sydney first week in the World be in Sydney for the world be in Sydney for the world be in Sydney for the world be in Sydney for the world be in Sydney for the world be in Sydney for Sydney at Explain Sydney for Sydney for Sydney for Sydney for Sydney for Sydney for Sydney for Sydney for Sydney for Sydney for Sydney at Evelejn will be very captally sydney for Sydney for Sydney for Sydney at Evelejn will be very convenient for Sydney for Sydney at Evelejn will be very convenient for this arrangement.

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convenient for this arrangement. Сн. A Goodchap, Esq., Commissioner for Railways, Sydney

Yours &c., W. SCOTŢ.

Locomotive Engineer for report re coal appliances for loading engines.—Cn. A. G., 24/3/83.

Minute

Minute from Mr. T. Midelton to Commissioner.

Report on Mr. Scott's letter re Coaling Engines (your M.P. 83/5,734, herewith).

I AM sorry I cannot agree with Mr. Scott's view that the coaling arrangements he illustrates are best. To run the coal waggons up a grade so that they shall stand 10 feet higher than the tender to be coaled requires power and a lot of space. I really see no reason for doing this at all, as the small boxes on wheels could be filled without raising the coal waggons. The "stage" is costly and requires a lot of space, and when once fixed cannot well be abandoned. The coal is handled once more than is necessary. Indeed the system is pretty much the same as we now have, except that we do not use the boxes (on wheels). I do not see how engines are coaled from the reserve heap, unless it is shovelled on carelessly. The system could only be adopted in certain places—not anywhere, as it ought to be

than is necessary. Indeed the system. The wheels). I do not see how engines are coaled from the reserve heap, unless it is shown as a shown and it is shown as a show

I cannot trace that the Commissioner's M.P. 83/866 ever came here.—W.V.R., per D.K., 9/5/83. Acting Locomotive Engineer. The paper referred to was sent to Traffic Manager on 29/1/83.—R.J.S., 16/5/83. Mr. Berner. Will Traffic Manager please have search made.—G.B., B.C., 19/5/83. Not here.—W.V.R., per D.K., 29/5/83. Commissioner. Locomotive Engineer, B.C., 30/5/83.—G.B. The paper (Commissioner's 83/866) was sent to Traffic Manager 29/1/83, and has not since been in this office.—R.J.S., 2/6/83. Mr. Berner.

Acting Loco. Engineer's report on Mr. Scott's letter dated 9 February, London, re coaling engines. Will Loco. Engineer please have a further search and inquiry made for missing papers.—G.B., B.C., 16/6/83.

Nothing is known here of the papers referred to; they were sent to Traffic Manager on 29/1/83.—W. Scott, 20/6/83. Commissioner. Will Traffic Manager have a strict search made.—G.B., B.C., 22/6/83. A thorough search has been made, but without success.—W. V. Read, per D.K., 26/6/83. Mr. Berner. Will Mr. Landers please have a search made.—G.B., B.C., 28/6/83. Papers referred to herewith.—G.C., per G.L., 7/7/83. Comr. At last these papers have turned up. They were sent to Mr. Cowdery by Loco. Engineer on 26/1/83, to be returned at once through Traffic Manager, I now send them on to Traffic Manager,—G.B., B.C., 10/7/83.

[To the Evidence of Mr. George Downe, 21 October, 1884.]

COMPARATIVE statement of passenger accommodation, capacity, and dead weight in the various passenger rolling stock on the New South Wales Government Tramways.

Car No.	Class of carriage, single or double	Number of wheels.	Carry- ing capa-	Weight of vehicle empty.	Proportion of dead weight per	Number of compartments.	passen	ber of gers on ide.	p	of seat er enger.	I	r area er enger.	l r	contents er enger.	Cost of vehicle.
	decked.		city.	ompoj.	passenger.	n _N n comb	Inside.	Outside	Inside.	Outside	Inside.	Outside.	Inside.	Outside.	
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 $\textbf{Comparative} \ \ \textbf{statement of passenger accommodation, \&c.--} \textbf{continued.}$

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^{* 5} ton 5 cwt. engine; 3 ton car, approximate

[†] Engine and car included in the price

[‡] Car price is exclusive of freight and charges.

M.

[Ordered to be appended, 29th October, 1884.]

DUMP-CARS.

(Ordered from Carson Woods & Co.)

Ordered by the Legislative Assembly to be printed, 21 May, 1884.

RETURN to an Order of the Honorable the Legislative Assembly of New South Wales, dated 25th March, 1884, That there be laid upon the Table of this House,-

"Copies of all minutes, letters, reports, and other documents having reference to the ordering of a number of Dump-cars from Carson Woods & Co."

(Mr. Sydney Smith.)

Minute of Commissioner for Railways.

I have received from America some papers on the newly patented dump-cars in use there, and which seem to be a great improvement in regard to the unloading of certain descriptions of goods. I shall be glad if the Traffic Manager will peruse these papers and furnish me with a report. It seems that the patented arrangement for "dumping" the cars can be attached to trucks in use at a cost of about £6 per truck.

Minutes.

By Traffic Manager:—The principal traffic for which the kind of trucks would be available is coal, but at present we have neither platforms nor staiths on to which to shoot the coal; now it is carted direct from the trucks. Should it be approved to build staiths at stations as is done in England (and I would strongly recommend it), then the adoption of the principle would be of great service in the saving of time and labour, and in enabling of greater mileage being run by waggons. There are other smaller kinds of traffic for which the principle could be made use of if there were places on which to "shoot" it. The principle would appear to be well adapted for ballast waggons, and also for "loco." coal trucks; but of these the Engineer for Existing Lines and Loco. Engineer would be able to give an opinion.—W.V.R., 5/4/83. Commissioner.

Mr. Midelton, for early report.—G.B., B.C., 6/4/83.

Theoretically this dump-car looks very satisfactory and promises well, but when I fully consider the matter in its various manners of application I really cannot see much in it to recommend. It is like many other things not complete without some other appliance. I really cannot agree with Mr. Read that it is available for loco. coal traffic, for, as he says, it necessitates the erection of platforms, staiths, &c. If coal could be dumped direct in carts so that it could be hauled away to the coal-yards and then dumped again, that would be an advantage, but this could not be done without either raising the dumping waggon or lowering the coal cart. A good deep bottom coal waggon, such as used by the Midland and Great Northern Railway Companies at home, cannot well be beater for coal traffic, for domestic and manufactory purposes. I think the coal appliances at the various London depôts of the Midland Company the best I know of. If we could dump kerosene shale from these waggons direct into a ship's hold at Darling Harbour there would be an advantage, but at present this could be better done with stopper waggons as practis

Mr. J. C. Dibbs to The Commissioner for Railways.

Mr. J. C. Dibbs to The Commissioner for Railways.

Sir,

George-street, opposite Bridge-street, Sydney, 2 April, 1883.

As agent for the patentees I venture to submit for your information, plans, photographs, and particulars of the latest improvement in America for the economical working of Railways in the "United States Car Company's Screw Lever Dump and Coal car."

Enclosed herewith I beg to hand you,—

1. Printed descriptions and circulars,
2. Letter dated Columbus, Ohio, 17/3/82,
3. do Allston, 6/4/82,
4. do Joilett, 8/7/82,
5. do Rock Island, 19/7/82,
6. do do 21/7/82,
7. do Nelsonville, Ohio, 4/8/82,
8. do New York, 4/8/82,
9. do Nelsonville, Ohio, 24/8/82,
10. do Melrose. Mass., 21/10/82,
for your perusal, and to be returned after you have finished with them.
I am prepared to deal with you for the patent for this Colony.
A dump-car is now on its way from Boston, which I shall be prepared to place under offer to you, practical proof being of greater service in the advantages of the system than any amount of photographs and plans.
I may state that these cars are in large use on the leading lines of America.

I am, &c.,
I ONN C. DIRPO.

I am, &c., JOHN C. DIBBS, Agent of patentee.

Minutes.

The Traffic Manager for report.—D.V., 8/4/83.

I have already reported on these cars. Please see my minute on Commissioner's minute paper, 83-6,244. I could a few of this style of car at once for traffic purposes, and would like to be supplied.—W.V.R., 23/4/83. Commissioner. By acting Secretary for Public Works:—This car to be tried and taken if found suitable as an experiment.—A.S., /83. Inform. Mr. J. C. Dibbs informed, 22/6/84. Traffic Manager, B.C., 23/5/83.—G.B. Seen.—W.V.R., /83. Locomotive Engineer, B.C., 30/5/83.—G.B. Commissioner. 29/5/83.

The Commissioner for Railways to Mr. J. C. Dibbs.

Sir,

Department of Public Works, Railway Branch, Sydney, 22 May, 1883.

Referring to your letter of the 2nd ultimo, bringing under attention the United States Car Company's screw lever dump and coal car, I have the honor to inform you that the Department will be glad to test the car upon its receipt in the Colony, and if found suitable it will be purchased. I return description and circular as requested.

I have, &c.,

CH. A. GOODCHAP,

GOODCHAR, Commissioner for Railways. Mr.

Mr. J. C. Dibbs to The Commissioner for Railways.

Sir,

Referring to my letter dated 2nd April last, I have now to inform you that the dump-car mentioned therein has arrived, per "Julia," from Boston, and will be landed in the course of a few days. Will you please give me instructions where you wish me to deliver it.

University of the date of the day of t

as Agent.

Minute.

By Commissioner :- As Mr. Read is desirous of having one of these cars at work it may be accepted on trial.-

Mr. J. C. Dibbs to The Commissioner for Railways.

George-street, opposite Bridge-street, Sydney, 11 May, 1883.

Referring to my letters to you, dated 2nd April and 8th May, I have now to forward you the working plans of the dumping car which has been patented for this Colony.

I have &c

Minutes.

By Commissioner:—On other papers I have requested that this car may be received. It will be delivered at Darling Harbour; please have it put together and let me know when it is ready to be used.—Chas. A.G., 11/5/83. Loco. Engineer, Traffic Manager, Storekeeper.

Seen. Traffic Manager to see and please send on at once to Locomotive Engineer with plans or drawings.—A.R., 14/5/83. Traffic Manager. Seen.—W. V. Read, 16/5/83. Acting Locomotive Engineer. Seen.—J.M., 17/5/83.

Mr. J. C. Dibbs to The Commissioner for Railways.

Sir,

I have the honor to enclose herewith memo. of my account for dump-car which has been delivered to your Department, and I trust that it will be found so serviceable and effect so great a saving, both in cost and economical working as compared with the trucks now in use on your lines, that you will be induced to purchase the patentees' rights for New South Wales.

I have, &c.,

JOHN C. DIBBS.

[Enclosure.]

The Commissioner for Railways of New South Wales to John C. Dibbs,-

£ s. 200 0 ear framé 25 0 0Weighing 452lbs.

By Commissioner:—Write separate memo. to ask the Traffic Manager and Locomotive Engineer, stating that I wish an early trial to be made of this car. Ask Mr. Scott to say what progress has been made in the work of putting it together.—CH.A.G., 6/6/83.

Memo.—Referring to the dump-car (in pieces), supplied by Mr. J. C. Dibbs, I shall be glad if you will be good enough to report what progress has been made in the work of putting it together, as the Commissioner wishes an early trial of the car?—G.B., B.C., 8/6/83.

Locomotive engineer.

Mr. Midelton, for report.—R.J.S., 11/6/83. Report on separate paper sent to me by Traffic Manager: This car will be ready to-morrow (Tuesday), at 2 p.m.—J.M., 11/6/83. The Commissioner.—R.J.S., 11/6/83.

Memo.—Please note that a dump-car (in pieces) was supplied to the Department by Mr. Dibbs in May, and the Locomotive engineer has this day been asked to expedite the putting of it together in order that an early trial of the car may be made.—G.B., B.C., 8/6/83. Traffic Manager.

The car is now ready for inspection.—W. V. Read, 13/6/83. Commissioner.

By Commissioner:—Mr. Midelton says that the cost is reasonable. I recommend the car be taken.—Ch.A.G., 2/7/83.

By Secretary for Public Works:—Approved.—F.A.W., 5/7/83.

Locomotive Engineer,—Make out voucher at once, please.—G.B. Mr. Midelton to note and forward certificate.—
R.J.S., 7/7/83. Certificate herewith.—J.M., 9/7/83. Locomotive Engineer. The Examiner.—R.J.S., 11/7/83.

Voucher for £225 has been forwarded for payment.—J.P.F., 31/7/83. Secretary.

Mr. C. Woods to The Secretary for Public Works.

Sir,

With reference to the trial of the dump-car imported by me from the United States, which was officially tested upon Saturday last, I am now desirous to submit to you important drawings and printed descriptions relative thereto, and for this purpose desire a personal interview with yourself at such time as will quite suit your convenience, and which I beg you will appoint.

Soliciting the forward of a real of the sum of a real of the sum of t

Soliciting the favour of an early reply to this letter,

Believe me, &c., CARSON WOODS.

Minutes.

By Commissioner:—Will the Minister name a day for seeing Mr. Carson Woods.—Ch.A.G., 25/6/83. By Secretary for Public Works: Any day will suit me, but it had better be in the afternoon.—25/6/83.

Mr. C. Woods to The Traffic Manager.

The impromptu trial we had on Saturday last gave me no time to advise the Press of this City. Could I ask the favor of another show of this "dump-car," in this instance to be filled with stones or gravel, giving me a day or two's notice, so that I could arrange with the reporters to be present?

You will, I need not say, oblige me very much if this can be arranged.

I have, &c., CARSON WOODS.

I think Mr. Woods should have an opportunity of fully testing the car; would Commissioner please approve of Mr. Woods' application.—W.V.R., 26/6/83. Commissioner. Approved.—CH.A.G., 26/6/83.

Mr. C. Woods to The Commissioner for Railways.

Sir,

253, George-street, Sydney, 21 June, 1883.

In deference to the wishes of a number of gentlemen in the City and representatives of the Press who are desirous to see the working capabilities of the "dump-car," recently imported from America by me for the Government, will you do me the favor to order another trial to be publicly made of it, in this instance directing the car to be loaded with stones or gravel.

If you will kindly do this and give me a few days' notice before the trial takes place, so that I may notify these gentlemen to attend it, you will confer a great favor upon all concerned.

I have, &c., CARSON WOODS.

Minute.

By Commissioner:—I have authorized this on Mr. Woods' application, made to Mr. Read.—Ch.A.G., 26/6/83.

Messrs. Woods, Rich, & Co., to The Secretary for Public Works.

Our Mr. Carson Woods will do himself the honor of laying before you this afternoon the annexed list of papers

Our Mr. Carson Woods will do himself the honor of laying before you this afternoon the annexed list of papers relating to the American lever dump-car.

Mr. Muir, of the works of the Ontario Car Company of London, Ontario, in a letter addressed to us explains fully the value of this invention and we can add nothing to his letter.

Mr. Muir's name and the high standing he holds as a railway expert, being chief of the largest car-building establishment in Ontario, are safe guarantees for all the statements he makes.

The Gilbert Car Company of Troy, in the State of New York, endorse every word of Mr. Muir's letter.

We would respectfully call your attention to the fact that these Companies are not interested parties, as they are car-builders only and have no control of any patent. As Mr. Gilbert, junior, said to our Mr. Woods last January: "It does not matter to us what cars we build, but of course we are quick to appreciate a good thing." He referred, in saying so, to the American lever dump-car.

We have, &c.,

CARSON WOODS RICH & CO We have, &c., CARSON WOODS, RICH, & CO.

Contents.

Letter—Thomas Muir to Carson Woods, 31st January, 1883.
 Letter—F. Brownell to Carson Woods, 13th February, 1883.

[Enclosures.]

Mr. T. Muir to Mr. H. G. C. Woods.

Mr. T. Muir to Mr. H. G. C. Woods.

Dear Sir,

I presume by this time you have got far beyond New York, or London, England, and I conclude it is best to address you "at home." We are really not prepared to undertake passenger car work for foreign shipment, but would like to call your attention specially to the "dump-car" which we build. It is attracting very great attention from railway companies both here and in the States, and quickly superseding all other kinds of gondola and dump-cars. It is quickly discharged, not easily put out of order, very strong, serviceable for general traffic and construction purposes, and so saves a great deal of empty mileage. The railway companies here have adopted it for the iron ore business, which has developed to such vast proportions within the last year. At Kingston and Trenton they are erecting elevated roadways with pockets at each side, overhanging the wharves, so that these cars can be run up and dumped on either side into the pockets, and from the pockets into vessels. You will readily notice, however, that the system for dumping cars can be applied to all descriptions of car-bodies, either the ordinary platform without sides, for carrying poles, ties, cordwood, stone, timber, pig iron, &c., or with box sides for coal, sand, ore, &c., and also with high slotted sides for coke, corn-cobs, and such-like freight. From one of our cars, exhibited at Kingston, a labourer from the wharf discharged over 21 tons ore in a few seconds. The cars do not require to be uncoupled, a whole train could be discharged at one time by so many men (one upon each car), but two or three men could dump fifteen or twenty cars within 30 minutes and have train ready to take away. away.

Our price to-day for 20-ton cars without sides, delivered on track at London, is \$600; same car with sides, \$615.

Car and Engine Wheels.

Car and Engine Wheels.

We are now prepared to supply the steel-tired wheels, cast steel tires fused on double plate, cast-iron centres. This wheel here will cost, for 33-inch size, \$20 as against \$35 which we have now to pay for English or German "Bessemer" steel tired wheels with wrought-iron spokes, and we can guarantee them to give better mileage. Our ordinary chilled cast-iron wheels, 33-inch diameter, cost \$11 just now, but we are making a heavy "special passenger car wheel," with a thicker tire and of extra quality charcoal irons (weighing 570 lbs. against 520 ordinary wheel) for \$12.75, which are really A 1. The "Intercolonial" have taken them from us for their passenger cars.

I shall be glad to hear from you upon these matters. Any further particulars or other information desired I shall be happy to supply. A new sleeping car has been patented by a Halifax company, superior to "Pullman's" and very, very much better than another I know of. I have some idea of taking hold of it as a speciality. It is now before me upon favourable terms.

THOS. MUIR.

Mr. F. Brownell to Messrs. Carson Woods, Rich, & Co.

Mr. F. Brownell to Messrs. Carson Woods, Rich, & Co.

Gentlemen,

The United States Car Co., 48, Congress-street, Boston, Mass., 13 February, 1883.

We shipped the screw lever dump and coal car to you early in January, via barque "Julia," L. Jordan, master; we also sent several pieces castings, without charge, which were duplicates of what were with car, to replace any that may get broken in transit via vessel; we sent bill to Messrs. Richard Irwin & Co., New York City, as requested by you, and received a prompt remittance for balance due for car. We are meeting with grand success here with our car; the one we shipped to you was loaded and dumped and found to work perfectly; we trust you will see personally to it that the car is put together in a good workmanlike manner; then satisfactory results will follow, and one man be able to dump car, loaded with 20 tons, in 30 seconds with ease. The past week a Pennsylvania coal road placed an order with a reliable car-builder for 80 our patent screw lever cars. Since your Mr. Wood left here we have sold our patent, covering the entire Dominion of Canada, to some Montreal men, and they are forming a rolling-stock company with \$650,000 capital, to build our style dump-cars and lease them to Canada railroad companies. Let us hear from you and of your success with the car after its arrival.

FRANK BROWNELL,

Treasurer.

Treasurer.

Mr. C. Woods to The Secretary for Public Works.

Sir,

253, George street, Sydney, 19 July, 1883.

Not wishing to call upon you without your appointment, I should esteem it a great favour if you would name a day on which I could have the honor of an interview with you concerning the new American lever dump-car.

I have, &c., CARSON WOODS.

· Minutes.

By Secretary for Public Works:—Inform Mr. Woods that owing to illness of Commissioner for Railways I have not been able to go into his matter about the dump-car, but that if he will call, say on Monday week, I will be prepared.—F.A.W., 20/7/83. Railways, B.C., 21/7/83.—W.F.

The Under Secretary for Public Works to Mr. C. Woods.

Sir,

Referring to your letter of the 19th instant, I am directed to inform you that the Secretary for Public Works will receive you on Monday week, the 31st instant, on the subject of the new American lever dump-car.

I have, &c., W. FORDE, pro Under Secretary.

Mr. C. Woods to The Under Secretary for Public Works.

Sir,

35, North Pitt-street, Sydney, 24 July, 1883.

I am in receipt of your letter of the 21st instant, informing me that the Secretary for Public Works will receive me on Monday week, the 30th instant, on the subject of the new American lever dump-car.

I will be glad if you will inform the Secretary that I will do myself the honor to call upon him at 11 o'clock on that day.

CARSON WOODS.

Minutes.

Railways, B.C., 27/7/83.—W.F., pro Under Secretary.

By Secretary for Public Works:—I have arranged to send Mr. Wood a note naming a time when I can see him, after I have talked his affair over with the Commissioner for Railways.—F.A.W., 30/7/83. Mr. Goodchap, B.C., 2/8/83.—

By Commissioner:—I am of opinion that the principle of the dump-car can be made, with great advantage, to apply to the traffic of our lines, and if the right to use the patent in our shops can be acquired on reasonable terms I would advocate the purchase.—Ch. A.G., 6/8/83.

Mr. C. Woods to The Commissioner for Railways.

35, North Pitt-street, Sydney, 6 August, 1883. I had the honor of an interview with the Honorable the Minister for Public Works a week ago concerning the United States screw-lever dump-car.

The Honorable Mr. Wright said that no final answer could be given to me until he had discussed the matter with

John I have letters from the Victorian and Queensland Railway Departments, and am in correspondence with the New Zealand people concerning this car. These Departments are most anxious that I should go over there and submit to them proposals for the purchase of my dump-car, saying that if they will not purchase the patent I am certain of very heavy orders for it, from the reports which have come from America in its favour.

Their letters have given me a new idea.

Up till now I have been asking the Minister of Works to purchase the patent, but if the Department thinks it would suit them better to give an order for two hundred cars to be delivered in 9, 12, and 18 months, I will, on completion of that order, transfer the patent to the Railway Department, or, if preferable, as I first said, I will take a lump sum for the natent.

patent.

The Department, I understand, wants rolling-stock, and no better or finer car for any freight purpose can be had than the patent screw-lever dump-car.

I ask the favour of your submitting this offer to the Honorable the Minister for Works, and will be glad of an interview with the Honorable Mr. Wright or yourself to discuss this matter, at your earliest convenience.

One reason why I wish this interview soon is that I want to interview the Governments of Queensland and Victoria, who have written to me desiring to see me on the subject, but of course I could make much better terms with them if I should settle with the Government of New South Wales first.

Another reason is that a party of gentlemen here are talking of purchasing the patent, and of course if it is sold to them the Government here could get no such terms from them as I now offer.

Trusting to hear from you at your earliest convenience,

Trusting to hear from you at your earliest convenience,

I have, &c., CARSON WOODS.

Mr. H. Hudson to Mr. T. Midelton.

Sydney, 7 August, 1883.

In answer to your inquiry as to what we would build 200 dump-cars, similar to that now in Darling Harbour,
I beg to say we are prepared to build 200 cars similar in every respect for one hundred and eighty pounds each (£180).

Should you determine to use dump-cars it will be necessary to use side buffers to work in with the other rolling-stock; this will increase the cost to the extent of ten pounds (£10) per waggon.

Yours respectfully, HENRY HUDSON.

Minute.

By Commissioner:—I sent for this on receiving Mr. Woods' letter of 6th August. Mr. Woods names £190 as the price for the dump-car, and Hudson Brothers offer to construct at the same price. Mr. Woods, however, if we accept his offer, will grant us the use of the patent free, not only for the 200 trucks but for all trucks; otherwise he wants £6,000 for the patent for New South Wales.—Ch. A.G.

Mersrs. Woods, Rich, & Co. to The Secretary for Public Works.

Sir,

Sir,

Sir,

Str.

Str.

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Str.

Str.

Enclosed we take the liberty of sending you a copy of a letter with reference to the United States screw lever dump-car, which we sent the week before last to the Honorable the Commissioner for Railways.

This copy will explain our reason for again bringing this most valuable freight-carrying improvement and necessity under your notice. Two Colonial Governments have, by their authorized agents, requested us to lay before them our claims concerning this United States screw lever dump-car.

We are also in correspondence with New Zealand people, and from the tenor of their letters we have no doubt that if we do not part in each colony with our patent rights we shall get large Government orders for cars, which we would much rather receive than part with these patent rights.

We feel assured that if the Government will order cars as suggested in the enclosed letter, or purchase the patent, we will make a much better and higher settlement with the Governments with whom we are now in correspondence.

we rele assured that it the Government will order cars as suggested in the enclosed letter, or purchase the patent, we will make a much better and higher settlement with the Governments with whom we are now in correspondence.

Of the sale of this United States dump-car we speak with confidence. The master car-builders of the United States speak of it as a necessity. It is the most important and best freight car in the world we assert without fear of disproval. Therefore we hope that the enterprise of our Mr. Carson Woods, in going over to the United States and selecting it and purchasing the patent, bringing it out here and placing the car before the Government of this Colony first, at his own risk, will be recognised.

As our principal is most anxious to go to the other Colonies, where he is invited, as soon as possible, we would most respectfully ask for an interview to discuss the matter at your earliest convenience.

We have, &c., CARSON WOODS, RICH, & CO.

By Secretary for Public Works:—Let Mr. Woods be asked at what price he is prepared to sell his patent right:—1st, for New South Wales; 2nd, for Australia.—F.A.W., 15/8/83. The

With reference to your letter of the 6th instant, on the subject of the United States screw lever dump-car, I have the honor to inform you that I have brought your proposals under the attention of the Honorable the Secretary for Public Works, and he desires me to inquire upon what terms you are prepared to sell the patent right of the above car—

1. For the Colony of New South Wales?

2. For the whole of Australasia?

I have, &c., CH. A. GOODCHAP, Commissioner for Railways.

Mr. C. Woods to The Commissioner for Railways.

Pitt-street, Sydney, 17 August, 1883.

In reply to your letter of 16th instant, asking for the information of the Honorable the Secretary for Public

1. The price at which I am prepared to sell the rights of the dump-car patent for New South Wales,-

2. The price for the whole of Australasia,—

I have the honor to say that I am not in a position to dispose of the rights for the Australasian Colonies, as I have entered

I am willing to give the Government of New South Wales the use of the patent for the sum of £6,000 (six thousand pounds), but I am prepared to make a contract to build here 200 (two hundred) cars, at the rate of £190 (one hundred and ninety pounds) each, and include in such price the right to use the patent for the 200 (two hundred) cars, and for any other cars hereafter to be built or altered for the use of the Government of this Colony.

I have, &c., CARSON WOODS.

Minute of Secretary for Public Works.

I should much prefer having dump-cars made in the Colony, and should be disposed to arrange for purchase of Mr. Woods' patent right at a fair price, but I could not think of any such sum as £6,000 for a patent of this kind, that may at any moment be improved upon. An offer may be made for the patent right for New South Wales.

F.A.W., 23/8/83.

The Commissioner for Railways to Mr. C. Woods.

The Commissioner for Kallways to Etr. U. Woods.

Sir,

Department of Public Works, Railway Office, Sydney, 24 August, 1883.

In reference to your letter of the 17th instant, stating that you are willing to sell the rights of the dump-car patent, for the Colony of New South Wales, for the sum of £6,000, I have the honor, by direction of Mr. Secretary Wright, to inform you that he would prefer having the dump-cars made in the Colony, and is disposed to arrange for the purchase of the patent rights at a fair price, but cannot entertain any such sum as you name, viz, £6,000.

I have, &c.,

CH. A. GOODCHAP,

Commissioner for Railways.

Messrs. Woods, Rich, and Co. to The Secretary for Public Works.

Sir,

We most respectfully ask the favour of your decision with reference to "The United States screw lever dumpdas our Mr. Carson Woods is waiting for your reply, previously to starting for Queensland and New Zealand.

We have had from South Australia another communication, and are holding back our reply until we have the honor

of hearing from you.

In this communication we will not again enter into the merits of the car; these are acknowledged now by all rail-

In this communication we will not again enter into the increase road men in every part, down even to the improved bogies.

Our Mr. Carson Woods will have the honor to wait upon you for your reply at 11 30 this morning.

We have, &c.,

CARSON WOODS, RICH, & CO.

Minute. By Secretary for Public Works:—I will see Mr. Woods on Monday.—F.A.W., 25/8/83.

Messrs. Woods, Rich, & Co. to The Commissioner for Railways.

Sir,

We have the honor to enclose you copy of a letter we have this morning forwarded to the Honorable the Minister for Public Works in reference to "The United States screw lever dump-car," as our Mr. Carson Woods, having received invitations from the Governments of adjacent Colonies to submit his speciality for their inspection and approval, is most anxious to take his departure as soon as possible, and therefore desires to have the honor of your decision as speedily as possible.

We have &C.,

CARSON WOODS PICH & COLONIA COLORS AND COLORS A CARSON WOODS, RICH, & CO.

Messrs. Woods, Rich, & Co. to The Secretary for Public Works.

Messrs. Woods, Rich, & Co. to The Secretary for Public Works.

Sir,

We have the honor to inform you that, by our advices, received by this mail from America, it will be imperatively necessary that our Mr. Carson Woods should take his departure for that country so soon as he has attended the appointments he has with the other Colonial Governments.

In order, however, that he may receive the decision of your Government in reference to "The United States screw lever dump-car," he will wait upon you to-morrow, during the hours of 11 and 12, and if not then convenient for him to receive an audience will attend at the same time on Monday next, the 27th instant.

Should neither of the times stated suit your convenience, we should feel it a great honor, under the circumstances, if you would be pleased to name an hour when the proposed interview can take place.

We have, &c.,

CARSON WOODS, RICH, & CO.

By Secretary for Public Works:—I will see Mr. Woods on Monday.—F.A.W., 25/8/83. Mr. Woods asked to call.—G.B., 25/8/83.

Mr. C. Woods to The Commissioner for Railways.

Sir,

I have the honor to acknowledge receipt of your letter of 24th instant, in which you intimate that Mr. Secretary Wright would prefer to have the dump-cars made in the colony and is disposed to arrange for the purchase of the patent rights at what he considers a fair price, but cannot entertain such a sum as I have named.

In reply, I beg to state that I am prepared to build (200) two hundred cars in the Colony, inclusive of the patent rights, for the sum of (£190) one hundred and ninety pounds each, and thus meet the suggestion of Mr. Wright.

In submitting the offer of the patent for the use of the Colony I did so at a price of (£6,000) six thousand pounds, instead of (£10,000) ten thousand pounds, and I am not disposed to renew my offer at the price named. As I am leaving for Melbourne by the end of the week I should be glad to be favoured with an early reply.

I have, &c.,

I have, &c., CARSON WOODS.

APPENDIX.

Minute of Secretary for Public Works.

MR. WOODS' offers to build 200 dump-cars in the colony at a price, delivered complete, of £190 each, may be accepted, subject to the following conditions:—That the cars are equal in all respects to the one now in the possession of the Department; that they do not exceed the weight of the same; and that after delivery is complete the Government are to have the patent right for New South Wales for all cars they may build or have built by private firms.

F.A.W., 28/8/83.

The Commissioner for Railways to Mr. C. Woods.

Sir,

Department of Public Works, Railway Branch, Sydney, 28 August, 1883.

In reply to your letter of the 27th instant, having further reference to the proposal made by you with regard to the rights of the dump-car patent, and in which you state you are prepared to build 200 cars in the colony, inclusive of the patent rights, for the sum of £190 each, I have the honor to inform you that I have submitted the above proposal to the Honorable the Secretary for Public Works, and he approves of the acceptance of the same on condition that the cars are delivered complete on the railway line, Sydney, at the price named, and that they are in all respects equal to and of the same weight as the one now in possession of the Department. It is, as a further condition of the acceptance of your offer, that after delivery of the above cars is completed the Government are to have free and undisturbed use of the patentrights for New South Wales for all cars they may build or have built by private firms.

I have, &c.,

CHAS. A. GOODCHAP,

Commissioner for Railways.

Commissioner for Railways.

P.S.—You will have to enter into a bond for the due fulfilment of your contract, and to assure the Government in the undisturbed possession of the patent right as far as the Government Railways of New South Wales are concerned. The cars to be delivered, fifty in nine months and the remainder in lots of fifty at three, six, and nine months, within the succeeding nine months.—Chas. A.G., 28/8/83.

Mr. C. Woods to The Commissioner for Railways.

I have the honor and pleasure to acknowledge receipt of official acceptance of my tender for the supply to your Department of 200 screw lever dump-cars. I now await your instructions as to where and when the bond and other requirements you ask for in your letter can be signed and fulfilled by me.

I have, &c.,

Locomotive Engineer for specification. -G.B., 30/8/83. Urgent.

Minute from Locomotive Engineer to Commissioner for Railways. I would point out that the dump-car which, as it appears, is to be the pattern for the 200 to be built by, has a central buffer and coupler, for which the frame has been specially constructed. This will prevent their being used in connection with our present stock. Before preparing specification I shall be glad if you will inform me if the 200 are to be precisely similar to the pattern.

W. SCOTT 5/9/83.

Minutes.

By Commissioner:—No; they are to have buffers and draw-gear similar to our rolling stock, and a sketch should be sent to the Contractors showing what is required. See that the present dimensions are such that they will not interfere with our platforms, &c., and alter as required.—Chas. A. G., 7/9/83. Locomotive Engineer, B.C. Please have a specification prepared accordingly for approval of the Locomotive Engineer.—R.J.S. Mr. Middlton. Please make sketch of principal dimensions of dump-car. See if it will clear if made 9.0 wide; make tracing of continuous draw-gear, and place diagonals in underframe to suit side buffers, &c., and let me see it.—J.M., 12/9/83. Mr. Chambers. Tracing No. 852, showing draw-gear, buffers, side chains, and maximum width of waggon body, herewith.—J.C., 2/10/83. I think if the builders of these dump-cars keep to the tracing 852, the waggons will gear nicely with our present stock; the width of vehicle must not exceed 9 feet in any part. As the cars are to be built to the pattern one (with the exception of what is shown on tracing 852) I hardly think a specification necessary, as it may involve complication.—J.M., 2/10/83. Locomotive Engineer.

By Locomotive Engineer:—Tracing No. 852, showing deviations required from the dump-car, is in the possession of the Department.—W. Scott, 2/10/83. Commissioner.

Mr. C. Woods to The Commissioner for Railways.

Sir,

35, New Pitt-street, Sydney, I October, 1883.

I have the honor to inform you that I purpose leaving for America on the 4th instant, to make the necessary arrangements for the completion of my contract with your Department for 200 dump-cars. Should you still think a bond necessary I am quite willing and ready to sign but upon that date I must sail. I need scarcely say that my services while in other countries are freely at your command, and any information you may require I will gladly ascertain and advise you by mail by mail.

I have, &c., CARSON WOODS.

Locomotive Engineer for specification.—G.B., B.C., 5/10/83.

The Commissioner for Railways to Mr. C. Woods.

Sir, Department of Public Works, Railway Branch, Sydney, 4 October, 1883.

Referring to your contract for the supply of 200 dump-cars to this Department, I have the honor to forward herein a tracing, showing the maximum width of body (over all) and standard dimensions, &c., of buffers and draw gear for

I may add that the usual bond will be prepared in due course.

I have, &c., CH. A. GOODCHAP, Commissioner for Railways.

Minutes.

I saw Mr. Berner to-day re specification, as I thought had slightly misunderstood the matter. As these cars are to be made to the sample vehicle now in our possession (except as regards buffer and draw gear, a drawing of which we have sent to Mr. Carson Woods), we hardly want a specification. I think if we specify anything more than we have, it will amount to making writing drawings of the car, and a specification to suit, and as there will be a difficulty (with our double buffers, &c.) in introducing the dumping gear or mechanism, I think we should leave the matter to the manufacturers.—

J.M., 16/10/83. Loco. Engineer.

I think the tracing sent, and the pattern waggon is all that is required.—W. Scott, 18/10/83. The Commissioner.

Mr. M'Lachlan for bond instructions.—G.B., B.C., 23/10/83. Herewith.—H. M'L., 17/11/84.

The

The Commissioner for Railways to The Crown Solicitor.

I have to inform you that a contract has been entered into with Mr. Carson Woods for the supply of 200 dump-cars, to be manufactured in the Colony, at £190 each. Each vehicle is to be made the same in all respects, with the exception of buffers, draw-bar, and head-stock, as the screw lever dump-car now in the possession of the Department. The buffers, draw-bar, and headstock to be completed according to drawing sent to the Contractor. The whole of the timber work to be of the same quality and description as that in the sample waggon.

The whole of the metal work to be forged or cast as the case may be, and manufactured in the Colony, and to be as far as possible of the same design and dimensions to that of the sample waggon.

The vehicles must be finished in the most substantial and workmanlike manner, and in every respect to the entire satisfaction of the Locomotive Engineer.

satisfaction of the Locomotive Engineer

50 18

The Contractor shall forfeit and pay to the Commissioner by way of liquidated damages, to be deducted from the moneys due to the Contractor, the sum of 1% on the contract price of each article for each week that each vehicle shall remain undelivered after the respective dates named.

Payments to be made on the certificate of the Locomotive Engineer that the vehicles have been supplied to his

satisfaction.

After the contract is completed the Government is to have the patent rights for New South Wales of the American lever dump-car.
Please give directions for the preparation of the necessary bond.

G.B., pro Commissioner, 17/11/83.

Minutes.

Will the Commissioner please forward the specification, general conditions, and tender in the usual way.—J.W., 30/11/83. The Commissioner for Railways, Sydney.

This contract was not made in the usual way, i.e., by calling for public tenders; consequently no specification was prepared, or Gazette notice. The conditions under which the contract was accepted are given in this paper. A copy of Mr. Woods' letter, agreeing to make the cars, is herewith.—G.B., pro Commissioner, 26/11/83. Crown Solicitor.

Minute from Traffic Manager to Commissioner for Railways.

I should be glad to know whether any decision has been arrived at with regard to the United States Car Company's dump-car? It is standing in one of the sidings in Redfern Yard. Will the Commissioner please say. W. V. READ, 2/11/83.

Minutes.

Locomotive Engineer, B.C., 7/11/83.—G.B.

By Locomotive Engineer:—As Mr. Carson Woods has a contract to supply 200 more of the same pattern; I think it would be well not to use it until the others are supplied.—W. Scorr, 14/11/83. Commissioner.

By Secretary for Railways:—Traffic Manager to see. If it belongs to us and can be used I see no reason for its being left out of work.—D.V., 16/11/83.

By Traffic Manager:—It appears from Commissioner's 83-10,412, attached, that this car has been purchased by the Department, and it would be as well to use it if there is no objection by Locomotive Branch. The load it can carry should be marked on it.—W.V.R., 21/11/83. Locomotive Engineer. Mr. Midelton.—R.J.S., 23/11/83.

I have twice tried to use dump-car for coaling locomotive engines, but it will not clear Darling Harbour Wharf Platform, so I am told. It has no side buffers, and the centre draw-bar and buffers do not match our stock; considerable alteration will have to be made if we are to use it regularly in traffic, and enough scheming required to construct a new car. It is marked to carry 20,000 lbs., in two places.—J.M., 29/11/83. Locomotive Engineer. Traffic Manager.—R.J.S., 29/11/83. 29/11/83.

By Traffic Manager:—Seen. I shall be glad if the Locomotive Engineer will let me know when the car is ready for traffic.—W. V. Read, 12/12/83. Locomotive Engineer. Mr. Midelton to say.—R.J.S., 14/12/83. Mr. Bourn to see me hereon.—J.M., 17/12/83. Please see Mr. Bourn's report of 29/12/83 herewith.—J.M., 5/1/84. Locomotive Engineer.

I beg to report that previous to the dump-car being allowed to be used by the Traffic Department, it is necessary that it should be taken to pieces and reconstructed, as at present it is too wide and will not pass the platforms; it also requires to be fitted with buffers and draw-gear to suit the present rolling stock now in use.—E. Bourn, 29/12/83. Locomotive Overseer.

Locomotive Overseer.

By Locomotive Engineer:—Under these circumstances I cannot recommend that it be used, as the contractors who have tendered to build to this pattern might make it a cause of complaint.—W. Scott, 16/1/84. Traffic Manager.

By Traffic Manager:—The Commissioner should be informed.—W.V.R., 19/1/84. Locomotive Engineer. Forwarded for the Commissioner's information.—R.J.S., 23/1/84.

By Commissioner:—It had better be made to suit the requirements, in order that those to be supplied may be made suitable. I do not understand Mr. Scott's report, which seems to imply that the present car is unsuitable, and yet it must not be altered because the contractors are to build others from this pattern; that surely cannot be the case, but Mr. Scott's minute reads like it.—Ch.A.G., 25/1/84.

By Locomotive Engineer:—I can assure the Commissioner that he only does me justice in assuming that I did not intend that meaning to be conveyed by my minute. Looking at the fact that this particular truck is (excepting in the matter of side buffers and reduced width) the pattern to which Mr. Woods has contracted to supply 200 more, I did not consider it prudent to alter in any way the pattern truck until I saw some of the new ones, particularly when I find that the alteration of the under frame to enable side buffers to be used would make it an unsatisfactory pattern to work to. I also assumed that Mr. Woods would have the frames of those to be built specially designed for side buffers.—W. Scott, 31/1/84. The Commissioner.

Seen.—Ch.A.G., 8/2/84.

Minute from Traffic Manager to Commissioner for Railways.

American Dump-car.

I BEG to refer the Commissioner to his minute paper 83-21,488, and to inform him that the lately imported dump-car, referred to therein, cannot be made use of until the draw gear is altered and side-buffers provided.

In a conversation I had with Mr. Augustus Morris recently, he informed me that these waggons were not a success in America.

It is, however, very important that this car should be brought into use at once, in order that any defects may be noted and corrected in those now being imported, and I should be glad if the Commissioner would please give instructions to have the necessary alterations carried out without delay. W. V. READ, 14/1/84.

Minutes.

By Commissioner:—The dump-car should be made available at once.—Ch.A.G., 21/1/84. Report in one month if it be not ready. Traffic Manager, B.C.—G.B. Kindly return the paper in a month. In the meantime the Locomotive Engineer should see it so that he can have the truck made available—W.V.R., 22/1/84. Commissioner. Loco. Engineer, B.C., 23/1/84.—G.B. See Minute of 31/1/84, on other papers.—W.S. (per R.J.S.), 31/1/84.

APPENDIX.

Extract from Locomotive Engineer's minute re coaling arrangements for locomotive purposes.

I may also mention that the dump-cars would be specially suitable for dumping the coal on to the platform.

W. SCOTT, 10/3/84.

APPENDIX.

Specification of Carson Woods, of No. 253, George-street, Sydney, in the Colony of New South Wales, importer, the agent of Matthew Van Wormer, of Dayton, Ohio, one of the United States of America, the author or designer of an invention entitled "Improvements in railway cars or waggons."

My invention relates to improvements in the class of a signer of the colony of New South Wales, importer, the author or designer of an invention relates to improvements in the class of the colony of New South Wales, importer, the

invention entitled "Improvements in railway cars or waggons."

My invention relates to improvements in that class of railway cars or waggons known as "dumping cars," which are capable of being tilted sideways on their trucks to empty their loads in bulk.

The novelty of the invention consists in the construction and combination of the devices employed as will be herewith set forth and specifically claimed.

In the accompanying drawings figure 1 is a side elevation of my improved dumping car; figure 2 is an end view of the same; figure 3 is a plain view of the body, taken off the trucks and inverted; figure 4 is a sectional end view through the line x x of figure 1; figure 5 is a sectional side elevation through the line y y of figure 2.

The trucks A may be of the usual or any suitable construction.

Upon the top of each upper truck-timber at its middle is secured the centre body bearing plate B (shown at figure 6 in perspective). This plate is concave, as represented, and has a central-frusto-conoidal boss or extension a, through which the king-bolt passes down into the truck-timber and serves to lock the plate B thereto. The head of the king-bolt b is shaped to complete the cone of which the bars upon the plate is a frustum, as seen in figure 6. These plates B and their king-bolts form centre bearings for the body of the car. Upon each side of the plate B flat metal plates C are secured to the upper truck-timber, and through each is one or more apertures forming recesses c, whose office will be hereinafter explained. explained.

Bolted to the end of each upper truck-timber in any suitable manner, is a segmental rack D with the concave side

uppermost as shown.

The platform, or bed, of my improved car-body is composed essentially of the side beams, E; end beams, F; longitudinal central beams, G; and transverse central transoms or beams H, supported by the beams G.

Directly over each truck-timber is a rocker piece I flat on top, and convex on its under surface, the whole forming the segment of an ellipse, as represented. These rocker pieces may be of wood, with the beams G mortised through them, and they are further supported by metal straps or plates J and K, of which the former passes over and the latter under the rockers I, and have their outer ends, which are turned down, bolted to the side timbers E. While the under surfaces of the plate K are convex to conform to the rockers I, their outer ends are concave as represented, for a purpose to be hereinafter explained. To strengthen and stiffen this framework, I employ the girder rods f as represented, and to form a further support for the bed-planks I use metal straps L in pairs, which are bolted to the end timbers F as represented, pass over the plates J and K, and over and under supporting-blocks, secured upon the transverse beams H.

Securely bolted, or otherwise fastened to the lower side of the rockers I, at their middle, are centre-bearing plates M, with convex laver surfaces, and having in each a central recess or aperture g, to receive and contain the heads of the kingbolts and the frusto-conoidal stem of the plate B. It is thus clearly seen that the body of the car by the intervention of the plates M rests upon the plates B as central bearings, and at the same time the king-bolts and the stems of the plates B form pivots for each of the trucks while turning curves.

To dump the car to either side I employ a central longitudinal shaft N, which is journaled in hangers h, supported

pivots for each of the trucks while turning curves.

To dump the car to either side I employ a central longitudinal shaft N, which is journaled in hangers h, supported by the beams G, and is further supported by passing through openings in the rockers I and beams H. This shaft carrries two pinions O, keyed to it, which engage respectively with each of the racks D. The teeth of the pinions are tapered at each side, so as to permit of the play between the parts requisite in turning curves. Keyed upon the end of the shaft N, just under the platform at one end of the car, is a worm-wheel P, which engages with a worm R, secured upon a vertical shaft S, passing up through the platform, and provided with a crank or hand-wheel T. By turning said hand-wheel, the shaft N is caused to rotate, and the car is tilted to either side desired. By the employment of this dumping gear with a worm-shaft, a positive lock is always secured, no matter in what position the body of the car may be. It cannot move from that position without a breakage of some of the parts. To assist, however, in retaining the car in an upright position, and lessen the strain upon the dumping gear, I employ rests or side beams U which consist of cylindrical metal pieces, carrying pivoted friction rollers i in their lower ends as seen. These supports, figure 7, are recessed in metal sockets secured in the rockers I on each side of the centre bearings, and are provided with laterally-projecting pins j, which, travelling in slots in the sockets, prevent the supports from falling out of the said sockets, and further prevent them from turning-therein. These supports are sufficiently long, also, that when dropped down to their lowest extent, their rollers I rest upon the plates C. To lock them in this position so as to enable them to support the body of the car on each side, I employ rods k, having their forward ends connected to levers W, which, pivoted below the platform, pass up through openings in the same. Each of these rods k which have supported in the so

are snited by their levers the sndes i will pass over the tops of the supports, and prevent their from ascending into their sockets.

When it is desired to dump the car, it is only necessary to unlock the supports on the dumping side of the car, when by turning the hand-wheel as aforesaid, the car will turn and empty itself. During this tilting of the car the supports, or side bearings which were unlocked, will be pressed up into their sockets out of the way, and will not interfere with the dumping. When the car, after being dumped, is turned back into a horizontal position, the supports will fall of their own gravity back to their former position, when they can be locked as aforesaid.

In order to prevent the car, while in the act of being dumped, from being disengaged from its centre bearings, I employ studs or dowels m, which are secured in any manner desired, to the underside of the rocker-plates K between the supports U and the centre bearings. These dowels, while the car is tilting, enter the apertures c in the plates B, and serve to prevent the car from slipping or being displaced. The apertures c, as seen are sufficiently wide to receive the dowels even though the car, when being dumped, stood on a short curve.

Especial attention is called to the floor-planks X, which are raised, as seen, just over the rockers, for the purpose of enabling the car to be tilted over further without raising the bed higher than other cars of this class, or of ordinary cars. This result is further contributed to by the curved portions p of the rocker plates K, and by the employment of the strap supports L which, lying upon each other, occupy very little space.

The sides of the cars are movable gates A¹, which are held in slotted posts or supports B¹, and these posts form journals for shafts C¹, as seen. The gates A¹, of which I employ two or more on a side, which are free to slide up and down in the slots of the posts, are connected to the shaft C¹ by chains, ropes, or wire cords D¹, as shown.

By employing permanent or re

by their own gravity.

Another valuable feature of my invention consists of a director board for causing the dumped material, as gravel for instance, to fall close to the rails of the track. This I accomplish by hinging a board E¹ to the side beams by means of pivoted bracket-arms F¹ arranged as shown. By means of these swinging arms the board when not wanted for use, can be swung around so as to lie close to the side of the car, in which position the contents of the car would pass over it while being dumped, or it can be swung out as shown in figure 4, when it could act as a director to throw the load of the car close to

the rails.

It will be observed that the dowels upon the other side of the rocker could be transferred to the plates C, and in that case the recesses c would be formed in the plate K of the rocker.

My invention further relates to the construction of the car-bed; to the transoms; to the construction of the rockers and means whereby the car, after dumping, shall right itself up again; to a device for preventing the separation of the car-bed from the trucks; to the mechanism for dumping at either side of the car; to the means for fastening pulleys to the end of the truck-timbers; to the mechanism for fastening and unfastening the doors of the car; to the construction of the doors; to the end posts, and means for fastening the car-bed; to the centre posts, and the means for fastening them to the car-bed; to the side-bearings and their application, so as to keep the car-bed in position, and to prevent undue friction while the car

car is moving around curves of the track; in combining with the draw-bar a rocker whereby the dumping may take place with the ordinary draw-bar without need of uncoupling the car from the other cars of the train; in an improved brake mechanism; in a special construction of clutch-pulley with grooves and sockets adapted to receive and hold the links of the chain, and whereby the revolving of the pulley to gradually tilt the car will operate the chain, and prevent its slipping; in means for dumping, either slowly or suddenly as desired; in a special construction of guide-rollers for the chains; in combining the shatt of the clutch-coupling pulleys, and their chain and its guide-pulleys with a worm, gear, or screw-lever for operating the same, and in other particulars hereinafter set forth.

In the drawings, figure 9 is an elevation of another improved dump-car; figure 10, a bottom view with one truck removed; figure 11, a cross section through line xx of figure 10; figure 12, a top view of one of the trucks; figure 13, aplan of the couplers, and figure 14, a section through yy, figures 16 and 16, details showing the side bearings; figures 19 and 20, brake mechanism; figure 21, partial top view, parts being broken away, showing the coupler pulleys and their connections; figure 22, fragment enlarged of convex stationary bed; figures 23, 24, 25, 26, and 27, details.

Of the timbers of the car-frame, 11 represents cross-sills or headers, extending from the longitudinal sills 2 and 5, and framed or secured into the same; 3 and 4 represent shorter sills framed into the cross sills, or header 1, and not as long as the outside sills 6, 7, or the sills 2, 5, the objects of making them shorter being for the purpose of giving room or space for the worm and gear of the screw-lever or other appropriate mechanism which operates the chain-shaft hereinafter described, and also to allow sufficient space without weakening the car-bed for such bed to dump over the wheels, oilboxes, and truck timbers, without coming in contact with

timbers or irons, or with the oil-boxes when discharging any material from the car. These transoms or braces a also make the construction strong and safe.

The rockers and their arched beds are such, that after dumping, the car-bed will right itself up again, and they are constructed as follows:—9 representing the rockers, their stationary convex bed being shown at 10; each may be all of iron, or of iron and wood. The rockers 9 have each a short central downwardly projecting stud or boss b, which may be of ball shape if desired, and also a series of sockets c², c², adapted to receive the cogs c c, the object of this being that when the car is turned or dumped they will prevent the car-bed from getting out of position and at the same time permit the tilting of the bed far enough over, and to a degree of pitch sufficient to discharge coal or other material, without the risk of coming in contact with either the trucks, truck-irons, oil-boxes, or wheels, and also to permit the car to right itself up after dumping. The car or car-bed will automatically right itself after dumping, because when it is tilted or turned over to dump and is left free to return by disengagement of the V-shaped couplings on the shaft or shafts, 12, hereinafter described, the fulcrum or bearing-point of the rocker is no longer at the boss b and its central socket, but has been shifted to one or more of cogs and to their sockets, thus giving a long leverage for that side of the car or bed which is for the time being raised up, and this causes that side to fall by its own weight till the car is again level. It will be seen that any mechanical equivalent of the sockets, teeth or cogs, and boss, which will allow the same action and result, may be substituted for them. A bar of iron or wood represented at 11, is designed to hold the car-bed from separating from the trucks while the car is in transit or motion. It is bolted or fastened to the truck-timber, or to the lower convex bed 10, and extended upwards to be attached to either the upper rocke

or of wood represented at 1, is designed to not the car-bed from separating from the trucks while the car is in transit or motion. It is botted or fastened to the truck-timber; or to the lower convex bed 10, and extended upwards to be attached to either the upper rocker 9, or to the car-bed, or to a viron or wood fastened thereto.

A shaft (or shafts if desired) marked 12, runs lengthwise of the car under its floor, either its full length or a sufficient distance for receiving at its end or ends coupling pulleys e e' having V-shaped teeth on their adjacent sides for engaging with each other. On this shaft 12 (if but one be used) are affixed permanently one near each end and to revolve with it two clutches e having V-shaped teeth as shown designed, each to be engaged or disengaged at will from its fellow, which is provided with similar V-shaped teeth and placed loosely upon the shaft and adapted to be shifted in or out of engagement with the fixed clutch e (see enlarged views, figures 13 and 20). This coupling apparatus is to be located beneath the transom 8, so that the latter shall in no wise interfere with its free revolution. A chain f (figures 9 and 10) passing over and clinging to the loose pulley e' (the particular construction of which pulley will be hereinater fully described) and winding partly around said pulley passes thence under guide pulleys p & adjustable if desired, secured to the rocker or to the timbers of the car-bed. This car also passes under guide pulleys h & (see figures 9, 11, and 25) attached respectively to the opposite ends of the truck-timbers or frame; thence the ends of the chain respectively pass up to and are fastened upon the car-bed, or upon the outside sills 6, 7, or to the car floor.

For the purpose of applying the pulleys h h to the outer ends of the truck timbers so as not to interfere with the proper action of the car-springs, I fasten to the end of the under-truck timber so have it is said strap or bar i, such slot allowing the springs between the two truck-timbers to wo

The upright end posts, 17, of the car and their connections are as follows: They rest respectively upon the outside sills, 6, 7, and extend down on the side thereof a sufficient distance to admit of being strongly secured thereto by bolts or otherwise and extend far enough above the doors to permit the same to be hinged or attached thereto. Said posts, 17, are grooved or recessed on their inner corner (see figure 23) to receive the end board of the car so as to leave the inner face of said board or plank flush or even with the inside of the post, thereby preventing any obstruction when unloading, and also to make the car more firm and strong. A rod s of metal or wood extends across the end of the car, and through both these posts to hold them and the end plank or board t firmly in their places. There is also an iron or wooden brace u extending from each post to the end sill or floor to aid in bracing and holding said post, 17, to its place. The upright centre posts, 18, also rest and are secured respectively upon the outside and top of a sill, and each is further secured by a metal plate u which extends down and is fastened to the inside of the outside sills of the car, as seen in figure 24. A vetal rod v passes through both these opposite centre posts 18, 18 under the floor and above the sills, and is tightened by appropriate nuts or equivalent means for firmly holding the posts in place.

The side-bearings for holding the posts in place.

The side-bearings for holding the posts in place.

The side-bearings for holding the car and keeping it in position are represented at 19 in figure 11 and in an enlarged view in figures 17 and 18, and are as follows:—They severally consist of a bar of iron or wood adapted to rest on the truck-timber and extending upward and movably secured to the rocker or to the sills or transoms or floor of the car. Through a hole x having a slot or keyway y in the upper end of each side bearing passes a shaft or bolt z with a key or pin a? thereon This shaft is secured to the car as above

The outer end of the shaft or bolt z receives an arm b^3 secured to it by a pin or screw for the purpose of permitting the said shaft and bearing to be moved by appropriate connections extending upward, and connecting with a rod e^3 , which extends and is attached to both side bearings on one side of the car on the front and rear trucks, said rod extending to the end of the car, and being there attached to a lever f^3 for the purpose of operating both side-bearings, which are upon one side of the car, at one act by the same lever to allow the dumping. Similar side-bearings and attachments are on the other

side of the car, at one act by the same lever to allow the dumping. Similar side bearings and attachments are on the other side of the car.

On the under side of each draw-bar, 20, is an arched or curved rocker, 20*, the object of which is to permit the car to be tilted for dumping or otherwise without the need of uncoupling any car from the other cars of the train. (See figures 15 and 16.) This rocker may rest on a curved bed, as shown in figure 16.

I will now describe my improved brake mechanism, consisting of a combination of levers, chains, and pulleys, as follows, referring more particularly to figures 12 and 25; a bar 21 of metal or wood is also attached to the truck timber by an arm 22 and bolts and screws is also attached to the brake rod or bar f² by an arm, 23, and bolts or screws. The two brake bars of each truck coincidently upon the inner perimeter of all the wheels of each truck by means of the following connections: This bar or lever, 21, which is connected to and immediately operates one of the brake bars and which, as above stated, is fulcrumed upon the lower truck-beam, is also connected by means of a rod or bar i² with one end of a lever j² at the opposite side of said truck-beam, the other end of said lever connecting with the other brake bar g² which acts upon the other two wheels of the same truck, thus giving a movement in opposite directions at the same time to the two brake-bars. Provision is made for adjusting the throw of the levers which actuate the brakes. The brakes and their bars are suspended by links k² k² from springing or yielding straps b² secured upon the truck beams. This affords a yielding and play to meet varying exigencies, and a self-adaptation to the curvature of the wheel. To the upper end of bar 21 (see figures 19 and 20) is attached a chain (or a rod), which connects with a lever m², one end of said lever being fastened to the sill or floor of the car, such chain passing round a pulley p² on or near the end of the car, and fastened at its extremity to an upright ha

this purpose, a loose one.

For connecting and disconnecting these couplers e e! there is an annular groove e! around the periphery of the loose pulley e! into which projects a pin upon a shifting lever 24 (see figure 21) pivoted to a rod u², extending lengthwise of the car, for operating both couplings if desired, said rod being actuated by means of a hand-lever at the end of the car or other convenient place. When by means of this lever the couplings are disengaged or uncoupled, the pulley e! may revolve suddenly as a loose pulley, in order to allow the car-bed to discharge its load itself, when it will come back or return of itself to its upright position. When the coupling pulleys are coupled or engaged, then the car may be tilted slowly. This capacity for sudden dumping is important when clay, dump coal, or other damp or adhesive material constitutes the load, so as to discharge it with a jar or "thud;" but with other materials, which might be damaged by such jars or shocks, or when it is desired to deliver gradually, the V couplings when in engagement afford full control to tilt the car as far or as slowly as may be advisable. The guide-pulleys g for the chain f are hexagonal on their peripheries, thus presenting six flat surfaces of a size adapted to the flat-lying links of the chain, and a peripheral groove x² adapts them for receiving the intermediate or edgewise-lying links. (See enlarged view, figure 27.) Thus these pulleys fit all the surface of the chain, and prevent its getting off. They may be flanged also if desired. Instead of being hexagonal, these pulleys may have eight or more peripheral faces. The pulleys h are circular, but with an annular groove to receive the edges of alternate links of the chain. Having thus fully described my invention, what I claim is:—

First—In a dumping car the combination of the following instrumentalities: Segmentrocks attached to the trucks, pinions engaging with said rocks attached to the car-body by a common shaft and a common shaft and a common shaft.

t—In a dumping car the combination of the following instrumentalities: Segmentrocks attached to the trucks, pinions engaging with said rocks attached to the car-body by a common shaft, and an actuating worm-shaft connected to the pinion shaft by a worm-wheel, whereby the car can be dumped to either side, and whereby a positive lock is effected between the car-body and trucks, no matter in what position of inclination the car-body pays even stond

connected to the pinion shaft by a worm-wheel, whereby the car can be dumped to either side, and whereby a positive lock is effected between the car-body and trucks, no matter in what position of inclination the carbody may stand.

Second—In a dumping-car the combination with rockers upon which the car-body turns and rests of central bearing pivots, consisting of concave plates B, with frusto-conoidal stems and king-bolts, whose heads complete the cones of which the plate-stems are frustums as specified.

Third—In a dumping-car the combination with the trucks whose upper timbers are provided with central bearings and pivots and flat metal bearing plates of convex rockers attached to the body of the car, and mounted upon said central pivots and bearing plates as specified.

Fouth—In a dumping car the rockers.I carrying upon their under surfaces the reversed curved metal plates K and the central recessed convex bearing plates M, in combination with the subjacent concave plates B and their conical pivots, substantially as specified.

Fifth—In a dumping car the combination with rockers on which the body turns and rests, and by which it is pivoted to the trucks of telescopic gravitating side bearings, whereby when said side bearings are extended and locked the car-body is prevented from turning to either side as specified.

Sixth—In a dumping-car the combination with the telescopic gravitating side bearings or supports U recessed in sockets in the said rockers and carrying at their lower ends friction rollers as and for the purpose specified.

Seventh—In a dumping-car the combination with the telescopic gravitating side bearings or supports U of locking-slides connected to shifting rods actuated by levers upon the platform, whereby upon moving said levers in one direction said side bearings are locked to enable them to support the body of the car and prevent it from tilting, and whereby upon moving said levers in an opposite direction said side bearings or supports upon the platform, whereby upon moving said levers

described.

Twelfth—In a dumping car the directing or deflecting board hinged to the side of the car by swinging brackets substantially as shown and described.

Thirteenth—The car bed as made with the cross-sills and headers 11 extended from the longitudinal sills 25, and which reach from end to end of the car, and framed or fastened thereon, and with the shorter longitudinal sills 34 framed into the headers 11, and with the outside sills 67, the construction affording space at the ends of the car and between the sills 25, for the worm and gear or machinery which operates the dumping mechanism and ample clear space at the sides for dumping, and all without weakening the car-bed.

Fourteenth—The rocker 9 constructed with a short central round boss b, and with a series of stout cogs cc on its under side, in combination with the convex-bed 10, constructed with the shallow central socket c¹ and the sockets c²c², on its upper side adapted for the cog teeth cc, all as shown and described and for the purpose of dumping the car and of permitting it to right itself again.

Fifteenth—

Fifteenth—The dumping shafts or shafts 12 extending nearly the length of the car, in combination with the clutch-pulley thereon and with the linked chain and the described series of pulleys or devices for actuating the same and for connection with a hand lever or wheel and a connecting worm and gear, whereby such shaft may be

and for connection with a hand lever or wheel and a connecting worm and gear, whereby such shatt may be operated to dump either slowly or suddenly at option.

Sixteenth—The combination with the ends of the truck timbers of the straps i^1i^1 and their interposed guide-pulley h, these straps being constructed and applied to each other and to the truck timbers substantially as set forth, so as not to interfere with the proper action of the car-springs.

Seventeenth—In combination with the swing-doors the bar or rod 15 one or more dogs or levers k beneath the car, one or more vertical slide-latches l and their guides, the combination and arrangement being such that the inner end of the dogs k may serve automatically to fasten or to unfasten the doors in the manner shown and described.

Eighteenth—The swing-doors constructed as described—that is to say, morticed in timbers or iron supports O at each end, strengthened by truss-rods rr and by metal cross-bars-or straps p having bevelled lower ends for engagement with the fastening latches, and provided with one or more straps or projections q as and for the purposes set forth.

Nineteenth—In combination with the car-bed the end posts 17 resting on the outside sills and extending down and secured to the outside of the same, and extending high enough to permit the swing-doors to be attached thereto, said posts being grooved or recessed at their inner corners to receive the end board t of the car flush with the inside of the posts, the posts and the board being held together by a connecting rod and braced by braces u, all substantially as shown and described.

all substantially as shown and described.

Twentieth—The centre posts 18 made and applied to the car-bed as described, and assisting to support the swingdoors, and strengthened by an inside metal plate u¹ and by a tightening rod v beneath the floor connecting the two opposite ends.

Twenty-first—In combination with the car the movable side bearings 19, provided at their point of suspension with a slot or keyway as described, where, while holding the car in position during transit, and adapted to be swung up for dumping, they also prevent undue friction when the car is in motion around curves.

Twenty-second—In combination with the drawbar the rocker or arched piece 20,* secured upon its under side as and for the purpose described.

Twenty-second—In combination with the drawbar the rocker or arched piece 20,* secured upon its under side as and for the purpose described.
Twenty-third—In combination with a dumping car, brake mechanism, as described, consisting of the combination of bar 21, arm 22 on the truck timber, arm 23 brake bars f² g², rod or bari², lever j², links k², and yielding straps l², and appropriate means for actuating the same from the car platform.
Twenty-fourth—In combination with a dumping car the pulley e¹, made integral with its deep sockets s², and their narrow connecting grooves, and with the V teeth and the annular groove, as and for the purposes set forth.
Twenty-fifth—In combination with a dumping car, the pulley shaft the loose pulley e¹, made integral with its deep sockets, and connecting grooves V teeth, and annular groove as set forth, the pulley e and appropriate mechanism for disengaging these pulleys, and to allow the car bed to dump its load suddenly or slowly, as desired.

desired.

Twenty-sixth—In combination with a dumping car, and with the pulley shaft, its fixed pulley e and the loose pulley e¹, made integral with its sockets, grooves, V teeth, and annular groove, the shifting lever, 24 rod u² and hand lever v², these devices operating as and for the purposes described.

Twenty-seventh—In combination with the linked chain f, attached to both sides of the car bed, the guide pulleys g, made with flat surfaces w², adapted for the links, and with the peripheral groove x, as shown and described. Twenty-eighth—In a dumping car the combination with the pulley shaft and with the described mechanism for operating the same of the pulley e, the pulley e¹, made integral with its sockets, connecting grooves, V teeth, and annular groove, the linked chain, guide, pulleys gg, grooved as described, and the guide pulleys hh, made, as described, the ends of the chain being fastened to the outside car sills or floor, all substantially as shown and described. and described

In witness whereof I, the said Carson Woods, have hereto set my hand and seal this twenty-seventh day of April, one thousand eight hundred and eighty-three

ss—Fred Walsh, Manager, Edward Waters' Patent Office, Sydney.

CARSON WOODS.

This is the specification marked A, referred to in the annexed Letters of Registration, granted to Carson Woods this 29th day of June, AUGUSTUS LOFTUS, Governor.

LETTERS OF REGISTRATION.

By His Excellency the Right Honorable Sir Augustus William Frederick Spencer Loftus (commonly called Lord Augustus Loftus) Knight Grand Cross of the Most Honorable Order of the Bath, a Member of Her Majesty's Most Honorable Privy Council, Governor and Commander-in-Chief of the Colony of New South Wales and its dependencies.

Privy Council, Governor and Commander-in-Chief of the Colony of New South Wales and its dependencies.

To all to whom these presents shall come, greeting:

Whereas Carson Woods, of 253 George-street, Sydney, in the Colony of New South Wales, importer, hath by his petition humbly represented to me that he is the author or designor of a certain invention or improvement in manufactures, that is to say, of an invention entitled "Improvements in Railway Cars or Waggons," which is more particularly described in the specification marked A, and the three sheets of drawings marked B, C, and D respectively, and which are hereunto annexed, and that he, the said petitioner, hath deposited with the Honorable the Treasurer of the said Colony of New South Wales the sum of twenty pounds sterling for defraying the expense of granting these Letters of Registration, as required by the Act of Council 16 Victoria, No. 24, and hath humbly prayed that 1 would be pleased to grant Letters of Registration whereby the exclusive enjoyment and advantage of the said invention or improvement might be secured to him for a period of fourteen years: And I being willing to give encouragement to all inventions and improvements in the arts or manufactures which may be for the public good, and having received a report favourable to, the prayer of the said petition from competent persons appointed by me to examine and consider the matters stated therein, and to report thereon for my information, and am pleased, with the advice of the Executive Council, and in exercise of the power and authority given to me by the said Act of Council to grant and do by these Letters of Registration grant unto the said Carson Woods, his executors, administrators, and assigns, the exclusive enjoyment and advantage of the said invention or improvement for and during the term of fourteen years from the date hereof, to have, hold, and execrcise unto the said Carson Woods, his executors, administrators, and assigns, the exclusive enjoyment and advantage thereof for and dur

AUGUSTUS LOFTUS.

[Ordere l to be appended, 29 October, 1884.]

Mr. W. Scott to The Commissioner for Railways.

Allison Manufacturing Co.'s Cars for Railway Freight.

I have carefully considered the proposal of Mr. Augustus Morris in reference to orders being given for a number of these cars for our lines, and I regret to say that I am unable to see any advantage to be gained that would justify your acceding to his wishes.

The first cost should not be considered apart from the cost of wear and tear, which would in my opinion be very heavy if these trucks were in general use. It is represented that these "cars are as light in relation to the loads they carry as is consistent with a long life," but it is not stated what the long life is where they are used. I am decidedly of opinion that on our lines the life of such a truck would be decidedly short.

Doubtless

APPENDIX.

Doubtless such trucks might answer well for certain traffic, but I am confident they would not do for such a mixed

Doubtless such trucks might answer well for certain traffic, but I am confident they would not do for such a mixed traffic as we have to provide for.

I notice that these waggons could not be run with our present stock, as the distance from the centre of the drawbars to top of rail is only 2 feet 10 inches, whereas our stock is 3 feet 5 inches. Again: the smaller trucks, Nos. 26½ and 28, have no provision for unloading, excepting through a hopper door in the bottom; so that they could only be used over pits or shoots, or as ballast-waggons.

I may state that, with the exception of the dumping arrangement, these cars very much resemble the American dump-car which has been purchased from Carson Woods & Co., and for the supply of a considerable number of which his tender has been accepted; so that until we have had an opportunity of thoroughly testing their efficiency no further orders should in my opinion be given. And even assuming that they would with certain alterations be suitable for our traffic, I consider that, in justice to our local contractors, only one of each sort should be imported as a sample to which others could be made in the Colony.

W. SCOTT, 16/1/84.

Acknowledge receipt of Mr. Morris' letter, and say that for the present it is not considered desirable to give an order for any of these cars.—Ch.A.G., 29/1/84.

A. Morris informed, 4/2/84.

A. Morris, Esq., to The Commissioner for Railways.

A. Morris, Esq., to The Commissioner for Railways.

Sir,

24, Bridge-street, Sydney, 15 December, 1883.

Permit me to enclose descriptions of three freight cars made by the Allison Manufacturing Co. of Philadelphia, which is by far the largest maker in the world of such cars. Its prices, though low, are a little higher than those of some other manufacturers, because of the extra strength and durability of the work.

The cars are made as light, as to weight, in relation to the loads they carry, as is consistent with a long life.

The accompanying photographs* will give an idea of the forms of the cars, which are the same as those used by the Pennsylvania R.R. and the principal railroads in the United States and Canada.

Of course the cars will be supplied with double buffers to adapt them to the railway traffic of this Colony.

If reasonable numbers of any of these cars are ordered I shall be glad to contract on behalf of the Allison Manufacturing Co. to deliver f.o.b. in New York at the following rates for net cash, to be paid in London on presentation of the account, together with the policy of insurance and the shipping receipts. The price for either of the two large cars, exclusive of insurance, is £105 in New-York, and for the small one £60.

The cost for freight cannot exceed 40s. a ton measurement, so that the price of the cars delivered free on board in Sydney Harbour will not be more than £145 and £80 according to the class.

If the railway system in this Colony requires any alterations in the cars they will be made as specified by your engineer, but it should be remembered that under the forms offered the classes of cars referred to have superseded every other for similar purposes in America.

Forward to Loco. Engineer. Cr. A.C. School.

I have, &c., AUGUSTUS MORRIS.

Forward to Loco. Engineer.—CH.A.G., 23/12/83.

THE ALLISON MANUFACTURING Co., PHILADELPHIA, PA.

General Description of Hopper Gondola-car body.

201 Station and Gauge Hall Tours	
Reference to photographs	No. 78.
Capacity of car	40,000 lbs.
Weight of car	19,300 ,,

		$\mathcal{L}u$	nensions.		
	ft.	in.		ft.	in.
Length of car outside of draw-bar			Width of car body inside	7	6
,, ,, ,, body outside of frame	26	0	Height of car from top of track to top of sides (wheels	_	_
,, ,, platform	1	0	33in.)	7	2
Width of car body outside	8	0	Height from top of track to centre of draw-bar	2	10
Length of inside	23	6			

Framing Dimensions.

Sills, 4×10 ; stringers, 4×8 ; bolsters, 5×14 ; end sills, 8×9 .

Floor—13in. tongued and grooved yellow pine.

Trussing—None required.

Sills, 4 x 10; stringers, 4 x 5; bolsters, 5 x 14; end sins, 5 x 5.

Floor—1\frac{1}{2}\text{in.} tongued and grooved yellow pine.

Trussing—None required.

Sides and ends—3in. yellow pine, 36in. high, banded and riveted at corners, and strapped and bolted to sills with iron bolts.

Standards—Six on each side, secured to sills with cast-iron pockets, and riveted to sides.

Drop bottom—Arranged in hopper form, with doors hinged to heavy irons, and secured with chains and shafts.

Drop bottom—Arranged in hopper form, with doors hinged to heavy irons, and secured with chains and shafts.

Loose and hinge sides—Not used.

Construction materials—Ash or oak and yellow pine lumber, with best quality of cast and wrought iron.

Painting—Three coats of mineral paint of any colour required.

Trucks—Two four-wheeled bogies (8 wheels).

Remarks.—This car has been adopted by the leading trunk lines of this country that have any coal tonnage. Having about one-half the floor-flat as in an ordinary car it can be utilized for lumber, or any purposes for which ordinary flat cars are used. By the arrangement of the drop bottom or hopper about two-thirds of the load can be discharged without shovelling.

THE ALLISON MANUFACTURING CO., By D. L. SYLVESTER.

Dron

Approximate measurement, 800 cubic feet per car.

Augustus Morris, Esq., 24, Bridge-street, Sydney.

Note.—The foregoing is merely a general description of our standard car. We will furnish a full description with detail specifications and drawings when requested.

THE ALLISON MANUFACTURING Co., PHILADELPHIA, PA.

General Description of Dump-car body.

For Standard Gauge Rail-road.

Reference to photographs	No. $26\frac{1}{2}$.
Capacity of car	40,000 lbs.
Weight of car	19,500 lbs.
Timensions	·

_				20110	CIUS COTOS.	
·	-		ft.	in.		ft. in.
Length of car outside of draw-bar			23	3	Width of car body inside	
,, body outside of frame		٠,	20	0	Height of car from top of track to top of sides	
,, platform			1	0	(wheels, 33in.)	. 8 2
Width of car body outside ,		'	8	6.	Height from top of track to centre of draw-bar	2 10
Length of car body inside			19	4		

Framing Dimensions.

Sills, 5×10 ; stringers, 4×8 and 6×8 ; bolsters, 5×14 ; end sills, 8×9 .

Floor—1½in. yellow pine, covered with sheet iron, and supported by main timbers and heavy irons.

Trussing—None required.

Sides and ends—Framed with posts and braces, and lined with tongue and grooved yellow pine. Standards—None required, posts and braces referred to above acting instead.

```
Drop bottom—Doors of plate iron. Loose and hinge sides—Not used.
  Construction materials—Of ash or oak and yellow pine timber, with best-quality cast and wrought irons.

Painting—3 coats of mineral paint of any colour desired.

Trucks—2 four-wheeled begies (8 wheels).

Remarks.—These cars are used by R. R. Companies, where the tonnage is principally coal and ores, the arrangement of the floors being such that when the doors are opened the entire load is discharged without shovelling. The floor is made sloping from each end toward centre, and is covered with sheet iron.
                                                                                                                                      THE ALLISON MANUFACTURING CO.,
 Augustus Morris, Esq., 24, Bridge-street, Sydney.

Note.—The foregoing is merely a general description of our standard car. We will furnish a full description with detail specifications and drawings when requested.
                                                                            General description of four-wheeled coal car:
                                   Referring to photograph.....
                                                                                                                                                                                       No. 28.
7,900 lbs.
                                   Capacity
                                                                                                                                                                                    13,000 lbs.
                                   Length ... Width...
                                                                                                                                                                                     11 ft.
                                   Width
Height (top of track to top of sides)
                                                                                                                                                                                       6ft. 6in
 Wheels—30in. diameter, cast iron with chilled treats.

Axles—Best quality hammered iron.

Floor—Arranged with slopes, so that when doors are opened the load is discharged without shovelling.

Construction Materials—Of oak or ash and yellow pine, with best quality wrought and cast iron.

The ALLISON MANUFACTURING CO.,

By D. L. SYLVESTER.
 Approximate measurements, 400 cubic feet per car. Augustus Morris, Esq., 24, Bridge-street, Sydney.
                                                               R. W. Cameron & Co. to A. Morris, Esq., Sydney.
Dear Sir,

Your favours of the 8th August and 5th September reached us together on the 8th inst.

Coal Trucks.—We beg to enclose sundry photographs, specifications, and prices of cars, furnished by Messrs, W. C.

Allison & Co., of Philadelphia. You will find all the information you desire in these enclosures. The prices are for the cars boxed and delivered in New York. We cannot give the freight to Sydney, as the Messrs. Allison can only furnish approximate measurements, too vague to figure on; but if any business results, we will gladly do the freighting on as
reasonable terms as possible.

**Rockarock.**—We have nothing new to communicate at this time, as the Mr. Rand who attends to the matter is absent from the city, sick.

**We are, &c.,

R. W. CAMERON & Co.
                                              The Allison Manufacturing Co. to Messrs. R. W. Cameron & Co.
         Gentlemen
                                                                                                                                                                               Philadelphia, Oct. 12, 1883.
                      Confirming the conversation had with you yesterday by writer we now enclose you photographs,

No. 26, 8-wheel dump coal-car, price $475 each.

,, 26, 4
,, 5250
,, $250
,, $250
,, $250
,, $250
,, $250
and also specifications of same, giving dimensions, capacity, &c.

These cars are built of iron and wood and have chilled cast-iron wheels.

We could not undertake to make an iron car and compete with European manufacturers, and besides some Railroad companies in this country who a few years ago had some iron cars constructed have abandoned them and are using the
wooden cars.

We could not undertake to use the steel-tired wheel in competition with foreign manufacturers, nor do we think they would be advantageous on such low-priced work as coal cars, especially when cast-iron wheels will run from 60,000 to 150,000 miles.
             Trusting the photographs and specifications will answer Mr. Morris's purposes and awaiting your further favours,
                                                                                                                                  We are, &c.,
THE ALLISON MANUFACTURING CO.,
By D. L. SYLVESTER.
            P.S.—Prices are net and for the cars delivered in New York.
                                                                     [Ordered to be appended, 29 October, 1884.]
                                          The Secretary for Public Works to The Clerk of Select Committees.
                    Sir, Department of Public Works, Sydney, 19 September, 1884.
The following are the names of the witnesses I wish examined before the Select Committee re Railway Rolling
        Dear Sir.
               Mr. Carson Woods, Charlotte-place, Sydney.
Geo. Cowdery, Engineer for Existing Lines.
C. Blackett, 99 Pitt-street, Sydney.
John Goff, Locomotive Engineer's Office, Redfern.
Wm. Cross, Australian Club, Sydney.
Geo. Batchelder, 297 Cleveland-street, Sydney.
Alex. Clark, care of Mr. Batchelder, 297 Cleveland-street.
Jun. Hough
                                                                                                                      Mr. James Fletcher, care of Mr. Batchelder, 297, Cleveland.
                                                                                                                               J. Davies,
J. A. Murray,
J. Nelson,
J. Kendle,
                                                                                                                                S. Cook,
E. Chisnell,
                         Jno. Hough,
                                                                                                                                     Graham,
                        Thos. Jupp,
Samuel Jupp,
                                                                                                                                J. Brierly,
                                                                                                                                                                                       I am, &c.,
F. A. WRIGHT.
            Received 10:15 a.m., and circulars sent.—R.W.R., 20/9/84.
                                                                     [Ondered to be appended, 29 October, 1884.]
                                                                                                                 Ρ.
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Carsón Woods, Esq., to The Hon. F. A. Wright.

Church-hill, Sydney, 6 October, 1884.

I would in the most respectful manner call the Committee's attention to the following facts connected with Railway Rolling Stock:

1st. I have given a first-class freight car, having besides the ordinary car a most expensive set of dumping gear underneath each, carrying 20 tons, for £200 sterling.

2nd.

the present contract.

200

APPENDIX.

2nd. Other contractors give a common freight car, no expensive dumping gear underneath, and carrying only 15

tons of freight, and charge £300 sterling.

3rd. The dump-car is the outcome of the most scientific car-builders on the American Continent, and its strength to carry its load is not questioned. Silver medal at Chicago Exposition for Railway Appliances.

4th. The "G" cars construction is questioned by your own officers as being bad in construction and as having at least 2 tons useless timber and iron work.

least 2 tons useless timber and iron work.

5th. For every 1,000 dump-cars hauled with full freight there is a saving of 7,000 tons haulage to the Department as the dump-cars carry 5 tons more and weigh 2 tons less than the "G" car.

6th. I am ready to contract to build 1,000 "G" cars, with steel axles and wrought iron steel tired wheels, master car-builders diamond trucks for the sum of £240,000, a saving of £60,000 on present contract price.

7th. I am ready to contract to supply 1,000 "D" trucks for the sum of £56,000, a saving of 20% upon the present contract price.

Sth. I am ready to give a cash deposit as security for the due fulfilment of the above offer.

Finally I ask most earnestly the favour of your bringing this letter and offer before the Select Committee upon Rolling Stock now sitting, of which you are a member.

I have, &c., I have, &c., CARSON WOODS.

[Ordered to be appended, 29 October, 1884.]

THE Minister wishes to be informed of the dimensions of the draw-bars of our waggon stock.

CH. A. G., 1/10/84.

Loco. Engr., B.C., Recd. 12.5 p.m., 2/10/84 Very urgent. Information to be supplied not later than to-morrow. Information herewith.—W.S., per D. C. M²L., 2/10/84. Commissioner.

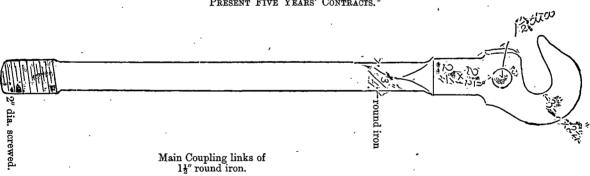
Memorandum re draw-bars of goods waggons on N. S. Wales Government Railways.

Locomotive Engineer's Office, Sydney, 2 October, 1884.

The accompanying sketches indicate the prevailing sections of draw-bars as provided by the last five years' contracts and

LAST FIVE YEARS' CONTRACTS. ०५,५० 13" to 13" (round iron) from 13" Main Coupling links of 14" round iron. diameter

PRESENT FIVE YEARS' CONTRACTS.



* Although this is specified for the current contracts, only a few vehicles have, so far. been delivered with the same

W. SCOTT, per D.C.McL., 2/10/84.

[Ordered to be appended, 29 October, 1884.]

R.

PRICES of the coal and freight cars made by the Allison Manufacturing Company of Philadelphia, U.S.A.:

8-wheeled dump-car £110 100 00000 8 hopper gondola car ... dump-car ...
platform car
box car ...
stock car ... 65 95 ٠.. ••• ••• ٠. 135 8135

These prices are for cash f.o.b. in New York

Specifications of the first three cars are sent herewith.

AUGUSTUS MORRIS.

In estimating the cost of the coal and freight cars, insurance, freight, delivery from ship, and putting together, must be considered. In estimating the freight, about 2 tons of dead weight must be added to the measurement tonnage as given with the specifications.—A.M.

The following are the descriptions of twenty Baldwin locomotives ordered through me, and to be delivered three and four months after order, f.o.b. in New York:—

Ten Mogul Locomotives, for heavy freight, including tender and steam brake, copper fire-boxes, and copper tubes.

Cylinders, 19' x 24'

Tank, 2,500 gallons.

Weight, exclusive of tender ... 38 tons.

on level 2,000 tons. on grades of 1 in 50... 270 tons. Power on level of 1 in 33...

· Ten

Ten locomotives for mixed goods and passenger traffic, powerful enough for one to run the express train to Albury, now requiring two passenger engines—including tender, Westinghouse brake, copper fire-boxes, and tubes. No dome and other improvements as specified.

Cylinders, $18' \times 26'$ Tanks—3,000 gallons.

Ten per cent. of the price to be withheld until all the engines have run 2,000 miles, to the satisfaction of the Commissioner.

Price of the twenty locomotives, £2,600, f.o.b. in New York.

AUGUSTUS MORRIS.

General	description	of	four-wheeled	coalcar	<i>:</i> —

Referring to photograph	`	1NT o
Weight		7,000 11-
Canacity		7,900 lbs.
Capacity Length	• • • •	13,000 lbs.
		llft.
Width		6ft.
Height (top of track to top of sides)		6ft. 6in.

Wheels-30in. diameter, cast iron with chilled treads.

Wheels—3010. character, cast from with chilled treats.

Axles—Best quality hammered iron.

Floor—Arranged with slopes, so that when doors are opened the load is discharged without shovelling.

Construction Materials—Of oak or ash and yellow pine, with best quality wrought and cast iron.

THE ALLISON MANUFACTURING CO..

By D. L. Sylvester.

Approximate measurements, 400 cubic feet per car.

Augustus Morris, Esq., 24 Bridge-street, Sydney.

The price of this car f.o.b. in New York is £65.

THE ALLISON MANUFACTURING Co., PHILADELPHIA, PA.

General description of Hopper Gondola Car-body ;-

For Standard Gauge Rail-road.

Reference to photographs	No.
Capacity of car	10.
TIT. 1.	40,000 lbs.
Weight of car	19.300 lbs
	20,000 100.
Dimensions.	

Length of car outside of draw-bar Length of body outside of frame Length of platform Width of car body outside Length of car body inside	26 1 8	3 0 0	Width of car body inside Height of car from top of track to top of sides (Wheel 33in.) Height from top of track to centre of draw-bar	7 ls, 7	. 2	6
Length of car body inside	23	6		4	1,	٠

Framing Dimensions.

Sills, 4×10 ; stringers, 4×8 ; bolsters, 5×14 ; end sills, 8×9 . Floor— 1_4^3 in. tongued and grooved yellow pine.

Floor—13in. tongued and grooved yellow pine.

Trussing—None required.

Sides and ends—3in. yellow pine, 36in. high, banded and riveted at corners, and strapped and bolted to sills with iron bolts.

Standards—Six on each side, secured to sills with cast iron pockets, and riveted to sides.

Drop bottom—Arranged in hopper form, with doors hinged to heavy irons, and secured with chains and shafts.

Loose and hinge sides—Not used.

Construction materials—Ash or oak and yellow pine lumber, with best quality of cast and wrought iron.

Painting—Three coats of mineral paint of any colour required.

Trucks—2 four wheeled bogies (8 wheels).

Remarks—This car has been adopted by the leading trunk lines of this country that have any coal tonnage. Having about one-half the floor-flat as in an ordinary car, it can be utilized for lumber, or any purposes for which ordinary flat cars are used. By the arrangement of the drop bottom or hopper, about two-thirds of the load can be discharged without shovelling.

THE ALLISON MANUFACTURING CO., By D. L. SYLVESTER.

Approximate measurement, 800 cubic feet per car. Augustus Morris, Esq., 24, Bridge-street, Sydney.

Note.—The foregoing is merely a general description of our standard car. We will furnish a full description with detail specifications and drawings when requested.

The price of this car f.o.b. in New York is £110.

THE ALLISON MANUFACTURING Co., PHILADELPHIA, PA.

General Description of Dump-car body :-For Standard Gauge Rail-road.

Reference to Photographs	No.
	19,500 lbs.

Dimensions.

Length of car outside of draw-bar. Length of body outside of frame Length of platform Width of car body outside	23 20	0	Height of car from top of track to top of sides (wheels, 33 in.)	8 2
Length of car body inside	- 8 - 10	6	Height from top of track to centre of draw-bar	2 10

Framing Dimensions.

Sills, 5 x 10; stringers, 4 x 8 and 6 x 8; bolsters, 5 x 14; end sills, 8 x 9.

Floor—1½in. yellow pine, covered with sheet iron, and supported by main timbers and heavy irons.

Trussing—None required.

Sides and ends—Framed with posts and braces, and lined with tongued and grooved yellow pine.

Standards—None required, posts and braces referred to above acting instead.

Drop bottom—Doors of plate iron.

Loose and hinge sides—Not used.

Construction materials—Of ash or oak and yellow pine timber, with best quality cast and wrought irons.

Painting—Three coats of mineral paint of any colour desired.

Painting—Three coats of mineral paint of any colour desired.

Trucks—Two four-wheeled bogies (8 wheels).

Remarks-

—These cars are used by R. R. Companies, where the tonnage is principally coal and ores, the arrangement of the floors being such that when doors are opened the entire load is discharged without shovelling. The floor is made sloping from each end toward centre, and is covered with sheet iron.

The Allison Manufacturing Co.,

By D. L. SYLVESTER.

Approximate measurement, 800 cubic feet per car.

Augustus Morris, Esq., 24, Bridge-street, Sydncy.

Note.—The foregoing is merely a general description of our standard car. We will furnish a full description with detail specifications and drawings when requested.

The price of this car f.o.b. in New York is £110.

[Ordered to be appended; 29 October, 1884.]

The Commissioner for Railways to The Chairman of the Select Committee upon Railway Rolling Stock.

Railway Department, Sydney, October, 1884. In my recent examination before the Select Committee on the 18th ultimo, I was asked whether there were an considerable number of accidents reported on the American railways as traceable to the use of cast iron chilled wheels and I replied, "No, not one that I could recollect; with the list of accidents which I had seen from time to time the cause was sometimes said to be 'derailment'—of course a defective wheel would cause derailment—but I could recall no accident which was attributable to the use of chilled iron wheels."

was attributable to the use of chilled iron wheels."

Since my examination I have been looking up the subject more closely, and as there seems to be a strong impression that the use of chilled iron wheels is accompanied with danger, I should be glad to furnish the Committee with some statistics, obtained from reliable sources, which may serve to reassure them on this point. Chilled iron wheels are almost universally in use in America; they possess 723,984 vehicles, other than locomotives, running over their 110,000 miles of railway. These vehicles have eight wheels, and the total accidents arising from the running of these 5,791,872 wheels numbered 19 in the six months ending 30th June last. It is not stated that these accidents arose because the wheels were made of chilled iron; they simply represent the whole number of accidents arising from defective wheels.

In the United Kingdom they have 444,958 vehicles (mostly with four wheels) running over their 18,000 miles of railway; the wheels for the most part have steel or iron tires; the number of wheel-tire accidents recorded within a similar period is no less than 643.

way; the wheels for the most part have steel or iron tires; the number of wheel-tire accidents recorded within a similar period is no less than 643.

With a mileage of railway six times greater than that possessed by the United Kingdom, and with fully three times as many wheels running, the number of recorded wheel accidents in America, where also the load on each wheel is often greater, was nineteen as against 643 in the Mother Country.

These figures demonstrate clearly that, on the score of safety, the chilled iron wheel used in America is infinitely superior to the tired wheel used in the United Kingdom.

It may seem incredible that the published figures should be so disproportionate, but I have very carefully examined all the authoritative documents procurable upon the subject, and the above is what they reveal. I leave them to speak for themselves. I do not, however, say that the nineteen accidents recorded represent the only failures with chilled wheels; the extracts herewith show that they were not, but one very significant fact is indicated, and that is, that with chilled wheels their defects are detected in time to avert accidents in running, which is not the case with the tired wheel. This fact is also horne testimony to by Captain Galton.

wheels their defects are detected in time to avert accidents in running, which is not the case with the tired wheel. This fact is also borne testimony to by Captain Galton.

To elucidate the matter as much as possible, I append copy of an opinion expressed by Captain Douglas Galton, C.B., D.C.L., F.R.S., and C.E., before the Institute of Civil Engineers in England, on the use of chilled wheels in America; also the following articles from the "Railroad Gazette":—

"Rate of breakage of wheels on the Pennsylvania Railroad."

"Steel versus Cast-iron Wheels."

"The car wheel of the future."

I have, &c.,

CH. A. GOODCHAP,

In favour of the use of chilled wheels.

Adverse to the use of chilled wheels.

See paper here-with.

I have, &c., CH. A. GOODCHAP, Commissioner for Railways.

The

[Enclosures.]

Extract from "Notes on Railway Appliances at the Philadelphia Exhibition," by Douglas Galton, C.B., D.C.L., F.R.S., and C.E.

"The use of wheels of chilled cast-iron is all but universal on American railroads. Other forms of wheel no doubt have been introduced at intervals, but they have not hitherto made way against cast-iron chilled wheels. These wheels are entirely different from any made in this country, and much more is to be said for their advantages than English engineers have been hitherto disposed to allow. The peculiarity of the cast-iron wheel is that each forms a single casting with the tire, and is cast in a chill, consisting of a rim of iron turned perfectly true, so that labour in turning is avoided.

"The duration of car-wheels in the United States was given at from 50,000 to 60,000 miles. The wheels can then be turned up and run a further mileage. If turned before being used a duration of 90,000 miles is guaranteed. It was further stated that a period of rest insured greater durability of car-wheels; that, for instance, the truck wheels under engines and tenders, running an equal number of miles with passenger cars, are usually in a better condition, as the engine has more frequent and longer periods of rest; and also, that in the case of wheels under passenger cars running short trips at a similar rate of speed to express cars running long and continuous trips, the duration in mileage of the former is greater, not-withstanding the more frequent action of the brakes upon them. Numerous inquiries made by the author led to the conclusion that chilled cast-iron wheels do not break in a way to occasion accidents to trains, provided they are examined at proper intervals when running. These cast-iron wheels are, moreover, economical; but whilst I am convinced that these wheels might be advantageously used here, it is certain that the failure of cast-iron wheels made in Great Britain has raised strong prejudices against them, which would prove a serious bar to their introduction."

EXTRACTS from the "Railroad Gazette," 18th April, 1884.

RATE OF BREAKAGE OF CHILLED CAST-IRON CAR WHEELS ON THE PENNSYLVANIA RAILROAD.

To the Editor of the Railroad Gazette.

Several articles in the Railroad Gazette during last year, referring to certain returns for a single month from one or two railroads, and hence suggesting or assuming the possibility that from 4 to 5 per cent. of all the cast wheels in this country were broken annually, have led me to an examination of the subject in order to obtain fuller information. The percentage mentioned has recently been assumed by an English railway paper as conceded, and an article based on this state-

is now en route through the press.

In July last some results obtained from the Pennsylvania Railroad Company's shop reports were published in the Gazette, since when I have revised the figures then given (having been led into error through the way in which the car record is printed in Poor's Manual), and have added those for 1883. The following table shows these results, covering all wheels removed for fracture of their lines east of Pittsburg and Erie during the years stated:

tatement showing number of wheels cracked or broken under cars on Pennsylvania Railroad of all makes and in all branches of service.

		Year 1882.	Year 1883.	
Total number of wheels on road January 1	. 356,326	460,480	453,610	
Number cracked		2,197	2,872	
Number broken	. 454	380	507	
Total	. 2,488	2,577	3,379	
Per cent. cracked	0.57	0:48	0.63	
Per cent. broken	. 0.13	0.08	0.11	
Total	0.70	0.56	0.74	

The percentage is calculated on the same basis as in the articles in the Kailroad Gazette already mentioned. Whether

The percentage is calculated on the same basis as in the articles in the *Railroad Gazette* already mentioned. Whether this is strictly correct or not, it is so for the purpose of comparison, and it is plain that to obtain a rate of even 4 per cent. the number of wheels on the road must be reduced to about one-sixth of those given, which would be absurd.

It is almost equally evident that, assuming the wheels in question to be of average quality, representing, as they do, the product of fifteen to twenty of the largest manufactories, this rate of breakage is not probably exceeded elsewhere. On roads subject to greater extremes of temperature the grades are less severe. For the southern seaboard, the valley of the Mississippi and the western plains, it is reasonable to assume a lower rate.

It is difficult to see, therefore, how a 4 or 5 per cent. rate can be maintained.

As the figures given are for all branches of the service, of course the great preponderance of freight cars brings down the average rate practically to that of this branch of the freight car wheels alone. I find in 1883: 2,774 cracked, being 0.6 of 1 per cent. of 434,104; 386 broken, being 0.9 of 1 per cent. of 434,104; and of the passenger cars and engines 98 cracked, being 0.5 of 1 per cent. of 19,506; 121 broken, being 0.6 of 1 per cent. of 19,506.

In estimating the capability of an article, not the average but the maximum, if accessible, should be considered. It has therefore seemed desirable to obtain complete statistics of the wear and strength of cast wheels of a single reputable make, in each of the different branches of service of a single road, where the number used and the character of the service should be such as to make the results valuable. In the case which I have selected (perhaps the only one which can offer so extensive results with a single wheel), the railroad company is itself the wheel-maker; and however this may be thought to bias its judgment as to the character of its work, it is certain that it takes a great deal of

summary only of statements much more detailed.

I present, therefore, the following table made up from Pennsylvania Railroad Company's shop reports, giving reports as to all the wheels of their own make taken out from engines and passenger cars in 1883.

These wheels are all made at Altoona, where the company has cast, for the last twelve years, from 100 to 400 daily. During 1883 I believe their product was about 70,000 wheels. They are made of certain charcoal irons, certain anthracite irons, old wheels of their own make, and steel; and are certainly not high-priced, since the company claim that they are cheaper at first cost, as well as better, than those of other makers. They are not presented here as the best cast wheels, but simply as those meeting the conditions already stated. Some makers and users of wheels contend that the best are made of charcoal iron alone, or in combination with a small amount of old wheels. If so, the capability of the cast wheel must be still greater than shown in this table.

Chilled car-wheels manufactured by the Pennsylvania Railroad, taken out in 1883.

	Crael	ked and broken.	No. worn on	No. "shelled."	No. with
Kind of Wheel and Service.	No.	Per cent. of all taken out.	flange or thread.	"comby," etc., in chill.	miscellaneous defects.
3 inch Pullman passenger cars	*9	1.1	64	72	· 1
3 inch baggage, express, and post cars	14	0.6	289	502	15
3 inch passenger, combined and emig. cars	63	0.8	596	586	58
0 inch passenger cars	2	0.5	227	32	********
) inch freight engines		1.0	216	58	2
3 inch ,, ,,	52	1.3	1,127	528	93
3 inch passenger engines		1.8	337	858	19
inch freight ,,	4	1.0	242	30	32
inch passenger ,,	2	2.0	_66	18	13
3 inch freight ,,	29	2.8	780	79	12
O inch passenger ,,	6	0.9	342	199	6
5 inch ,, ,,	11	2.5	232	93	1
Total	230	1.1	4,418	3,055	252

. Kind of Wheel and Service.		al taken s defective.	for	Taken out "flat-sliding."	Taken out—	
		Average mileage.	No.	Per cent. of all taken out.	good for refitting.	Total taken out
3 inch Pullman passenger cars	146	69,956	468	60	170	784
3 inch baggage, express and post cars	820	64,077	1,192	48	472	2,484
inch passenger combined and emig. cars	1,303	52,114	4,466	57	2,029	7,798
0 inch passenger cars	161	50,857	123	34	79	363
inch freight engines	280	49,212	46	.12	64	390
inch ,, ,,	1,800	43,900	1,488	38	676	3,964
inch passenger engines	1,248	42,664	340	18	298	1,886
inch freight ,,	308	41,629	Ì		56	364
inch passenger ,,	99	38,267			19	118
inch freight ,,	900	37,895			124	1,024
inch passenger ,,	553	36,046	18	2.5	121	692
3 inch ,, ,,	337	35,586		*******	` 102	439
Total	7,955		8,141	40	4,210	20,336

^{* 8} hub cracked, 1 broken.

It will be noticed

1. That the chief exception to the regular decrease of mileage with the size of the wheel is in the 30-inch passenger engine wheels. These suffer both in truck and tender service and at passenger train speed, while the others are used under one only or at lower speed. The high mileage of the first line may be connected with the infrequent stops of the Pullman engine wheels.

2. The breakage rate of the wheels less than 30 inches in diameter is higher than that of any others. These wheels

are used under engine trucks only.

3. The proportion of broken wheels (which are the dangerous ones) is 0.6 of 1 per cent. (see other table), and the broken and cracked together are 1.1 per cent. These average rates are chiefly due to the higher rate among the small engine wheels, the larger car wheels showing much less than 1 per cent. broken and cracked, and no doubt less than 0.6 of 1 per cent.

wheels, the targer car wheels showing means there is shown I per cons. It is shown also broken only.

4. The wheels removed as defective, after giving the mileage stated, form but about 39 per cent. of all removed. Of the balance 21 per cent. were good for refitting and 40 per cent. ("flat sliding") have been spoiled by the brake. It is well known, also, that many wheels are fractured and many injured on the tread from this cause, so that it would appear that the chief cause of low mileage in chilled wheels is one that would act with still greater force upon any softer metal. In other words, in an economical point of view the question is not so much one of breakage as of braking, or the art of applying brakes in such way as not to prematurely shorten the life of the wheel.

EXTRACT

EXTRACT from the Railroad Gazette, 12th January, 1883.

STEEL versus Cast-Iron Wheels.

To the Editor of the Railroad Gazette.

Reference to the appendix to the report of the Master Car-Builders' Association of the comparative merits of steel and iron car wheels, published in your issue of November, 1882, there are several facts presented as to the cost of cast-iron wheels that are hardly correct.

As this is a most important matter, both for the railway companies and the manufacturers of cast-iron wheels, we submit the cost of a sufficient number of cast-iron wheels to equal the mileage claimed for a steel-tired wheel.

The figures here presented are based on the prices and mileage guarantees that are in ordinary use among railway

The following extract is from the report of the committee appointed by the Master Car-Builders' Association to investigate the subject, and shows the cost of 44 pairs cast-iron wheels as against one pair steel-tired wheels:—

Copy of report to Master Car-Builders' Association.

"The actual average mileage of the steel-tired wheels has been 220,021 miles. Now we will assume the average mileage of the cast-iron wheels to be 50,000 miles. To make 220,021 miles (the life of a steel wheel) it will require 4.4 cast-iron wheels, and the time in service to make 50,000 miles would be 571 days.

Value	One pair steel wheels.	4.4 pairs iron wheels.
Cost of fitting, etc.	. 4.50	\$123·20 8·80
Interest		26.87
. Total	. \$154.66 . 18.75	\$158·8 7 58·92
	\$135.91	\$99:95

"The actual average, however, of cast-iron wheels on Boston & Albany road has been 34,290 miles, the comparative results being as follows :-

Value	4.50	•	6.416 pairs iron wheels. \$179.65 12.83 35.03
Value of old wheels			\$227·51 85·91
•	\$136.75		\$141.60"

The first and most important error is the mileage assumed for cast-iron wheels, viz., 50,000 miles. Some makers may guarantee their 33-inch wheels for only 50,000 miles, but any maker of first-class wheels is ready to and does in all cases guarantee 60,000 miles. Railroad companies have never had any difficulty in purchasing wheels guaranteed for that mileage when they buy in the open market. Taking then 60,000 miles as the basis, we find that 3 66 pairs of cast-iron wheels will equal the 220,021 miles claimed for the steel-tired wheel.

2nd. The prices at which new cast wheels are estimated on report of committee, viz., \$14 each, would suit the manufacturers of them very well if they could get it; but as \$12 each is considerably nearer, and in many cases above the actual cost of such wheels, we will use the latter figures.

3rd. In buying one pair of steel wheels the interest and investment of \$100 is fairly computed from the date of the purchase. In the case of 4 4 cast-iron wheels, but one pair of wheels is purchased, and when, at the expiration of 571 days (or when worn out per Master Car-Builders' report), a second pair is purchased, all of the railways that we know of use their worn-out wheels in part payment for new ones, so that the actual cash expense for the second pair is their full value less the scrap value of the preceding pair; rating 4 4 pair scrap wheels at \$58 92, their scrap value would be \$6.70 per wheel, or \$13.40 per pair. (Per report of Committee.)

By the above figures, and rating 571 days as the life of a cast-iron wheel, making 50,000 miles, we find that a steel-tired wheel must take seven years to make its 220,021 miles, and on the 60,000 miles basis the 3 66 pairs must take 685 days per pair in making 60,000 miles.

In computing the interest on the investment in cast-iron wheels, it must be done from the date at which each individual purchase is made, to the completion of the term of seven years required to wear out a sufficient number to compare with a steel-tired wheel.

Having exp

men nineers will and price of between nineers we to, all as above t		
Cost of first pair wheels Interest on \$24, 7 per cent. for seven years		\$24.00
Interest on \$24, 7 per cent, for seven years	11.75	_
Cost of second pair wheels, less scrap value of first pair	· •	10.60
Interest on \$10.60 for five years	3.70	
Cost of third pair of wheels, less scrap value of second pair		10.60
Interest on \$10 60 for three years	2.23	
Cost of 0 66 pair wheels, less scrap value of third pair		2.44
Interest on \$2.44 for fifteen months	. 22	
Total interest		\$17.90
Cost of fitting 3.66 pair wheels		7.32
		\$72.86
Scrap value of 0.66 pair wheels		8.84
		\$64.02
By this computation we make the net cost of enough cast-iron wheels to		
off-set one pair steel-tired ones		64.02
Same per Master Car-Builders' report	•	99.05
Same per Master Car-Builders' report Same per Boston and Albany Railroad report.		141.60

As to the mileage of steel-tired wheels, 220,021 is claimed, and we have heard of claims far exceeding that; but will practice give any such result? As shown above, a wheel will take seven years to make that mileage, and as steel wheels have come into extended use only in the last four or five years, there should accordingly be none worn out yet; we understand that they are not guaranteed, the sellers and purchasers seeming to have such implicit faith in them as to consider a guarantee unnecessary

Has anyone bought steel wheels guaranteed for 220,021 miles, and have there been no failures? Have all the steel wheels used run seven years without having the tires re-turned? There appears to have been no calculation made for such expenses, and we think that the users of them will find they exist and form a pretty large item too.

There are many things developed in the use of steel wheels of which mention should be made to arrive at a comparison with the cast wheel; for instance, they can be flatted by brake sliding and have to be re-turned every time; they also seem to be as open as the cast wheels to the greatest source of loss in car wheels, viz., sharp flanges, and the only way to save them is to re-turn them. To do this the users of them must purchase expensive machinery; if the actual expenses of using them are all computed, they will be fully double those of the cast wheels, while the permanent investment will at all times be nearly four times as great. It makes considerable difference whether a railroad company has one dollar or four dollars invested in doing a certain portion of their business.

We grant that the safest wheels should be used in all cases where life depends, without regard to cost; but is it fully established that the average steel wheel is any safer than a first-class iron one? Have the cast wheels had the opportunity to give their best results? We think not. Let us suppose that a railroad company were willing to spend some of the surplus cash now given for steel wheels on first-class cast ones. In that case a wheel could be made of extra strength; it would probably weigh one hundred pounds more than the ordinary wheel; it could be balanced and trued up as perfect as any steel wheel. It could be tested and examined both by the seller and by the buyer. Such wheels could be furnished for \$30 per pair, and would be just as safe as steel wheels at \$100 per pair.

Many people seem to think that there is no way to test cast wheels except in service, and that their merits and demerits cannot be ascertained until long after the purchase. This is not so; let the user of them test them before he puts them in service; strong wheels will break strong and poor ones will not.

A well-chilled wheel will give a good mileage (due allowance being made for the causes that interfere with the wear of any wheel, whether steel or iron), and a poor chilled wheel will not. The great trouble cast-iron wheels have to contend with is that they are all judged alike, when there is as much difference between good cast wheels and poor ones as there is between steel and iron wheels. We do not hear much of failures in steel wheels, but if the users of them will look into the number purchased and the number they have in use at present, we think they will have quite a number to account for.

Let them investigate the cost of the labour spent in re-turning and the machinery that is required and get at the facts generally. It is quite important for railroad people to know whether an investment of \$400 per car for steel wheels is necessary instead of \$96 per car for the cast wheels.

It may be said that in reducing the estim

Extracts from the Railroad Gazette, 1st February, 1884.

THE CAR-WHEEL OF THE FUTURE.

THE following is an abstract of a paper read by Mr. John M. Ford at a meeting of the Master Car-Builders' Club, held at

THE following is an abstract of a paper read by Mr. John M. Ford at a meeting of the Master Car-Builders' Club, held at Boston, January 30th:

A systematic record of facts as regards the relative service of steel-tired and cast-iron wheels under passenger equipment on the Boston and Albany Railroad, throws some light upon an important subject, which is now much discussed.

During the year 1883, 180 Hartford steel-tired wheels have been removed as worn out. Their average mileage has been 245,980 miles, the minimum being 63,500 and the maximum 470,000 miles; the average time in service, seven years, eight months, three days.

Analysis shows that

	-		Mi	les.				,	Miles.
-	6 wheels:	ran over	60	,000	and	under			100,000
1	4,,	,,		,000	,,	••			150,000
2			150				***************************************		
5		**	200	,000					
3		,,	250	,000			• • • • • • • • • • • • • • • • • • • •		
2		,,	300	,000	,,	,, `			350,000
1		1)	350	,000	,,	,,			400,000
	4,,	,,	400	,000	,,	,,			450,000
	l wheel	,,	450	,000		•••	*	. 	500,000

Thus, out of 180 wheels worn out, the great majority, 131, ran over 200,000 miles, and only about 3 per cent. of the total number ran under 100,000 miles.

The average mileage of worn-out cast-iron wheels removed during 1882 was 29,074 miles, and it would therefore appear that a steel-tired wheel will outlast eight chilled wheels, which latter only ran on an average 332 days.

The total cost of one pair of steel tired wheels, with interest and cost of changing and turning; to run 245,980 miles, has been, less scrap wheels	\$148	35
	100.	٠,
interest and cost of changing, has been, less scrap wheels	190 :	
Difference in favour of the steel-tired wheel	41:	96
Cost, without interest added, steel-tired wheels	88:2	25
Cost, without interest added, cast-iron wheels	140 %	52
Difference in favour of the steel-tired wheels	52.5	27
Difference in favour of the 180 steel-tired wheels removed during the year, with		
interest, &c., added	3,776	40
Difference in favour of the 180 steel-tired wheels removed during the year,	•	
without interest added	4,704	30

We have used this style of wheel for the past fourteen years, and had 1,615 in service on January I, 1883, and there has never been reported a defective wheel causing the slightest damage. The average length of all cars in service, passenger, mail, and baggage, is 47.90 ft.; average weight of all cars in service, passenger, mail, and baggage, 40,522 lbs.; size of wheels under consideration, 33 in.; style of truck, four-wheeled, except seven six-wheeled cars; sharp curves and heavy grades, much heavy suburban traffic, making frequent quick stops, the great power of the automatic brake tending to damage the wheel.

damage the wheel.

Car wheels are now being subjected to greater strains and rougher usage, and therefore require not only greater hardness of the tread but also greater strength, toughness, or tenacity of the metal of which they are made. During the past few years the average mileage of cast-iron wheels has fallen from 56,540 in 1880 to 29,074 in 1882 on this road. This fact indicates greater severity of service, and that the proper quality of material is wanting in the cast-iron wheel. This is confirmed by the fact that wheels in passenger service do not generally wear out, but become defective from some other cause. During the last nine months, 108 cast-iron wheels have been removed from a certain line of cars; only ten were worn out; of the remaining ninety-eight, sixteen had bad tread, eighteen were cracked, fifty-six flat, four seams, and four spotted. A few years ago, when cars were lighter, chilled wheels were probably the most economical in use, although many disadvantages resulted from imperfections in the service of the tread. Chilled wheels have, however, since proved unequal to the heavier loads, higher speeds, and the use of continuous brakes.

Crucible steel of good quality, containing about 1 per cent. of carbon, is four times as strong as cast wheel iron and machinery steel, containing about 0.30 per cent. of carbon, gives nearly the same breaking strain with a fibrous fracture. This metal is too soft for wheel tires, but steel made in crucibles from Swedish iron, with 0.70 to 0.80 per cent. of carbon added, hammered and rolled, will produce a perfectly safe and durable tire. A test made of the metal (annealed) of which Mr. Nathan Washburn is making steel tires showed great strength. Exact records as to the service of wheels are the only methods by which we can learn the practical value of different classes of steel for tires.

There is a popular theory that certain wheels are elastic—that is they will yield and recover their form. I admit that wheels contain elastic properties, just as a brick

that wheels contain elastic properties, just as a drick wan does, chough to would require to the fact.

The same is true of the wheel, or it is not fit for the service demanded of it; for the moment it yields or works a hair, that moment the forces required to produce this result was designed. A waggon wheel should never be run when any part yields or works a hair, but should be made perfectly solid at once. Will a continual yielding and recovering produce either durability or safety? A wheel should not be elastic under its load, any more than the principal bones in the body should be elastic in ordinary use, and yield to the blows giving in the act of walking; for in both cases elasticity is provided for in another way. The springs, equalizers and track neutralize the shock to the car bodies, and if the power of the springs to carry the load is determined accurately, so that an exact adjustment between the two is maintained, any additional elasticity would be as much a disadvantage as in the structure of the human body, for the provisions for elasticity are quite similar in each.

The

The destructive element of vibration as communicated from wheel to axle is another popular theory of the present day. This vibration does not tend to destroy axles, as the wheel is always in contact with the axle. The severer vibrations, which are destructive, are due to other causes. Can the wheel from contact with the axle transmit more vibrations to the axle than it receives? This is hardly reasonable, and still we hear nothing about wheels being destroyed by vibration, notwithstanding it is usually supposed that steel-tires and cast-iron possess greater vibratory properties than the wroughtiron axle. Yielding and recovering is not vibration, for no one contends that a cast-iron wheel is elastic or yields under its load; but they do contend that it vibrates, and in so doing destroys the axle without being itself affected. Why is this? The heavier destructive vibrations and strains conveyed to the axle come from the application of the brakes, the resistance to be overcome in the load carried, the tremendous momentum of the train, and the blow and twist communicated by change of direction in rounding curves, etc., and these forces can be neither diminished nor increased by any quality or communicated in the wheel, and accomplish that perfect safety and steady motion for which the vehicle is designed. Cushioning the wheel seat would give direct elasticity, producing a vibratory motion in the body of the car similar to the results produced in freight cars when the journal springs were placed over the oil-boxes. We endeavour to avoid this motion in passenger cars by equalizer bars and springs, which produce a long and soft motion, absorbing the jar and cushioning the blows more effectually and surely than in any other way, and, in conjunction with the body springs, give all the elasticity necessary or safe to have in your construction with the present element of elasticity in your truck. As vibration cannot be prevented we should endeavour to absorb the heavy shocks before they reach the body.

The present mode o The destructive element of vibration as communicated from wheel to axle is another popular theory of the present

In order to gain practical results by careful, systematic records, the wheel-makers and the wheel-users must combine efforts. The future wheel, no less than the present, must give the best results for the least money, and we must look to science to demonstrate the fact.

► [Ordered to be appended, 29 October, 1884.]

Randwick, 4 November, 1882.

In reference to the offer made by F. C. Rowan, Esq., to supply forty car engines, I have to report the engines of the class mentioned have not sufficient power as reserves for the excess of traffic at certain periods of the day over our roads, considering the grades of the city and suburbs; and I am also of opinion, from the design submitted, they will be very costly in wear and tear.

I quite agree with Mr. Rowan that, working over our roads with the present class of engines, any attempts at condensation with cylinders with more than $7\frac{1}{2}$ diameter will not be attended with results that can be considered satisfactory, and those already supplied and fixed will be found of small practical value during the summer months, and certainly not

worth the extra first cost.

While admitting the principle of the car engine as most desirable and economical for tramway work, I certainly do not feel justified in recommending the acceptance of the offer made, even supposing they were capable of performing the work required, and the price quoted was reasonable, so far as the first part is concerned. I have stated they are not equal to it; and as regards the latter, I am confident any one fully cognizant of the requirements of our system could obtain engines such as here specified either in America, England, or of first-class continental makers, at a reduction of some thousands below the lowest tendered price for forty; beside, there is nothing to show in the offer made what class of work or material was reasonable.

thousands below the lowest tendered price for forty; beside, there is nothing to show in the oner made what class of work or material we are to have.

But apart from the consideration, it is imperative (in making a radical change in our system of motive-power and rolling stock, involving the outlay of from eighty to one hundred thousand pounds) we should be in a position to say that that now being adopted combines all the most modern improvements as regards safety, efficiency, and economy. This certainly cannot be contended for in those now offered.

I attach particulars of a trial made with another steam-car (possibly the Commissioner has already seen it), although data, essential to forming a just estimate, is omitted; yet sufficient is said to show there are portions that can be adopted with advantage.

Besides this, there are other makers of car-engines, and it is quite possible there may be points in their construction desirable to follow.

desirable to follow.

I have carefully watched and considered the system of motive-power on our Tramways ever since it was placed under my charge, and I do not hesitate to affirm, from the experience thus gained, that engines can be made either in England, America, or the Continent, by which the traffic on our lines can be worked at from 30 to 50 per cent. below the

There is little doubt after a couple of years we could manufacture them in the Colony, but to meet the demand already created the facilities of one or more of the large locomotive works in the places named must be taken advantage of

to keep us supplied.

Seeing a large outlay must be made for additional plant, I would submit for the consideration of the Commissioner
the adoption of either of the following plans:—

1st. The sending of an order to the Baldwin Company for the necessary number to meet traffic requirements under No.—CH.A.G.

the present system, if continued.

2nd The ordering of a number of car-engines of standard types from present makers.

2—CH.A.G.

the present system, it continued.

2nd. The ordering of a number of car-engines of standard types from present makers.

3rd. Or taking advantage of our experience gained, to have sufficient car-engines manufactured at one or more I think well of locomotive works elsewhere, to meet present demands, and all subsequent requirements, by manufacturing this proposal.—CH.A.G.

locomotive works elsewhere, to meet present demands, and all subsequent requirements, by manufacturing in the Colony.

If the latter course is entertained it involves a personal visit. I have not made the suggestion on that account, for the Commissioner can readily understand there are makers who would be only too glad to avail themselves of the experience thus gained, but I do so solely in the interests of the Service, or, in other words, from a desire to see our Tramway system conducted with the greatest possible efficiency and economy.

Had there been any firms in the Colony capable of manufacturing, so as to meet our present requirements, I should have been only too glad to recommend it, but there is not; subsequent wants could however be met here, for they would be much simpler, and far easier to manufacture than locomotives for the Railway service.

GEO. DOWNE.

GEO. DOWNE.

Comr.—G.C., per J.L., 8/11/32.

The wear and tear of the present motors are unnecessarily great, and I am quite sure that a great saving will be effected by lighter rolling stock. The principle of the combined engine and car commends itself to those who have had experience of the present one on trial, although that design can be greatly improved upon. Our experience is now probably as great as that of any Tramway service, and our knowledge of the requirements of our traffic must necessarily give us superior advantage in designing a machine to meet those requirements. I am very favourably impressed with the proposal that we should adopt none of the advertised specialities; our experience of them so far has been that while they each meet some special kind of service, not one of them combines the requirements to meet our service. I am convinced that our Engineer can now make a design of motor which will meet our requirements in a far greater degree than any of those offered, and at a cheaper cost. I would submit, for the consideration of the Minister, that as we must at once expend some £80,000 in new rolling stock, it would be in the interests of the Department that the Engineer for such rolling stock (Mr. Downe) should take his design to a firm of manufacturers who know our system of lines and have manufactured motors for us—I mean the Baldwin Company, of Philadelphia. That firm has always treated us well in all orders we have entrusted to them, and Dr. Williams, of the firm, who was the first to interest himself in advising us as to our rolling stock for Tramways, will, I am sure, aid Mr. Downe in obtaining the best workmanship and quick supply at the lowest cost. I should have every confidence in entrusting to Mr. Downe the designing of the motor—to leave to Messrs. Cameron & Co., of New York, the arrangement of the price to be paid, and to the Baldwin Company—that, directly two can be constructed, they be sent to the Colony for trial; that tenders then be invited in the Colony for the construction of the twen constructed

constructed here. Mr. Midelton, the Acting Locomotive Engineer, will give a general superintendence to the rolling stock for Tramways during Mr. Downe's absence. I would suggest that the sea passage of Mr. Downe be paid by the Department, and that he be allowed 30s. a day expenses while on land, his absence not to exceed six months, and his services while in America to be devoted to superintending the construction of the motors.—Ch. A.G.

Mr. Scott will be back in Sydney in months. Mr. Midelton is now acting for him, without extra remuneration. I would recommend that he be paid £100 for the six months he will be superintending in Mr. Downe's place during his absence.—Ch. A.G., 13/11/82. Seeing the short time Mr. Midelton has been in the service, I think he should undertake this additional work without extra remuneration. Recommendation otherwise approved.—H.C., 22/2/83.

Mr. Cowdery informed. Mr. Downe informed. Mr. Midelton to see, B.C., 22/2/83.—Ch. A.G.

Seen, 24/2/83.—T.M.

Without is any months.

Mr. Cowdery informed. Mr. Downe informed. Mr. Midelton to see, B.C., 22/2/83.—Ch. A.G. Seen, 24/2/83.—T.M.

Without in any way impugning the decision of the Minister, I would respectfully desire to place upon record, that though I have not been long in the service of the Railway Department of this Colony, and entered it at a salary below that though I have not been long in the service of the Railway Department of this Colony, and entered it at a salary below that twhich my antecedents and qualifications entitled me to look for, I have in addition to the duties of my own office of general Locomotive Overseer, been for the past eight months performing (without extra remuneration) the duties of the Locomotive Engineer during Mr. Scott's official visit to America and England.

I have been glad to perform these duties upon such terms, although they have necessarily imposed upon me much extra labour and responsibility, and have scarcely left me a spare hour, because I was anxious to show, that though a little time only in the service, the Government in selecting me for the office of Loco. Overseer had appointed a person who was not only qualified for that office but for the higher position the duties of which I have been performing. I am now (24/2/83) asked to extend my sphere of usefulness by taking charge of the supervision of the Tramway Workshops and Motors during Mr. Downe's official visit to America for a period of six months, and the Minister has been pleased to approve of this, but has declined to concur in the Commissioner's recommendation that I be paid extra remuneration for the labour and responsibility which this addition to my work will involve.

I bow to the decision without further comment, requesting the Minister and the Commissioner to believe that the first consideration with me is the interests of the Department, and not my own private interests of individual benefit, but at the same time I most respectfully beg to state I do not consider that my case has received the consideration it deserves und

Minute from Commissioner for Railways.

Instructions to Mr. Downe, Superintendent of Tramway Rolling Stock, New South Wales.

Instructions to Mr. Downe, Superintendent of Tramway Rolling Stock, New South Wales.

Mr. Downe is proceeding to America to get made at the Baldwin Locomotive Works, Philadelphia, a tramway motor designed by him. One motor to this design, or any modification of it which, after consultation with the Baldwin Locomotive Company, it may be considered desirable to adopt, will be put in steam and tried on a piece of road in America, which may serve as a test of its general quality, and then be despatched to the Colony in the most expeditious way, to be again tried here. If it answers well on being tried in America, Mr. Downe may anticipate the order of the Government for five of these motors; and upon its being ascertained, by trial in the Colony, that they will answer the purpose, an order for fifteen additional ones will be forwarded by cablegram.

Mr. Downe will place himself in communication with Messrs. Cameron & Co. of New York, who, as the commercial agents of the Government, will advise him on all matters respecting payment for the motors, arrangements for freight, &c., &c. They will be written to to-day on this subject.

Mr. Downe should communicate with the Department, by cablegram, on any matter of sufficient importance to justify such an outlay; and he will be required to make a report monthly of the progress made with the supply of the motors and other matters affecting the interest of the Tramway service.

Mr. Downe of course understands that, with the exception of the first or trial motor, the cars for the motors will be made in the Colony. Mr. Downe will return to Sydney with the first trial motor.

CH.A.G., 22/2/83.

Make copy of this for Mr. Downe.—Ch. A.G., 22/2/83.

Re-submit end of March.—22/2/83. Copy made and handed to Mr. Downe. - D.C. M'L.,

LEGISLATIVE ASSEMBLY.

Tuesday, 27th February, 1883.

12. Mr. Downe, Engineer for Tramways:—Mr. Garrard asked the Secretary for Public Works,—
(1.) Is it true that Mr. Downe, the Engineer for Tramways, has recently left the Colony for America and Europe?
(2.) If so, is his journey being taken with the consent and at the expense of the Government, and will the Minister state

(2.) If so, is its journey being taken with the consent and at the expense of the Government, and will the Minister state the nature of the instructions given to Mr. Downe?

Mr. Copeland answered,—

(1.) Mr. Downe left for America on the 22nd instant.

(2.) The journey is being taken with the consent and at the expense of the Government. Mr. Downe has gone to Philadelphia to superintend the construction of a street motor and car, which he has designed for the Sydney Tramways. I will lay a copy of the instructions given to Mr. Downe upon the Table of the House.

Copy herewith. Submitted for Commissioner to see before being laid upon Table of the House.—D.C.M.L., 6/3/83. The whole of the papers leading up to the design of motor, together with all minutes thereon, the Minister's inquiry re Mr. Downe's history, &c., &c., should be included. Urgent.—Ch. A.G., 12/3/83.

I have now included all the preliminary papers which seem necessary in this matter. I have not had copied the numerous letters received from Captain Rowan, but only two of them which are referred to in one of Mr. Downe's reports. Mr. Midelton's minute in reply to the Minister's decision to allow him no extra remuneration for performing the joint duties might be eliminated. See where slip is put in.—D.C.M.L., 29/3/83. Commissioner.—G.B.

I do not think it necessary to put any of Mr. Rowan's letters in this return. The decision of the Minister must follow the papers re Mr. Downe's qualifications. His first minute should follow my recommendation, and his last minute, approving of the recommendation, should follow statement of Mr. Downe's services, or the description Mr. Downe gives of the motor.—Ch.A.G., 29/3/83.

Commissioner's instructions carried out. Is the return now to be forwarded to P. Works?—D.C.M.L., 31/3/83. Yes.—Ch.A.G., 3/4/83.

Yes.—Сн. А. G., 3/4/83.

LEGISLATIVE ASSEMBLY.

Wednesday, 4th April, 1883.

3. Papers:—Mr. Stuart laid upon the Table,—
Copy of Instructions given to Mr. George Downe, Superintendent of Tramway Rolling Stock.
Ordered to be printed.
Put copy with this when printed.—G. B. Mr. McLachlan, 20/4/83. Copy herewith.—D.C Copy herewith.—D.C. McL., 26/4/83.

TRAMWAYS.

(INSTRUCTIONS GIVEN TO MR. DOWNE, SUPERINTENDENT OF ROLLING STOCK.)

Ordered by the Legislative Assembly to be printed, 4th April, 1883.

Minute of Commissioner.

Rolling Stock for Tramways.

I wish to have a report upon the present adequacy of supply, and whether, with the orders given, it will be sufficient for the next twelve months. If not, what orders are necessary to bring the supply of rolling stock up to standard requirements. C.A.G., 18/9/82.

Please state number of each description on hand under repair, ordered, and not supplied.—B.C., 18/9/82. Mr. Cowdery. Mr. Downe.—G.C., per G.L., 19/9/82.

Urgent. Attached is a list of rolling stock on hand and ordered and not received to 30 September, 1882. To comply with probable requirements of traffic for next year it will be necessary if the present system be continued, to order forty engines and sixty cars. If the principle of the combined car and engine be adopted about sixty engines and cars should be ordered; the latter could be built in the Colony ready to receive engines as they arrive.—Geo. Downe, 30/10/82. To Engineer. Commissioner.—G.C., per G.L., 1/11/82.

TRAMWAY DEPARTMENT.

LIST of Rolling Stock on hand on 30th September, 1882.

Cars in Stock.

· · ·					Ours III N					
A.	A.1 ,	Aº.	A3.	A4.	A ⁵ ,	A6.	В.	Bı.	· c.	Total.
6	7	21	3	14	2		1 .	4	5	63
			-	,	Under Re	pair.	-		· · · · · · · ·	
А.	A1.	A%.	Λ3.	A4.	A ⁵ .	A ⁶	В.	B1.	c.	Total.
1	1	i	1		2			1		
		1	-	Orde	red and no	t supplied.	•			·
, A .	A1.	A4.	A3.	A.4.	A5.	A6.	B.	В1.	C.	Total.
******				16	12	4				32

GEO. DOWNE, 31/10/82.

TRAMWAY DEPARTMENT.

List of Rolling Stock on hand on 30 September, 1882.

Engines.

Number.	Makers.	Diameter of cylinder, and length of stroke.	Total.			
25 7 7 2 1	Baldwin & Co	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	25 7 7 2 1			
	Under repair.					
2 1	Baldwin Co	$\begin{array}{cccc} 11'' & \times & 16'' \\ \cdot 9'' & \times & 12'' \end{array}$				
	Ordered an	d not supplied.				
	Baldwin Co	10" × 14"	12			

GEO. DOWNE

31/10/82.

Minute of Commissioner.

I shall be glad to have design and plans prepared for an engine to work on the combined engine and car principle of such power that it will take its own car with eighty passengers, and on occasions an additional car with about eighty passengers. I propose having these engines made, or say some of them, at the Baldwin Works, Philadelphia. They are acquainted with our system, as they have already made motors for us. When the plans are ready and an estimate of the probable cost made, the question whether an officer of the Department should go to Philadelphia to superintend their construction will be considered.—B.C., C.A.G., 11/11/82. Urgent.

Mr. Cowdery. Mr. Downe to prepare design and plan, as per Commissioner's minute, 11/11/82.—G.C., per G.L., 14/11/82. Mr. Downe.—Urgent. I shall be glad to know if any decision has been arrived at in regard to accomdation asked for on 14/11/82, in order to carry out Commissioner's minute of 11/11/82.—Geo. Downe, 28/11/82. To Engineer. Mr. Downe has informed me that Commissioner gave him verbal instructions to erect a temporary office.—G.C., per G.L., 2/12/82. Commissioner.

Yes; I found that nearly three weeks had been lost, and no attempt made to get out the design which I said was urgently required. Want of room was the reason afforded. Mr. Downe said he could run up a drawing-office attached to his office at Randwick in a week. I told him to go and do it. A wooden building (say) 25 feet by 20, and 20 feet in height, would represent 10,000 feet, which at 6d. a foot run would cost £250.

I hope the drawings are being made by this time; if not, we shall be in a mess for want of engine-power, and I think Mr. Cowdery will be chiefly to blame for the delay.—C.A.G., B.C., 6/12/82.

What progress has been made?—G.C., per G.L., 8/12/82. Mr. Downe.

Building completed and occupied by the draftsmen on the 13/12/82 (drawings are being prepared), size, 35 feet by 16 feet.—Geo. Downe, 15/12/82.

To Engineer. Commissioner.—G.C., per G.L., 16/12/82.

Minute of Superintendent of Rolling Stock—Recommendation of Commissioner for Railways—Minute of Secretary for Public Works—Statement of Mr. George Downe.

Randwick, 4 November, 1882. In reference to the offer made by F. C. Rowan, Esq., to supply forty car-engines, I have to report the engines of the class mentioned have not sufficient power as reserve for the excess of traffic at certain periods of the day over our roads considering the grades of the city and suburbs, and I am also of opinion from the design submitted they will be very costly in wear and tear.

Wear and tear.

I quite agree with Mr. Rowan that working over our roads with the present class of engines any attempt at condensation with cylinders more than 7½ inches diameter will not be attended with results that can be considered satisfactory, and those already supplied and fixed will be found of small practical value during the summer months, and certainly not worth the extra first cost.

While admitting the principle of the car-engine as most desirable and economical for tramway work, I certainly do not feel justified in recommending the acceptance of the offer made, even supposing they were capable of performing the work required, and the price quoted was reasonable. As far as the first part is concerned, I have stated they are not equal to it; and as regards the latter, I am confident anyone fully cognisant of the requirements of our system could obtain engines such as here specified either in America, England, or of first-class Continental makers, at a reduction of some thousands below the lowest tendered price for forty; besides there is nothing to show, in the offer made, what class of work or material we are to have.

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adopted combines all the most modern improvements as regards safety, efficiency, and economy, and this certainly cannot be contended for in those now offered.

I attach particulars of a trial made with another steam-car [see Enclosure] (possibly the Commissioner has already seen it), although data essential to forming a just estimate is omitted, yet sufficient is said to show there are portions that can be adopted with advantage. Beside this, there are other makers of car-engines, and it is quite possible there may be points in their construction desirable to follow.

I have carefully watched and considered the system of motive-power on our tramways ever since it was placed under my charge, and I do not hesitate to affirm, from the experience thus gained, that engines can be made either in England, America, or on the Continent by which the traffic on our lines can be worked at from 30 to 50 per cent. below the present cost.

There is little doubt, after a couple of years, we could manufacture them in the Colony, but to meet the demand already created the facilities of one or more of the large locomotive works in the places named must be taken advantage of to keep us supplied. Seeing a large outlay must be made for additional plant, I would submit for the consideration of the Commissioner the adoption of either of the following plans:—

1st. The sending of an order to the Baldwin Company for the necessary number to meet traffic requirements No.—Ch.A.G. under the present system, if continued.

2nd. The ordering of a number of car-engines of standard types from present makers.

3rd. Or, taking advantage of our experience gained, to have sufficient car-engines manufactured at one or I think well of more locomotive works elsewhere to meet present demands, and all subsequent requirements by manufacturing in the Colony.

more locomotive works elsewhere to meet present demands, and all subsequent requirements by manufacturing in the Colony.

If the last-named course be entertained it involves a personal visit. I have not made the suggestion on that account, for the Commissioner can readily understand that there are makers who would be only too glad to avail themselves of the experience thus gained, but I do so solely in the interest of the service, or, in other words, from a desire to see our Tramway system conducted with the greatest possible efficiency and economy.

Had there been any firm in the Colony capable of manufacturing, so as to meet our present requirements, I should have been only too glad to recommend it, but there is not; subsequent wants could, however, be met here, for they would be much simpler and far easier to manufacture than locomotives for the Railway service.

GEO. DOWNE.

GEO. DOWNE.

 ${\bf Commissioner. --G.C.,\ 8/11/82.}$

Minute of Commissioner.

Minute of Commissioner.

The wear and tear of the present motors are unnecessarily great, and I am quite sure that a great saving will be effected by lighter rolling stock. The principle of the combined engine and car commends itself to those who have had experience of the present one on trial, although that design can be greatly improved upon. Our experience is now probably as great as that of any Tramway service, and our knowledge of the requirements of our traffic must necessarily give us superior advantage in designing a machine to meet those requirements. I am very favourably impressed with the proposal that we should adopt none of the advertised specialities. Our experience of them so far has been that while they each meet some special kind of service, not one of them combines the requirements to meet our service. I am convinced that our engineer can now make a design of motor which will meet our requirements in a far greater degree than any of those offered, and at a cheaper cost. I would submit for the consideration of the Minister that as we must at once expend some £80,000 in new rolling stock, it would be in the interests of the Department that the engineer for such rolling stock (Mr. Downe) should take his design to a firm of manufacturers who know our system of lines and have manufactured motors for us. I mean the Baldwin Company of Philadelphia. That firm has always treated us well in all orders we have entrusted to them; and Dr. Williams, of the firm, who was the first to interest himself in advising us as to our rolling stock for Tramways will I am sure aid Mr. Downe in obtaining the best workmanship and quick supply at the lowest cost. I should have every confidence in entrusting to Mr. Downe the designing of the motor, to leave to Messrs. Cameron & Co., of New York, the arrangement of the price to be paid, and to the Baldwin Company the faithful carrying out of Mr. Downe's plans. I think that in this way we may depend upon getting the best motor for our Tramways.

I would recommend that (out o

expenses while in land—his absence not to exceed six months, and his services while in America to be devoted to superintending the construction of the motors.

Mr. Scott will be back in Sydney in about six months. Mr. Midelton is now acting for him, without extra remuneration. I would recommend that he be paid £100 for the six months he will be superintending in Mr. Downe's place during his absence.—Ch. A.G., 13/11/82.

Minute of Secretary for Public Works.

I desire some information as to Mr. Downe's capacity as an engineer, and an account of his past experiences, to warrant sending him on an expedition of such importance. Ask Mr. Downe to forward me any testimonials he has in his possession as to previous employment before entering the Government service.—H.C., 19/2/83. Copies of testimonials attached.—Geo. Downe, 19/2/83.

Engineering experiences (condensed) of Mr. Downe, with copies of testimonials attached. APPRENTICESHIP of seven years as engine-fitter and millwright in H.M. Dockyard, Plymouth; workman six years in same service as fitter and engineer.

service as fitter and engineer.

Manager of Plymouth Foundry and Engine-works Company for four years.
In business for myself two years.
During the time I was employed as Manager of the above works, and in business for myself, I also held the following appointments under the Board of Trade, London, viz., Engineer-Surveyor for all Steam Merchant Vessels, Engineer-Surveyor for the Emigration Board, and Engineer Examiner for applicants' certificates of competency as engineers.

Two years as Assistant-Manager of large Gas-engineering Works, Exeter, manufacturing plant, &c.
One year Manager of Langlands Foundry Co., Melbourne.

Three years with the late T. S. Mort as Draftsman and Engineer.
Six years (nearly) in the Railway Department of New South Wales.
Four years as Mechanical Draftsman of Railway Rolling Stock and Bridge Construction, &c.
Two years as Loco.-Superintendent, Government Tramways. My entrance into and subsequent promotions (three) in the service were the result of my own exertions.

H.M. Dockyard, Devonport, January, 1861.

This is to certify that Mr. George Downe served an apprenticeship of seven years in this dockyard as an engine-fitter and millwright, which he completed in February, 1855, and afterwards worked as a journeyman in this establishment for nearly six years, during which time he conducted himself entirely to my satisfaction. He is a good workman, and a steady, diligent, attentive, and intelligent young man, highly deserving the favourable consideration of any person who may have occasion to employ him.

Plymouth Foundry and Engine-works (Lim.), 25 May, 1864.

Mr. George Downe has been engineer to the above Company for nearly four years, and during this period his ability, sobriety, and untiring industry have acquired for him the unqualified approval of the Directors.

He has a thorough knowledge of marine and other engines, and is well qualified to superintend their repairs or construction; combined with this qualification is his unremitting attention to his duties, which makes him a valuable acquisition in any situation where engineering skill and confidence are required.

Mr. Downe leaves this Company at his own request.

JAMES TOLL,

The Wharf, Millbay, Plymouth, 28 September, 1868.

This is to certify that I have known Mr. Downe for several years, including the whole time he was Manager of the Plymouth Engine-works Company, and holding the office of Surveyor for the Board of Trade, and have always found him to be an engineer of first-rate ability, of clear perception, and good judgment, and can strongly recommend him for the situation he is now seeking.

Agent for the Waterford Steamship Co. and Union Steamship Co.,

(Cape Mail Service).

14 March, 1867.

WE, the undersigned members of the Local Marine Board of Plymouth, beg to certify that Mr. George Downe, for nearly six years held the appointment of Engineer-Surveyor for the port of Plymouth and district, and since April 15th, 1864, has held the appointment of Examiner for Engineers' Certificates of Competency, and that he has discharged the duties of both appointments efficiently and to our entire satisfaction.

W. Luscombe, Richard Hill, James King, Richard Hosking. James B. Wilcocks, W. B. Cunning, Thomas H. Bottell,

At the Council Chambers, Whitehall.

Present:-The Right Honorable Thos. Milner Gibson, M.P.

17 & 18 Vic., c. 104, sec. 805.

Whereas it is provided by the "Merchant Shipping Act, 1854," that the Lords of the Committee of Privy Council for Trade may from time to time appoint such number of fit and proper persons to be Shipwright-Surveyors and Engineer-Surveyors, for the purpose of that Act, at such ports or places as they may think fit, and may from time to time fix and alter the rates of remuneration to be received by such surveyors:

Now, therefore, in exercise of the powers thereby vested in them, the Lords of the said Committee of Privy Council for Trade are pleased to appoint Mr. George Downe, Engineer-Surveyor for the port and district of Plymouth, with a fee of £1 for each complete survey, such appointment to continue during their Lordships' pleasure.

Signed by order of the Lords of the said Committee of Privy Council for Trade, the ninth day of February,

1861.

Assistant Secretary of the said Committee.

Sir,

I am directed by the Lords of the Committee of Privy Council to inform you that in pursuance of the provisions of section 6 of the "Merchant Shipping Act, 1862," their Lordships have appointed you to examine applicants for engineers' certificates of competency at the port of Plymouth. The examinations will be held at such times and such places as the Local Marine Board appoint. They will commence in May next.

A set of the forms to be used in connection with the examination of engineers is enclosed for your information and guidance. The examination papers, ex. 10, and ex. 11, are to be given to applicants themselves when they attend in the examiner's room to be examined, and are not to be issued to any other person.

As regards remuneration, my Lords direct me to inform you that they are unable to form any opinion as to the number of applicants likely to present themselves for examination, and that it is therefore at present impossible for their Lordships to fix the amount to be awarded as remuneration for your services as examiner.

The question of remuneration will, however, be taken into consideration at the expiration of the present year.

I have, &c.,

George Downe, Esq., Engineer-Surveyor, Plymouth.

George Downe, Esq., Engineer-Surveyor, Plymouth.

September, 1868.

This is to certify that Mr. George Downe has been the Engineer-Surveyor to H.M. Emigration Commissioners at this port for some years, during which time I have had frequent occasions for calling in his services, and I have much pleasure in bearing testimony to the great care and pains with which he always discharged the duties entrusted to him, and I believe him to be thoroughly efficient in his profession and thoroughly conscientious.

Given at the Government Emigration Office, Plymouth.

JOHN STOLL, Captain, R.N., Government Emigration Officer. 11 March, 1867.

I HAVE been associated with Mr. George Downe under the Board of Trade during the past six years, and can bear testimony to his efficiency in the knowledge of the steam-engine, and also in the construction of iron vessels. I consider him every way equal to the requirements of an engineering manager, and feel assured he would discharge his duties faithfully.

W. B. CUMING,

Retired Lloyd's Surveyor and to the Board of Trade.

Gas-engineering Establishment, Iron and Brass Founder, Contractor, &c.,
February, 1871.

This is to certify that Mr. George Downe has been with me in my employ as assistant manager in the manufactory for two years; during that time he proved himself fully competent for the duties he had to perform.

[Signature omitted.]

To Mr. George Downe, Jamieson-street,-

Dear Sir

46, Elizabeth-street, Melbourne, 30 June, 1873.

Dear Sir,

In reply to your inquiry, I have pleasure in certifying that from a large number of applicants in England you were selected as engineering manager of the Langlands Foundry in Melbourne; that you arrived there on January 1st, 1872, and while there in that position discharged the duties of manager to the satisfaction of the Board of Directors. You resigned the position entirely of your own accord in October, 1872, and with the view of trying your fortunes in Queensland and New South Wales in connection with the erection and planning of mining machinery, for which there is a large demand.

Your experience has been so practical and extensive that I can safely recommend your services in connection with almost any kind of machinery, and I will be glad to hear of your success from time to time.

Yours faithfully,

ANDREW LYELL,

Chairman of Board of Directors, Langland's Foundry Company, Melbourne.

MR. George Downe has been superintending engineer in my service for the last three years. He is possessed of first-class engineering ability, great energy, and is strictly to be relied on for sobriety and attention to his duties. He leaves my service in consequence of the duties in which he was employed having terminated.

T. S. MORT.

Sydney Ice Works, 16 July, 1877. Mr. George Downe has been in our employ during the last three years as engineer, draftsman, and superintendent of works. From the faithful manner he has discharged his various duties during this period I have much pleasure in recommending him, knowing that his skill, energy, and business habits cannot fail from being appreciated by any firm who may require his services.

E. D. NICOLLE.

Minute of Secretary for Public Works.

Seeing the short time Mr. Midelton has been in the service, I think he should undertake this additional work without extra remuneration. Recommendations otherwise approved.—H.C., 22/2/83. Mr. Cowdery informed. Mr. Downe informed. Mr. Midelton to see.—B.C., 22/2/83, Chas. A. G. Seen, 24/2/83.—T.M.

Without in any way impugning the decision of the Minister, I would respectfully desire to place upon record that although I have not been long in the service of the Railway Department of the Colony, and entered it at a salary below that which my antecedents and qualifications entitled me to look for, I have, in addition to the duties of my own office of General Locomotive Overseer, been for the past eight months performing (without extra remuneration) the duties of the Locomotive Engineer during Mr. Scott's official visit to America and England.

I have been glad to perform these duties upon such terms, although they have necessarily imposed upon me much extra labour and responsibility, and have scarcely left me a spare hour; because I was anxious to show that, though only a little time in the service, the Government in selecting me for the office of Locomotive Overseer had appointed a person who was not only qualified for that office but for the higher position the duties of which I have been performing. I am now (24/2/83) asked to extend my sphere of usefulness by taking charge of the supervision of tramway werkshops and motors during Mr. Downe's official visit to America for a period of six months, and the Minister has been pleased to approve of this, but has declined to concur in the Commissioner's recommendation that I be paid extra remuneration for the labour and responsibility which this addition to my work will involve.

I bow to the decision without further comment, requesting the Minister and the Commissioner to believe that the same time I most respectfully beg to state that I do not consider that my case has received the consideration it deserves under the circumstances.—Thos. Midelton, 26/2/83.

The Commi

[Enclasure.]

Trial of a new Steam Tramway Car.

On Saturday last the first trial in public of the new steam-car made by Messrs. Allen and Dickinson (Limited), Sheffield and Birkenhead, took place on the Wirral tramway line, between Woodside and New Ferry, in the presence of a deputation from Dundee and other Scotch towns, and the result in every way gave the highest satisfaction; and on Tuesday last, at the request of some of the directors of the Nottingham, Wallasey, Wirral, Blackburn, Wigan, and Leeds Tramway Companies, the new car made a second trip. Starting from New Ferry at 6:15 a.m. the car steamed down to Green Lane, Trammere, arriving at 6:25. A halt was made here to take up Mr. Busby, of Liverpool, and Mr. Gideon Herbert, of Nottingham. The car was then started up Chester Hill, where the gradient is excessively steep, being 1 in 13 feet; this was overcome without the slighest difficulty, and with a pressure of steam less than one-half the working pressure of the boiler. The car then proceeded to Woodside Ferry by way of Chester-street, and on the hill a halt was made while running at a high speed in order to test the brake power of the engine. It then proceeded to the Woodside Terminus, arriving at 6:25. At 6:40 a start was made for New Ferry, the car assending the Ferry. Hill gradient, which is 1 in 17, aggravated by a sharp curve, at a speed of 10 miles per hour, with the greatest ease, the engines working compound steam, 90 lbs., thus leaving a reserve of over four times power exerted in case of emergency, such as bad roads or greasy rails would be likely to produce. At the corner of Church-street and Ivy-street the power of the engine to take extreme curves was thoroughly tested, a radius of 29 feet being rounded in fine style. The ear then made its way to Chester-street Hill, in the middle of which, and on a gradient of 1 in 13, it was brought to a stand. The engines were reversed and the car steamed back again up the hill, thoroughly showing that the steam—car can be stopped on any hill and stread again at p

Description of proposed Steam-car.

The proposed car may be described as a combination of an ordinary tram-car with a motor of a somewhat novel design, in consequence of which, and the principle of engine adopted, an increased number of passengers are conveyed at a minimum expenditure of steam-power.

The car is divided into conveying the carrier of

The car is divided into compartments in the usual manner, with the exception of a space being reserved at one end sive the motor. The upper deck runs the whole length of the car, and is accessible by means of two staircases, as at to receive the motor.

present.

With a view to lessen the chances of accident, passengers can only enter and leave the car on the side nearest the footpath, doors being provided only on that side. This applies to the staircases as well as to the lower compartments.

No inconvenience can be experienced by outside passengers from the heat or smoke, as the chimney is surrounded by an efficient casing, and being carried much higher than usual the smoke is thrown off above the level of the upper roof.

The motor is to all intents and purposes completely self-contained; all that is required after steam is raised being to move it into the car, connect the chimney and whistle-pipe, and couple the vacuum brake tube.

The

The

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The doors in front are then closed, all the machinery hidden, and the car is ready for work.

The motor consists of a substantial framing, on which is mounted a steel boiler with copper fire-box of special design and ample capacity for supplying steam to a pair of compound engines working directly on the driving-axle. The cylinders of these engines are connected in a novel manner, there being no space lost between each high and low pressure cylinder. The valves are also a departure from ordinary motor practice, they being of the "piston" type, and actuated by "Joy's" gear, consisting of a series of levers, which, whilst dispensing with the ordinary eccentric (links and rods), is capable of a much finer adjustment than is obtained by them, and the friction of the working parts is much reduced by substituting simple pins for large surfaces.

much nner adjustment than is obtained by them, and the interior of the working parts in making surfaces.

The cylinders are supported on wrought-iron standards fixed on to the axle-boxes, and they are also further supported on the smoke-box end of the boiler; stays running from standard to standard, and carrying the motion-bars, also assist in making the whole of the frame-work as rigid and substantial as is required.

With the exception of a small safety-link, to act in cases of extreme emergency, it has been demonstrated in practice that no connection is necessary between the motor and the car beyond the resting of the latter on a suitable base in the former.

Ample brake-power with hand and vacum is provided, and that on the motor is so arranged that the brakes cannot be applied without shutting off steam at the same time.

This car has been designed to convey eighty passengers at a speed of 10 miles an hour on a gradient of 1 in 19, the steam pressure being 130 lbs. per square inch, and carries a supply of water sufficient for a journey of this length.

Apart from the advantages which ensue in departing from the ordinary practice, as detailed above, the greatest of all is, perhaps, that whilst with an excessive load the ordinary motor has only its own weight to rely upon for the tractive-power, this car, if so loaded, throws half the weight of the extra load upon the driving-wheels, thereby giving additional adhesion, by which the difficulty of starting an overloaded train, as at present, is entirely overcome.

This car has been designed with a view to comfort, safety, efficiency, and economy, both as regards prime cost, working expenses, and repairs to permanent way, &c.

expenses, and repairs to permanent way, &c.

GEO. DOWNE, 16/2/83.

Instructions to Superintendent of Tramway Rolling Stock.

Mr. Downe is proceeding to America to get made at the Baldwin Locomotive Works, Philadelphia, a tramway motor designed by him. One motor to this design, or any modification of it which after consultation with the Baldwin Locomotive Company it may be considered desirable to adopt, will be put in steam and tried on a piece of road in America, which may serve as a test of its general quality, and then be despatched to the Colony in the most expeditious way, to be again tried there. If it answers well on being tried in America Mr. Downe may anticipate the order of the Government for five of these motors; and upon its being ascertained by trial in the Colony that they will answer the purpose an order for fifteen additional ones will be forwarded by cablegram.

Mr. Downe will place himself in communication with Messrs. Cameron & Co., of New York, who, as the commercial agents of the Government, will advise him on all matters respecting payment for the motors, arrangement for freight, &c. They will be written to to-day on this subject.

Mr. Downe should communicate with the Department by cablegram on any matter of sufficient importance to justify

Mr. Downe should communicate with the Department by cablegram on any matter of sufficient importance to justify such an outlay, but he will be required to make a report monthly of the progress made with the supply of the motors and other matters affecting the interests of the tramway service.

Mr. Downe of course understands that, with the exception of the first or trial motor, the cars for the motors will be made in the Colony.

Mr. Downe will return to Sydney with the first trial motor.

CHAS. A. G., 22/2/83.

Messrs. Burnham, Parry, Williams, & Co., to The Commissioner for Railways.

Dear Sir,

We have the honor to acknowledge receipt of your valued favour of February 21st, advising us of the visit shortly to be made us by Mr. George Downe, Superintendent of Tramway Rolling Stock of your Department. It is hardly time, so shortly after the arrival of the mail, for us to expect Mr. Downe, but we anticipate the pleasure of meeting him in due season, and discussing at length the details of the tramway cars which it is proposed to use. We are fully confident that, with the aid of his experience and suggestions, we can so perfect the rough plans which we have heretofore submitted to you as to fully meet the requirements of your service.

that, with the aid of his experience and suggestions, we can so periect one rought to you, as to fully meet the requirements of your service.

We take this opportunity to advise you of the departure, per "City of Sydney," of our Mr. William Rhodes, who is going out to Victoria to attend to the erection and trial of the ten passenger locomotives which we have recently shipped to that Colony. He will be happy to render your Department any services which you may desire from him while in Sydney.

Trusting that the motors which we have recently shipped are doing good service, and awaiting your further valued commands,

We remain, &c.,

BURNHAM, PARRY, WILLIAMS, & CO.,

Per A. B. Johnson.

I note that the Baldwin Co. misapprehend the object of Mr. Downe's visit. It is not by his experience and suggestion to perfect the rough plans which they have heretofore submitted to me, but to get them to make motors to Mr. Downe's own design, which I will venture to say is in its conception and arrangement altogether different to any designs submitted by the Baldwin Company. But, as I said in my letter, I shall be glad if the Baldwin Co. will give to Mr. Downe the benefit of their experience and suggestions in perfecting the design, which he will show them when he reaches Philadelphia. It is true that after Mr. Downe's design was matured, and before he had seen the arrangement of boiler and fire-box proposed by the Baldwin Co., the plans showing what the Baldwin Co. proposed to do in this respect were received, but, as I informed Mr. Stuart at the time, Mr. Downe had independently adopted the same arrangement, and the knowledge, I admit, that the Baldwin Co. had designed an arrangement of the boiler similar to that of Mr. Downes gave me more confidence in Mr. Downe's design of motor.—Ch.A.G., 8/5/83.

Extract from M.P. 83-2,889, being a letter received from Mr. George Downe, Philadelphia, dated 26/4/83. * * *

The Baldwin Company intimated to me if Messrs. Brill & Co. built the car it would be more convenient for them. I placed the drawings before them and they informed me the car would not exceed £500, and as this is only the price of our sixty-passenger car, and as it is to include putting together for trial, and after the trial finishing, packing for shipment, and delivery at the station, I placed the order with them for it.

It was intended, I believe (the papers will show), that the first car should be made in America—I think this is the right course—please submit papers.—Ch.A.G., 16/6/83.

Papers herewith, 18/6/63.

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CHAS. A. G.,

22/2/83.

Seen.-CH.A.G., 23/6/83.

Extract from 83-2,889T, letter from Mr. G. Downe, dated 26/4/83.

I at once attended at the Baldwin Works and opened up the object of my visit. I should have first said I went to New York and saw Messrs. Cameron & Co., who informed me they had received communication from you and would do all in their power to assist me, and requested me to inform the Baldwin Company they would pay all charges incurred.

The Baldwin Company at once entered into the subject, the practical members of the firm going over each part carefully; after doing so the general manager of the works said it was the most complete new design they had had presented to them, and that they were prepared to undertake its construction; the general manager also expressed some doubts as to the efficacy of the compound principle and should like it looked into closely. This I was quite desirous of doing, because if there was an error I would unhesitatingly admit it. They also requested me to wait a week, so that their best draftsman could be put on the work, going over the calculations and getting out the details with me. I waited, and we first started on the calculation in regard to the compound. After testing it in different ways, in which the senior engineering partner took an active part, we found the position was a good one, and decided to carry it out, modifying the sizes of the cylinders only. There are a few of the minor details slightly altered, mostly those I mentioned to you before I left, and the drawings are now being pushed on as fast as possible; part of the work is on order, and the Company have promised to complete it in time to have a full trial of its efficiency, and shipped by steamer leaving 'Frisco August 25th. I don't think they will be after date with it, as their workmen work 10 hours per day with only one break; they get 25 per cent. more out of their men than we do. Next month's report will enable me to speak more definitely than I can now.

Seen.—T.M., 27/6/83. The Commr. Seen. Mr. Midelton to see. - CH. A.G., 23/6/83.

Mr. G. Downe to The Commissioner for Railways.

Philadelphia, 26/5/83.

Since writing my last I am pleased to say the Baldwin Company have continued to push on with the compound engine; part of wrought iron work is made; the whole of the castings will be finished next week; the boiler is in hand, and they have fixed the early part of July for the trial. If they keep to this, and I see nothing to prevent the date of shipment as given in my last being kept. It takes fully three week to carry it across the Continent, so that to insure shipment it must leave here by 1st of August.

GEO. DOWNE.

A subsequent letter to this has been received from Mr. Downe, I think.—CH.A.G., 6/8/83.

Mr. G. Downe to The Commissioner for Railways.

Philadelphia, 26/5/83.

I OMITTED to state that Messrs. Brill & Co. are proceeding satisfactorily with the manufacture of the car, and it will be quite ready for trial by the time the engine is completed.

I think these papers should be carried on to papers about new design of motor; they bear materally upon it; in fact some of the enclosures belong exclusively to that subject.—Ch. A.G., 6/8/83.

Mr. G. Downe to The Commissioner for Railways.

Mr. G. Downe to The Commissioner for Railways.

Philadelphia, 21/7/83.

I am pleased to report the combined engine and car, although not so far advanced as I expected when I wrote last, is in a sufficiently forward state to run in steam on jacks to-day, and I hope in three days to have it running on the road. The car is ready for the trial, being the first engine of its kind built here. The men have had to exercise more than the ordinary care in every department and have not been able to work with their usual energy, especially in the erecting shops, both here and at Brill & Co.'s; they would be able to erect any others at fully 33 per cent. less cost for labour.

I will keep this open as long as I can, so as to give you the result of the first trial in steam if possible.

I am afraid it will not be tested in time to ship by the August steamer; but I expect it will be completed in time for me to catch it, and unless I receive any instructions from you to perform other work, shall return by that one and have the engine and car follow in September. Preparation should be made to run it on arrival; if by turn-table it must be 30 feet 6 inches at least in diameter.

inches at least in diameter.

I have been making inquiries for one suitable for the streets and to work easily. So far I have been unsuccessful in finding one answering the requirements we need. I presume, under the circumstances, you will put in a triangle; I would suggest its being prepared in time to prevent delay in putting it to the further test after its arrival and erection.

I have just come from the erecting shop; we cannot get the engine completed for shop trial until Monday morning, and the mail leaves to-night (Saturday). I cannot, therefore, speak definitely; all appears favourable, so far, to realise our expectations of it. You will, however, have received a cablegram of the result almost before this leaves 'Frisco., as arranged the last mail. GEO. DOWNE.

Again when cablegram is to hand.

Mr. G. Downe to The Commissioner for Railways.

Dear Sir,

Thiladelphia, 18 August, 1883.

Instead of writing you I had fully expected to have returned by this mail, but we have had several drawbacks, just what is realized with every new engine, but at the same time very provoking when it is desired to complete by a definite time. By the copy of the American Machinist which I send you by this mail you will see I did not get a first public trial before the 3rd instant, and although things worked fairly well yet on that day we did not go far as the business men who accompanied us could not spare the time. On the following Monday, when making a further trial, one of the side rods fired (not from running neglect) and was bent. New rods had then to be made, which caused a delay. Since then two further trials have been made, but we have suffered from the usual complaint of warm bearings and primings, &c. But I am nearly through with these mechanical misfits, and expect next week to cable you the result. So far as the trials have been made it will be gratifying to you to know they are successful, and there is reasonable prospect of its accomplishing all that is claimed for it. The compound principle will, I feel assured, make a reduction in our fuel bill, and the saving in other respects will, I think, come out very near what I put before you. The Baldwin Company speak well of the design, but as they say an extended test is necessary to prove its economy in working. I myself have no fear that in twelve months you will be able to show them a balance that will be as satisfactory regarding wear and tear as the design is to them now. Mr. Longstreth, one of the partners, and who is the active manager of the works, has taken especial interest in this engine and car. He told me to-day that he had devoted more time than any one else to the question of street motors here; our present motors are almost exclusively his own design; the combined cars they have made are also his, and so interested is he in perfecting it that during

the trials. Such an expression of opinion from one so competent is, I feel, very gratifying, and will, I doubt not, assure you that the design is fully appreciated here, and show at the same time that I have not been sent by you 10,000 miles with something doubtful, or faulty in construction and unable to perform the work required of it. I am aware of adverse expressions of opinion in the colony both as to design and ability to perform its work; but such is not endorsed here by any who have seen it. I have courted criticism that I may discover any defects existing, as I am anxious we shall have the best of its kind, but all who have seen it do little else than praise it; still I do not flatter myself it is perfect, and during its working I daresay I shall be able to introduce some improvements.

The part I designed to escape Mr. Rowan's royalty works admirably, and I have while here designed a change-valve for working all cylinders high pressure or compound that I purpose patenting. It is simple, effective, prevents back pressure, and can be instantly changed by the driver either when stationary or running. Of course New South Wales will be exempt from any charges on patent account. I might add that I tried its haulage power on a grade of 1 in 17 yesterday, with a truck and loading about the weight of one of our sixty passenger cars with 120 persons on it, and it mounted the grade easily compounding, and under unfavourable conditions, for the car built for it was empty, consequently was minus the adhesive power for the engine that its own passengers would give. Without further enlarging on its merits as so far tested I think I may say I feel assured when it reaches Sydney and is put on the road it will give complete satisfaction to you, and show that the object of my visit has been fully attained.

I remain, &c.,

I remain, &c., GEO. DOWNE.

P.S.—I omitted to say on one trial the engine with car did 5 miles in 12 minutes.

Copy of cablegram received from Baldwin, Philadelphia, referring to Mr. Downe's combined motor and car. August 23, 1883.

"Steadfast regenerate, and Downe, September; inform wife."
The cablegram means:—"Steam car is working satisfactorily. Steam car will leave in time for 'Frisco steamer, August 25th, and Mr. Downe September. Inform wife."

EXTRACT from The Sydney Morning Herald, Tuesday, 25 September, 1883.

A COMPOUND TRAMWAY MOTOR FOR AUSTRALIA.

THE following appeared in the American Machinist of the 25th ultimo, published in New York :-

The following appeared in the American Mackinist of the 25th ultimo, published in New York:—

"A tramway motor has just been finished by the Baldwin Locomotive Works for the New South Wales Government, which possesses several novel and interesting features. The motor is intended for service on the tramways in and around Sydney, which are operated by the Government of the Colony, and it was designed by George Downe, superintendent of machinery, who was sent from Australia to look after the building of the machine. Friday menning, August 37d, the motor was steamed up ready for the road. A party of gentlemen who had been invited to witness the trial trip were in attend, ance, and among them was a representative of the American Mackinist. A run was made over part of a division of the Philadelphia and Reading Railroad, and the inotor performed its work in a satisfactory manner. The engine and boiler of the motor are enclosed in the end of a car which is 38 feet long, and weighs complete 14½ tons. The boiler is vertical, and is adapted to burn any kind of coal or coke, the latter being the material used on the trial trip. The engine is of the compound type, with two cylinders at each side standing vertically inverted above the driving shaft. They are connected in the tandem fashion, the high-pressure cylinder being on the top. It exhausts round the casing into the low-pressure cylinder being on the top. It exhausts round the casing into the low-pressure cylinders, which enables the engineer at will to increase the power to a remarkable extent. This arrangement is specially made for the work the motor is intended to perform. The street grades in some parts of Sydney are intensely heavy, as high as 270 feet to the mile being ascended. When the motor is running along on ordinary grade the expansion of the compound cylinders will be utilised, but when a steep grade is reached the increased power of steam acting directly in the four cylinders will be utilised, but when a steep grade is reached the increased power of steam

Since the publication of the above a communication has been received by the Commissioner for Railways from Mr. Downe, in which he states that the new design of motor has exceeded, upon test trial, the most sanguine expectation, and the managing director of the Baldwin Locomotive Company, who is the designer of the motors now in use on the Sydney lines, has pronounced Mr. Downe's street motor to be far in advance of any that have yet been invented.

Forward with Mr. Downe's letter to Mr. Midelton, B.C., 26/9/83.—Ch.A.G. Commissioner. The Seen.-T.M., 29/9/83.

Extract from The Sydney Morning Herald, 27 September, 1883.

Extract from The Sydney Morning Herald, 27 September, 1883.

If Mr. Downe's visit to America results in an improvement in our tramway system the Government will be able to take credit to itself for having permitted him to go so far afield. —In-the Civil Service we have too many "poor unfledg'd," who "have never wing'd from view o' the nest." There are, no doubt, many whose faculties would be freshened and sharpened by travel, and the outcome might be the birth of many mechanical inventions that would prove serviceable to this young Colony. Mr. Downe has shown that it is not alone the prophet that lacks honour in his own country. He, an engineer, has lived amongst us long years, and to the multitude his name has been unknown. He is now on a visit to America, looking after the Colony's interests in regard to its tramway system. His inventive faculties have been set in notion by keen observation and opportunities for comparison which his visit has afforded, and all this has led to the manufacture of an improved steam tramway motor, possessing not only "interesting and novel features," but which has been pronounced by competent authority to be far in advance of any motor yet invented. The reasonable conclusion from that is that but for Mr. Downe's visit to America the world might never have heard of his triumph of engineering skill. He has improved even upon American ingenuity in the shape of mechanical invention, and both countries may therefore expect to profit by his originativeness. Most of the motors in use in this metropolis were made at the Baldwin Locomotive Company's works, New, York. It was at those works that the improved motor was made, and it was the managing director of those works who pronounced so favourable an opinion respecting its merits. The success which Mr. Downe has achieved suggests the possibility of our improving in other directions by sending other of our Civil servants to gather information from abroad. In connection with our railways, are instance, we require not only good motors but go EXTRACT

EXTRACT from letter of Messrs. Burnham, Parry, Williams, & Co. to Commissioner for Railways. " Dear Sir, Philadelphia, 15 September, 1883.

"We are pleased to advise you of the shipment of the compound motor and car, on the 30th ultimo, with a view to its shipment from San Francisco, by the Pacific Mail Steamship 'City of New York,' which carries this letter. On August 22ud we sent you a telegram, as per enclosed copy, announcing the satisfactory performance of the car, and its shipment by this vesse

shipment by this vessel.

"During its trial the motor worked efficiently and satisfactorily, and we believed, fulfilled all our expectations concerning it. It is the best plan of eight-wheeled steam-car which has ever come within our notice, and contains many important features of construction which have never before been used in such a machine. As it is, however, the working out of an entirely new design, there must necessarily be found many points susceptible of improvement, and these points will be demonstrated by its service on your lines. Its comparative economy of fuel will also be shown. While during its trial here it indicated that its consumption of fuel would be small, the conditions are so removed from those under which it will work on your lines that we must consider this one of the points which must be left for time and further experience to decide. Much credit is due to Mr. Downe for the diligence and attention which he has shown to every detail during its construction. He has devoted his time to it exclusively, and much praise is due to his skill and intelligence as a designer. No new idea in the construction of locomotive and kindred machinery has remained uninvestigated, and any credit which may be due for the merits of the design we take pleasure in rendering to him. We hope soon to hear good accounts of the performance of the car on your lines."

Telegram from Messrs. Burnham, Parry, Williams, & Co., Philadelphia, U.S.A., to Commissioner for Railways,
Philadelphia, 22 August, 1883.

Steam-car is working satisfactorily. Steam-car will leave in time for 'Frisco steamer of —; and Downe, September. Inform wife.

Telegram from Auckland Station, to Commissioner for Railways,

Auckland, 16 October, 1883.

ARRIVED Auckland; engine and car on board.

R. Towns & Co. to The Commissioner for Railways.

Dear Sir,

We beg to wait upon you with enclosed receipt of Mr. Geo. Downe, for £151 16s. 10d., as payment to him by your agents, Messrs. Cameron & Co., in New York.

We also enclose draft by the Messrs. Baldwin Co., for £352 17s. 11d., against the balance due on the consolidated motor imported by the last "City of New York."

We shall feel obliged if you will forward on to the Treasury the necessary instructions for payment of these amounts.

We remain, &c.,

R. TOWNS & CO.,

(Per Win. Ed. Wilson).

Supt. of Stores, B.C., 29/10/83.—G.B. Herewith.—A.R. The Examiner, 31/10/83. Voucher forwarded for payment.—J.P.F., 17/11/83. Secretary.

Supt. of Stores, B.C., 29/10/83.—G.B. payment.—J.P.F., 17/11/83. Secretary.

Extract from Sydney Morning Herald, November 27, 1883.

NEW COMBINED MOTOR AND CAR.

Extract from Sydney Morning Herald, November 27, 1883.

New Combined Motor and Car.

Yesterday aftermoon the Minister for Public Works, accompanied by the Commissioner for Railways, two or three Members of the Legislature, and a number of the trainway officials, tested the copabilities of a new combination car and motor recently constructed to the order of the Government. The experiment took place on the Randwick and Googee tram line. The car is of novel design, and presents a very neat appearance, and has been constructed with a view of overcoming many of the technical difficulties of the present system, and at the same time providing more efficiently for the comfort, convenience, and the result was considered very satisfied to the present system of the motor. The car is of the present system of the motor. The car is of the present system of the motor. After a short based of the wind which would afford the best opportunity of really testing the powers of the motor. After a short day at Coogee the return trip was commenced, and it was satisfactory to find that the new car, drawing about 24 tons (exclusive of the motor), rounded the sandhills without a stoppage. The speed, however, was very slow, and it was quite evident that the motor had almost as much as it could manage. On arriving at Randwick another stoppage was made, and the party partook of a little light refreshment, after which a return was made to Sydney, all being apparently thoughly satisfied with the trial. The following description of the car has been supplied to as:—It was designed at the tramway works, Randwick, by Mr. George Downe, the Superintendent of rolling stock, and was built in Philadelphia, under his personal supervision. The vehicle is a combination of an ordinary tramear with a motor of somewhat unique pattern, and it is claimed that by the principle of engine adopted an increased number of passengers may be conveyed at a minimum expensal supervision. The vehicle is a combination of an ordinary tramear with a motor of somewhat unique

vibration, even when the speed is above the maximum at which it will work ordinarily. The difficulty of starting when overloaded is in this class of car entirely overcome, as half the weight of the load is always thrown on the engine wheels, thereby giving additional adhesive power and enabling the motor to accomplish the extra work. Before the car was shipped to Sydney a number of trials were made: first with the engine only, and afterwards with the car attached. Its performance with the latter was witnessed by many scientific gentlemen and others interested in the subject, to whom the performance of the engine was a matter of special interest on account of the adaptation of the compound principle and the general design being such a departure from ordinary locomotive practice. It is the first compound locomotive built in the United States. The economy from the combination of engine and car on our lines was anticipated by the Commissioner for Railways, who many years ago, we understand, advocated the principle in connection with our tramway service. A trial car was ordered by him from England about two years since, and has run on the line from Redfern station for some time. Although this car has not been a favourite with the travelling public, its non-success in this respect did not affect the principle of combining engine and car, and when Mr. Downe introduced his design, which embraced this principle, the Commissioner's confidence in it caused the them Minister for Works to order a trial car, Mr. Downe being sent to America, not only to superintend the manufacture but also to test its capabilities on one of the American lines. During its trial in America the combined engine and car ran several hundred miles, and the testimony of the Baldwin Company, after having witnessed its performance, must be highly gratifying to all concerned.

EXTRACTS from The Daily Telegraph, Tuesday, November 27, 1883. Official Trial of the New Steam Motor.

OFFICIAL TRIAL OF THE New Steam Moror.

It has been no secret that for some time past the tramway authorities have been on the look-out for an improvement in the present style of steam-motor and cars, the great desiderata being lightness and safety. Mr. Downe, the superintendent of rolling stock, has been busy for a considerable time in designing a motor and car combined, to meet the requirements of Sydney traffic. The manufacturers of the present motors, Messrs. Baldwin, of Philadelaphia, have recently completed a model motor according to the designs furnished by Mr. Downe, which has only just arrived in Sydney. Yesterday afternoon an official inspection of it was made by the Hon. F. A. Wright, Mr. Commissioner Goodchap, Mr. Rhodes, of the Locomotive Department, and Mr. Roberts, Superintendent of Tramways. The party included Messrs. Garrard and Vaughn, Ms. L. A.; Mr. Williams, Crown Solicitor; Mr. Richards, Government Printer; together with the representatives of the Telegraph and Herald. A start was made in the new car from Bridge-street, about half-past 4, for Coogee, Randwick being reached after a rather slow journey of 20 minutes or so. Here a "double-decker," heavily laden with iron, was attached to the combined motor and car, so as to make the entire load as near as possible equal to two fully laden cars, or about 22 tons. Of course Coogee was reached without any difficulty, and while there the motor was subjected to a pretty close scrutiny, which resolved so far in a very favourable manner. But the real test was in returning on the steep up-grades to Randwick, and more than once it appeared that the engine had almost too much to draw, more especially as the iron on the hindmost car was really harder to pull than its equivalent in weight of passengers. It was, in fact, the most trying test that the new invention could have had. But Mr. Downe's ability was demonstrated beyond a doubt, for there was no actual stoppage all the way up to Randwick, although, as might be supposed, the progress was exceedingly

EXTRACT from The Sydney Daily Telegraph, Tuesday, November 27th, 1883.

YESTERDAY afternoon the new combined car and motor invented by Mr. Downe, Superintendent of Rolling Stock, was subjected to an official trial. A trip was made to Coogee, the party including the Hon. F. A. Wright, Mr. Goodchap, and Messrs. Vaughn and Garrard, Ms. L.A. The result was decidedly satisfactory. A full report appears elsewhere.

EXTRACT from The Echo, Tuesday, November 27th, 1883.

Extract from The Echo, Tuesday, November 27th, 1883.

If the new compound tramcar is not a success everybody who travels by tram will be sorry for it. The remarkable little compound car that is sometimes pressed into the service between Bridge-street and the railway is answerable for a good deal of profanity. Even the department has not had the hardihood to produce another like it. The principle of it is right enough, but there could hardly have been a more abortive application of that principle. Detached motors and cars are clumsy, dirty, and noisy. Nobody says they are not an advance upon older methods, even in these respects; but they are not things for the last decade of this century. It will count one to us if the new venture is a success; because it is a local invention. Everybody said it was needed, and as many persons said it could be done, it still remained to show how it could be done. If the first example is not perfect, never mind; having caught the idea, the first application of it can be improved upon. The best trial for it was not the one made yesterday. It may have tried the strength of the engine, but since the car is made to carry living freight, put it on one of the lines for a few days, and an intelligent public will soon tell the Commissioner a bit of their mind. If the car runs smoothly and is roomy and clean, "they" will soon say so. The smoothness of the new car may be the crucial test. To start easily, and to stop in the same way, are indispensable desiderata. There is enough shaking about on railways to kill sheep; citizens must be more tenderly used. Of course the department will not repeat this experiment until a thorough good passenger trial has been made of it. Let it be placed on all the lines in turn. The reputed economy of the new car is a great point in its favour, but that is not everything; it is not the first thing in public vehicles. The first consideration is that they be thoroughly suited for the work; the favour which such cars will command ought without fail to recoup a

Minute Paper.

Commr's. complaint of delay in utilizing Mr. Downe's combined engine and car imported from America.

Is the motor at work?—D.V., 13/2/84. Mr. Downe. No.—Geo. Downe, 15/2/84. Secretary. Commr. will require some explanation.—D.V., 19/2/84. Mr. Downe, B.C. It is only waiting for the completion of the turn-table. I saw it this morning, and there is a possibility of its being finished to-morrow, Friday night. If ready, the car can be run over the road on Saturday, and if the road is right throughout can be sent for traffic on Sunday or Monday next.—Geo. Downe, 12/2/84. Secretary. Commr.—D.V. Mr. Cowdery to let me know by the 27th inst. whether the motor is running, and if not, why not?—Ch.A.G., B.C., 23/2/84. The turn-table has been fixed, but unfortunately I was not present at the trial with the combined motor and car on it. I have tried it since with an ordinary car on it, and two men turned it easily. However I have given instructions for some small improvements, which I hope to have completed this week. It must be understood that this is only a make-shift turn-table.—G.C., 27/2/84. Commr. This is an important—exceptionally so—matter. This motor is not yet working, and no satisfactory reason for this failure has been afforded. Mr. Cowdery had better give this matter serious attention, and I will submit to Commr. in a few days.—D.V., 3/3/84. The present turn-table will not answer the purpose Minute Paper.

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for which it was intended, and as I have no draftsman at present available to prepare drawings for a new one, I have seen Mr. Downe, and if Commr. approves, he will make the new table.—G.C., 13/3/84. Commr. Pending Commr's. return, Mr. Downe had better push forward these plans.—D.V., B.C., 18/3/84. As per verbal instructions from the Secretary on 14/3/84, I have pushed on with the plans, and being sufficiently advanced, a portion of the work has already been put in hand. I have also to facilitate it, asked Mr. Cowdery by memorandums to remove present table, so that the ground may be prepared for new table.—Geo. Downe, 19/3/84. Secretary. Commr. for his information and approval.—D.V., 21/3/84. While approving of the steps taken to bring the new motor speedily into operation, I must express not only my own opinion but that of the Minister that the failures hitherto made in regard to the turn-table reflect discredit upon those who have been engaged in making this provision. I trust that the new turn-table will, both as regards its design, and the expedition of its construction, somewhat redeem the past abortive efforts.—Ch.A.G.,23/3/84. Mr. Cowdery, B.C. Seen. This work is now being pushed forward by Mr. Downe.—G.C., 24/3/84. Commissioner. Mr. Downe, B.C., 25/3/84.—G.B. Noted. The table will be completed next week.—Geo. Downe, 24/4/84. Commissioner.

Minute from Mr. G. Downe to Commissioner for Railways.

[Mr. Downe's Engine from America.]

In replying to the Commissioner's minute of 9/1/84 on the above subject, I have to report as follows:—

Nothing has yet been done with the combined engine and car beyond making several departmental trials in addition to the one to Coogee and back, by the Minister, Commissioner, and others. It is proposed to put it on the road for traffic so soon as the necessary provision to admit of its running has been made. From the design the combined engine and car must be turned round at each terminus; already at Redfern Station and Coogee Bay a triangle and a semicircle are put in which will answer for its working at those places; but it is necessary for a triangle or a turntable to be put in at Bridge-street before it can be utilised for traffic purposes.

With reference to the rumours that a large quantity of repairs have been made, fire-bars burnt, &c., I need only say there is not the slightest ground for truth in them; such can only be circulated with a malicious intention, and the author ought, if possible, to be traced and punished.

there is not the slightest ground for truth in them; such can only be circulated with a mancious interior, and the accordingly to be traced and punished.

I am fully alive to the fact that there will be opposition experienced in introducing the combined system, and it is possible some will be found in the department itself; still, seeing the advantages likely to be gained, and knowing the continuance of steam tramways demands a reduction in the wear and tear and running expenses, the effort made to accomplish these results in this car should claim for it an extended and impartial trial.

Any departure from ordinary practice is rarely if ever found to be perfect at first, and I certainly do not for one moment entertain the thought that this car is perfect and will perform all our requirements without some modification of its parts.

its parts.

its parts.

I enclose a copy of all time expended on motor and car at the works since its arrival, which includes labourers' time going to Railway Station, loading cases as they arrived, unloading and unpacking at Randwick, the erection of both motor and car—the car was built and put together with screws for shipment, consequently it had to be screwed together here, a much longer process than ordinarily adopted—also, the attendance during trials.

The total time expended or charged to alterations has not reached £21; a portion of this is really for additions and improvements; another portion was altering bogies to suit the road, also the new safety-guard to the bogies to prevent persons getting under the wheels, and this it must be remembered is the bogie of car, not the engine. A new gate was also made and fixed on back platform to prevent passengers getting in or out on the wrong side.

The only points really calling for notice in the engine are what I drew Commissioner's attention to verbally, viz., the difficulty we had experienced from unequal expansion of the steam-pipe and boiler, causing such a strain upon the joints of the steam-pipe that they frequently leaked, and the tendency to prime while ascending our grades. The former is a matter easily rectified in many ways; one is by an expansive joint which I am having made (the labour of making pattern for this is included in the cost of alterations). The priming, should it continue, can also be easily overcome, but I do not propose to do anything to prevent it at present, preferring to wait until it has had a proper test on the road working the traffic, as it is possible after the boiler has been blown down a few times and the men accustomed to working it the priming may cease. I may here mention, with regard to the straining of steam pipe joints, that I watched this particularly on the American trials possible after the bolier has been blown down a few times and the men accustomed to working it the priming may cease. In may here mention, with regard to the straining of steam pipe joints, that I watched this particularly on the American trials and although we ran several hundred miles, repeatedly going 25 miles per hour, there was not a joint required attention, neither was there any trouble experienced with priming after the first two trips. The priming is no new feature, but is a common experience in trials of new boilers, and the boilers of all the motors we have running troubled us more or less on this point when first put on the road.

The fire-bars are those first fitted and used on all the American trials, as well as on all trials here, and are just as good now as when first put in

good now as when first put in.

There have been two or three trivial matters attended to on the engine which, if it had not been for the rumours, would not be worth noticing. A hole in one of the cylinders was not drilled through, and the links had to be eased on one side for the motion bars to clear; the arrangement of lubricator pipes on trailing axle was found to feed not quite so fast as

would not be worth noticing. A hole in one of the cylinders was not drilled through, and the links had to be eased on one side for the motion bars to clear; the arrangement of lubricator pipes on trailing axle was found to feed not quite so fast as needed.

With these exceptions everything is as first made, and so far as design of engine and boiler is concerned no alteration whatever has been needed, and there has been nothing during the trials in America and here to indicate that any alteration is necessary, but everything so far points to a considerable reduction in mileage expenses, and these must be reduced if steam tramways are to be a commercial success.

When in America I found many were covering the boilers with a new conductor to prevent radiation of heat. Knowing if effective such would be a great saving in fuel I ordered sufficient to cover the boiler. This has been done, but it adds considerably to the cost of erection, it being necessary to heat the boiler with steam while it is being put on, and it can then only be put on in layers, but the few trials made lead me to anticipate an advantage from it. I have been able to come from Coogee to Randwick with a second car laden, generating steam sufficient to increase the pressure against both injectors at work. This cannot be done with any other boiler in use on our tramways, and although I have adopted a form of boiler combining the vertical and horizontal, I do not consider this the sole cause of the advantage, but am inclined to think the prevention of radiation by the covering of cement has a great deal to do with it.

The Commissioner will see from the foregoing that nothing has occurred that he was not aware of. There has been no attempt to conceal anything; in fact, there has been nothing to conceal, and the principle will bear the closest examination of its detractors. Whatever the result, I, as designer, need not be ashamed of it. It was well scrutinized before it came to the Colony, especially by those who designed the best independent motor i

The delay which has occurred in making the necessary provision for putting this car out for traffic has, I feel sure, been prejudicial to it. From the statements published regarding it before arrival the public have expected something in advance of what we had already. It has had an official trial here which was reported more than two months ago in the newspapers, and yet the car is not placed on the road by the Department; it is only natural therefore to suppose that the public will think there is a defect in its construction and the Department afraid to subject it to further examination; whereas the fact is it has only been waiting for the means to turn it at Bridge-street.

I require to order additional motive power at once, and had hoped long ere this to have shown the Commissioner, from work performed by this one, that we should increase an order for the compound combined class, but whatever my own idea may be of the desirableness of doing so, I have and shall hesitate to do so until the Commissioner has had experience of this one from the road.

GEO. DOWNE,

I do not understand why provision has not been made at Bridge-street for bringing this car into use. I recommend that no further delay be allowed to take place.—Ch.A.G., 30/1/84. Appr.—F.A.W., 31/1/84. Mr. Downe and Mr. Cowdery to be informed, and that I shall expect the motor to be at work within ten days from this date.—Ch.A.G., B.C., 31/1/84. Noted.—G.C. (per J.L.), 31/1/84. Commissioner. Mr. Downe, B.C. Noted.—Geo. Downe.

Cost

Cost of Men's Time on new Combined Motor and Car from arrival to 12th January, 1884.

				Erecting and trying.	Alterationș, &c.
Chomas Evans	Erecting	days	s. d. 10 2	£ s. d. 0 2 61	£ s. d.
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R. Donald	Straighten cylinder rods and forge new draw-	1 1	$\overline{12}$ $\overline{0}$		$0 6 0^2$
. A1:	bar hook.	,,	F 6		0.11.0
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R. Johnstone	,, ,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1 1	7 6		0 3 9
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Hy. Wood	Alter bogies	2	$\begin{array}{ccc} 11 & 8 \\ 7 & 6 \end{array}$	***********	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
,,	Erecting	1 1	7 6	0 3 9	0 3 3
ames Kerr	,,	13	10 2	6 12 2	
R. Vaughan	Repair valve spindle	1 1 2	10 4		0 2 7
J. Doody	Covering plates for spring Pattern of expansion joint	$2^{\frac{1}{2}}$	8 8 11 10		$\begin{array}{cccccccccccccccccccccccccccccccccccc$
A. Donald	Erecting		12 '2	1 1 31	i
	Putting plates on bunkers	4	12 2		0 3 0 ₂
J. Sullivan	Take out safety plug and put in new one	1	9 8		0 9 8
H. Chadderton	Erecting Making bogie guards	$\frac{3\frac{1}{2}}{2\frac{1}{4}}$	11 8 11 8	2 0 10	1 6 2
R. Ferguson	Erecting	83	10 8	4 13 4	1 0 2
J. Magner	,,	1	11 4	0 11 4	
J)	Fix bogie guards and alter steam pipes		11 4		1 19 8
H. Pitchard	Erecting	$\begin{vmatrix} 1 \\ 3 \end{vmatrix}$	11 8 10 8	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
D. Budd	Repair lamps (broken in transit)		10 8	1 12 0	0 16 0
A. King	Erecting	11/2	10 2	0 7 71	
S. Rawlins	,,	91	11 4	5 4 10	
W. Russell	,,	7 6	$\begin{array}{cccc} 9 & 4 \\ 11 & 0 \end{array}$	$\begin{bmatrix} 3 & 5 & 4 \\ 3 & 6 & 0 \end{bmatrix}$	••••••
H. Billinghurst	33	91	11 0	5 1 9	*******
C. Matterson	,,	4	9 8	1 18 8	
C. Ironside	,,	24	9 8	1 1 9	•••••
E. Ironside E. A. Cooper	,,	$\begin{vmatrix} 1 \\ 5 \end{vmatrix}$	$\begin{array}{cc} 9 & 0 \\ 11 & 2 \end{array}$	0 9 0 2 15 10	••••••
Geo. Hewitt	,,	2	9 8	0 19 4	*******
deo. Fitzgerald	,,	64	9 6	$2 19 4\frac{1}{2}$	
R. Wade	Alter funnel, fix plate on bunker and casing	34	10 4]	1 13 7
W. J. Taylor	plate to springs. Erecting	54	6 0	1 11 6	•••••
	Fix bogie guards		6 Ö		0 12 0
E. M´Lardy	Alter foot plate		10 0		0 2 6
E. Hunt M. M'Farlane	Straighten cylinder rods Erecting		$\begin{array}{ccc} 10 & 2 \\ 8 & 0 \end{array}$		$0 \ 2 \ 6\frac{1}{2}$
	Fix plate on bunker		8 0		0 4 0
W. Ĥoy	Alter funnel, fix plates on bunker, and		7 0		1 11 6
E. Blakeley	casing plates to cover springs.	71	7 0	0 10 0	
J. Wilkins	Erecting Fix bogie guards and alter pipes	$\frac{7\frac{1}{4}}{3}$	$\begin{array}{ccc} 7 & 0 \\ 7 & 0 \end{array}$	2 10 9	1 1 0
A. M'Phie	Erecting	31	7 0	1 2 9	
J. Caites	,,	2	7 0	0 14 0	
J. Nichol	,,	2 3 1 3	$\begin{array}{ccc} 7 & 0 \\ 7 & 0 \end{array}$	0 19 3	
E. Williams	,,	5 1	7 0	$\begin{bmatrix} 0 & 12 & 3 \\ 1 & 16 & 9 \end{bmatrix}$	
,,	Alter bogies	12	7 0	1 10 9	0 12 3
F. Butters	Erecting	1	7 0	0 7 0	******
S. Liversedge	Alter pipes Erecting and trying	1 13	$\begin{array}{ccc} 7 & 0 \\ 7 & 0 \end{array}$	0.19.2	0 7 0
Γ. Donoghue	,, ,, ,,	$\frac{1\frac{3}{4}}{1}$	7 0	$\begin{bmatrix} 0 & 12 & 3 \\ 0 & 1 & 9 \end{bmatrix}$	*******
M. Davitt	,, ,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	7 0	0 7 0	
Geo King	Alter pipes	1,	7 0		0 7 0
Geo. King Geo. Reynolds	Fix plate on bunker Erecting	1 1	$\begin{array}{ccc} 7 & 0 \\ 7 & 0 \end{array}$	0 7 0	0 1 9
Jas. Montgomery	,,	1 4	7 0	0 1 9	
Joseph Lester '	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	}	7 0	0 1 9	,
J. Berry C. Campbell	1 2 0		8 0	4 16 0	
A. J. Crolley	33 33	$\begin{vmatrix} 3\frac{1}{2} \\ 8\frac{1}{4} \end{vmatrix}$	$\begin{array}{ccc} 7 & 0 \\ 7 & 0 \end{array}$	$\begin{bmatrix} 1 & 4 & 6 \\ 2 & 17 & 9 \end{bmatrix}$	
T. Goulden		1 202	7 0	4 12 9	
A. Sturzaker	,, ,, ,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	7 0	0 1 9	********
H. Olliffe	, , ,	2	$\frac{5}{7} \frac{0}{0}$	0 1 3	********
Geo. Whythes	,,	6	$\begin{array}{ccc} 7 & 0 \\ 7 & 0 \end{array}$	$\begin{bmatrix} 0 & 14 & 0 \\ 2 & 2 & 0 \end{bmatrix}$	********
Geo. Whythes	• • • • • • • • • • • • • • • • • • • •	, ,			
J. Jarvis W. Herlihey	, ,, ,,	1	7 0	0 7 0	
J. Jarvis W. Herlihey Geo. Downes	27 27	123	7 0	4 9 3	
J. Jarvis W. Herlihey	, , , , , , , , , , , , , , , , , , ,	$12\frac{3}{4}$ $16\frac{3}{4}$			ŀ

Minute of Commissioner for Railways.

Mr. Downe's Engine from America.

What is being done with this engine? What is proposed to be done? There are rumours that a large quantity of repairs have been made—that the fire-bars have been nearly burnt away, &c., &c.

I should be made aware of anything that occurs. Will Mr. Downe furnish me with a full report of the facts.

Please see 84-444 herewith.—GEo. Downe, 24/1/84.

Telegram from Agent-General to Colonial Secretary.

London, 15 February, 1884.

Móroks credit exhausted. Fresh invoices in from America. Authorize Bank. Inform me number motors ordered.

Urgent. The Minister for Works.—A.S., 18/2/84. The Under Secretary for Public Works, B.C., 18/2/84.—C.W. Railways, B.C., 19/2/84.—J.R. Mr. M. L.,—Please say what money has been provided? Urgent.—G.B., 21/2/84. The cablegram refers to the combined motors and cars of Mr. Downe's pattern. On looking through the papers I find that no money has been provided for payment of these motors. This was doubtless owing to the uncertainty, at the time Mr. Downe left, as to the number that would be required and the price they would cost. The Baldwin Co. were informed that the price would be arranged with Messrs. Cameron & Co., of New York, but no mention was made that payment would be made in London. The motor and car already here has evidently been paid for out of an advance made to the Agent-General on account of twelve motors ordered of the ordinary type.—D.C.M.L., 22/2/84. What amount will be required?—Ch. A. G., 22/2/84. £9,532 will be required in London.—D.C.M.L., 25/2/84.

Minute from Mr. G. Downe to Commissioner for Railways.

Minute from Mr. G. Downe to Commissioner for Rahways.

Re combined cars being used for traffic.

On Saturday last I took the combined car to Bridge-street, thence to Redfern Station and back, and returned to Randwick. It was tried over the turntable twice; as fixed it took sixteen men to turn the table with the car on.

Until it is made to turn easily by two men it would be undesirable to put it on the road, as the traffic would pronounce it unworkable, and the principle of the car would be likely to suffer for want of a suitable table.

Mr. Cowdery being absent elsewhere on duty I could not bring it personally under his notice on Saturday, but yesterday (Monday) I waited upon Mr. Cowdery. We visited the table, which then had one of our lightest cars on. This was tried several times with fair results, but the weight of the car on the end being only 4 tons at most, this was nothing more than could be expected; but the engine and car being 11½ tons on the one end requires provision to overcome the increased friction. Mr. Cowdery said he would make the necessary alterations so that two men could turn it with car.

When ready he will inform me, and I will make another trial; if right, the car will at once be put out for traffic use.

GEO. DOWNE, 26/2/84.

Mr. Cowdery, B.C., 27/2/84.—G.B. The turntable has been fixed, but requires a little alteration and which will be completed this week.—G.C. (per J.L.), 27/2/84. Commr.

Minute of Commissioner for Railways.

Provision to be made in England for Motors ordered from America.

See cablegram from Agent-General and report thereon. Herewith I recommend that £10,000 be placed to credit of Agent-Ch. A.G., 27/2/84.

Appd. —F.A.W., 29/2/84.

Since above was written Mr. Downe has seen the invoice cost of the two motors that have arrived. Their cost is about £1,150 each, and a less sum than £10,000 will now be sufficient. The sum of £7,750 will cover the total cost. The amount is made up as follows:

One motor, at.....

Memo. to Public Works to provide £7,750.

D.C.M'L., 3/3/84.

Minute from Commissioner for Railways to Under Secretary for Public Works.

An order having been given to the Baldwin Locomotive Company of Philadelphia, for six motors, of the pattern designed by Mr. Downe, I have to request that the Treasury may be asked to have the sum of £7,750 placed to the credit of the Agent-General in London, to meet the cost of the same, to be paid from the vote, for purchase of stores.

The matter is very urgent, and as the motors are coming forward I would suggest that the money be provided by cablegram.

Ch.A.G., B.C., 3/3/84.

Railways.—J.R., 4/3/84.

Railways.—J.R., B.C.,

omitted. Write Treasury.—J.R., 4/3/84. Accountant, with papers.—G.B., B.C., 7/3/84. Approved.—F.A.W., 6/3/84. Seen.—F.W., B.C., 1/3/84. Sec.

The Secretary for Public Works to The Commissioner for Railways.

I should like to be informed what expense has been incurred up to date upon the combined motor and car designed by Mr. Downe, and also if a report that I have heard is correct, that the engine is being taken out of the first car with a view of putting another in; if this is so, why is it being done?

Mr. Downe.

The April, 1884.

Begin in the engine is being taken out of the first car with a view of putting another in; if this is so, why is it being done?

F.A.W., 16/4/84.

Mr. Downe.

The report as to the engine first fitted to the car being taken out, and another put in its place, is quite correct. The reason of its being done was to test the second engine that arrived and was erected; a third engine is nearly ready for trial, and when completed the one now in will be taken out and it put in for test. Two more engines have also arrived; when erected they will be tried in a similar manner, unless the cars being built for these engines by Mr. Wearne are completed in time to make the tests in them. Commissioner's 84/106 and my 84/444, forwarded to Secretary on 20/3/84; have a list of cost attached, to which should be added about £23 for the additions pointed out in my 84/444, and revarnishing car prior to being put on the road.—Geo. Downe, 17/4/84. Commissioner.

When papers are duoted they should be obtained. Please see to this.—G.B., B.C., 22/4/84. Mr. Downe.—Urgent. Papers herewith.—Geo. Downe, 24/4/84. Commissioner. Stated istinctly on this paper what the cost has been.—C.A.G., 25/4/84. Mr. Downe, B.C.

On Commissioner's 84/525, with these papers attached, the entire cost to date of February 1/84, is shown as £2,925 15s. 7d. for engine and car, of which amount £103 6s. 1d. is to be refunded.

Since February 1/84, wages £23, and stores £5. 18s., have been expended; this was in doing what I pointed in my 84/444 to engine and revarnishing the car ready for the road, making a total cost to date of £2,954 13s. 7d., and includes a total of £160 13s. 8d., being all charges since its arrival in the Colony for unpacking, erecting, additions, and making the various tests of both engine and car.—Geo. Downe, 26/4/84. Commissioner.

For Minister's information.—Ch.A.G., Commissioner, 28/4/84. Seen.—F.A.W., 30/4/84.

LEGISLATIVE ASSEMBLY, Thursday, 1 May, 1884.

5. Mr. Downe's Patent Combined Motor and Car (Formal Motion):—Mr. Poole moved, pursuant to Notice, That there be laid upon the table of this House a copy of the Baldwin Company's Certificate of the performance under steam of Mr. Downe's new Patent Combined Motor and Car.

Question put and passed,

Get

220.

Get this copied.—G.B., 6/5/84. Mr. H.M'L. Do you think the copy made (herewith) is what Mr. Poole refers 3.B., B.C., 8/5/84. Mr. Downe. Yes.—Geo. Downe, 9/5/84. Mr. Berner. Mr. H. M'L. Herewith. Is it to 1 on table?—H.M'L., 2/5/84. Yes.—Ch.A.G., 13/5/84. U. Secty., 14/5/84. to?—G.B., B.C., 8/5/84. Mr. Down be laid on table?—H.M.L., 2/5/84.

APPENDIX.

Minute from Mr. G. Downe to Commissioner for Railways.

New Compound Engines.

New Compound Engines.

I have to bring under your notice that the compound motors received from the Baldwin Locomotive Works are in several respects very badly finished, so much so that had I put them on the road for traffic in the condition they were received there is no doubt they would have failed in performing the work required of them, and of which they are capable.

The joints of valve casings connecting same to cylinders as well as those on the cylinders, and the change valves of all the engines had to be refaced. The connections between high and low pressure cylinders containing the stuffing-boxes of one engine had also to be refaced; several of the guides required resetting; the coupling rods of one engine were of unequal length; about one-half of the pipe connections had to be reset to all the engines, and the piston valves of each engine are so small that the effects of compounding may be said to be completely lost, and new valves must be fitted to each engine.

The estimated value of work to be done to these engines to make them such as they should have been when received from the makers is £180.

1.1 (422) 1.3 25 3 2 3 1

The defects above noted are of far greater importance than at first appears, it being the introduction of a new principle, and one which is looked upon as a source of economy in our working, the design was endangered from imperfect work. Had this not been closely watched the principle would in all probability have been condemned. GEO. DOWNE

15/5/84. -Сн. А.G.,

I think the manufacturers should be made to pay for these defects caused by defective workmanship. 19/5/84. I concur—F.A.W., 19/5/84. Write to Baldwin Company accordingly.—Ch.A.G., 19/5/84. B.C., 28/5/84. Noted.—Geo. Downe, 28/5/84. Commissioner. Mr. Downe,

Burnham, Parry, Williams, & Co., Philadelaphia, to The Commissioner for Railways, Sydney.

Dear Sir;

Baldwin Locomotive Works, Philadelphia, 23 July, 1884.

We have the honor to acknowledge receipt of your valued favor, No. 84-2,203 T, of May 27th, ulto., advising us that in consequence of certain defects which have been discovered in the last five compound motors built by us for your Government, it is proper that we should bear the cost of placing them in the proper condition which they should have been in when received. We note that this cost has been placed at £180.

In reply we beg to say that we have requested our Mr. William Rhodes, who is now en route to Sydney, to go over this matter with Mr. Downe, and to adjust it in such a manner as will be alike satisfactory to you and ourselves. To this end we have authorized him to make payment to your Government of such amount as it may be decided upon should properly be charged to us. We trust this course will meet your approbation.

We take this occasion to say that the first ten of the Mogul Locomotives which we are building upon your valued order are now being completed, and will be forwarded to New York within the next week, for shipment by the ship "Kelverdale," of Messrs. R. W. Cameron & Co's line. We hope shortly to advise you of this shipment by cable. The remaining ten locomotives of the order will be completed by September 1st.

Awaiting your further commands, we remain, &c.,

Awaiting your further commands, we remain, &c.,
BURNHAM, PARRY, WILLIAMS, & CO.,
(Per A. B. JOHNSON.)

Mr. Downe, B.C., 2/9/84.—G.B.

Noted. -GEO. DOWNE, 3/9/84. Commissioner.

[Ordered to be appended, 29 October, 1884.]

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Minute from Mr. G. Downe to Commissioner for Railways.

Additional Motive Power.

ADDITIONAL motive power is required for working the various lines, and I suggest the same be ordered with the least possible delay. Additional motive power is required for working the various lines, and I suggest the same be ordered with the least possible delay.

The number of engines at present in stock are seventy-six, including seven combined. One of the latter—that made by Messrs. Kitson & Co.—may be written off so far as traffic is concerned, thus leaving seventy-five for all purposes. Of this number four can only be used for shunting and service work (hauling stores, water-tank, &c.); seven are laid by requiring new boilers; and an average of four-teen are in the shops for overhaul; a total of twenty-five,—leaving fifty available for traffic. Of this number forty-six are regularly running; leaving a reserve of four. Additional specials often absorb these; so that practically every engine it is possible to keep in running condition is on the road. This is doubtless caused by the excessive wear from the roads over which they run, together with the mileage demanded by the time-tables.

From the above it will be seen with the present stock of motors and the limited means at my command for effecting the necessary repairs it is almost impossible to keep the traffic properly supplied.

I would suggest that thirty additional engines be ordered at once. At first sight this number may appear as excessive, but if these are obtained I could make such alterations in my night-staff as would save the Department £17 8s. per night, or £6,351 per year, besides reducing the repairs demanded of the day-staff.

The performance of the compound engine during the past three months has been such that I have no hesitation in recommending that the order be for this class of engine, and if approved the cars for these engines will also supply the traffic with additional passenger accommodation required.

Attached are lists giving performance of the compound during the past three months, with a comparison of one of the Baldwin engines working a run on the same line, for Commissioner's information and guidance.

In addition to the economy as shown on the lists, it

RUNNING of Combined Car for month of May.

6/8/84.

		No.	No.		. Consu	mption	of stores.		
Date.	Where running.	of trips.	of miles.	Empty.	Coke.	Oil.	Tallow.	Waste.	•
2 3 4 5 6 7 8 9 10 11 12 12	Randwick-shed to Bridge-st Bridge-street to Redfern """""""""""""""""""""""""""""""""	1 18 19 16 19 20 22 2 2 20	mls. chns	mls. chns. 7 72 72 7 72 72 7 72 7 72 7 72 7 72 7	tns. cwt. 0 2 0 2 1 1 1 3 0 19 0 14 0 16 1 0 0 8 1 0 0 5	· 687778388	OZS. 2 2 1 1 4 1 1 1 1 1 1 1 1 2 2	14-14 : +21-52-52-52-52-52-44-52-52	Run by engine 70. Run by engine 72. Run by engine 71.

RUNNING of Combined Car for month of May-continued.

{		No.	No.		Cons	umption	of stores		
Date.	Where running.	of trips.		Empty.	Coke.	Oil.	Tallow.	Waste.	
13 14 15 16 17 18 19 20 21 22 23 24 25 26	Bridge-street to Redfern ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	18 15 18 20 20 2 20 19 17 20 19 22 1 20	mls. chns. 62 44 52 10 62 44 69 40 69 40 24 52 69 40 66 2 76 36 69 40 1,307 20	mls. chns. 7 72 7 72 7 72 7 72 7 72 7 72 7 72 7 7	tns. ewt. 0 19 0 17 1 1 1 0 0 13 0 5 0 12 0 12 0 6 0 14 0 13 0 2 0 13	7 8 8 8 8 8 3 7 7 7 6 7 8 1 8	OZS. 1 1 4 4 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1	131212121212121212121212121212121212121	Run by engine 72. Run by engine 70. Run by engine 71.
	Motor No. 70	194 21 154	684 72 69 40 552 68	102 56 27 56 71 8	7 15 1 0 7 15	75 17 64	12½ 3¾ 9¾	5½ 1 4½	Showing total running and consumption of stores of each engine.

24 lbs. 9 mls. 53 chns.

G.D., 6/8/84.

RUNNING of Combined Car for month of June.

		No.	No.		Const	ımption	of stores		
Date.	Where running.	of trips.	of miles.	Empty.	Coke.	Oil.	Tallow.	Waste.	
5 6 7 8 9 10 11 12 13 14	Bridge-street to Redfern ,, ,, Coogee ,, Redfern ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,	10 17 22 1 14 20 20 19 20 6	mls. chns. 34 60 59 6 76 36 12 26 48 52 69 40 66 2 69 40 20 68	mls. chns. 3 76 7 72 7 72 7 72 7 72 7 72 7 72 7 72 7	tns. cwt. 0 8 0 13 0 14 0 11 0 12 0 13 0 13 0 5	4 7 8 2 5 6 6 6 6 3	1 2 2 1 2 2 2 2 2 2 1		Run by engine No. 70.
.		149	526 60	75 4	5 4	53	17	4	
1 2 3 4 5 11	Bridge-street to Coogee		24 52 45 14 55 48 52 10 34 60	7 72 7 72 7 72 7 72 7 72	0 7 0 11 0 13 0 10 0 7	4 6 8 7 4	1 1 1 2		Run by engine No. 71.
	and back to Randwick shed for new car		۲	6 77	0 3	4	ł ł		J
		 56	212 24	38 48	2 11	33	41	2	-
14 15 16 17 18 19	Bridge-street to Redfern Randwick-shed to Bridge-st Bridge-street to Redfern	5 19 20 18 20	17 30 	7 72 7 72 7 72 7 72 7 72 7 72 7 72	0 5 0 4 0 15 0 19½ 0 18 0 18½	2 1 6 6 6 6	1 1 2 2 2 2	14-14-14-14-14-14	Run by engine No. 72.
		82	284 76	47 32	4 0	27	10	3	
20 21 22 23 24 25 26 27 28 29 30	Bridge-street to Redfern ,, Coogee ,, Redfern ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,	20 20 2 20 19 20 20 20 20 20 20 20 20 17 2 20	69 40 69 40 24 52 69 40 66 2 69 40 69 40 59 6 24 52 69 40 660 72	7 72 7 72 7 72 7 72 7 72 7 72 7 72 7 72	0 10½ 0 9½ 0 6 0 9½ 0 8½ 0 9½ 0 8½ 0 9 0 9 0 11½ 4 11	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	1212141414121212121212121212	Run by engine No. 73.
	Total running of combined car for June		1,684 72	247 76	16 6	163	511	14	

G.D., 6/8/84.

RUNNING of Combined Car for month of July:

		1		1]	Consu	mption o	f stores.	1
Date.	Where running.	No. of trips.	No. of miles.	Empty.	Coke.	Oil.	Lub.	Waste.	
12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 30	Bridge-street to Redfern Coogee Redfern	18 2 20 20 18 20 20 20 20 20 20 20 20 20 21 22 22 22	mls. chns. 62 44 24 52 69 40 69 40 69 40 69 40 69 40 69 40 69 40 69 40 69 40 69 40 69 40 69 40 69 40 69 40 69 40 69 40 69 40 69 40 69 40	mls. chns. 7 72 7 72 7 72 7 72 7 72 7 72 7 72 7 7	tons. cwt. 0 6 0 3 1 0 6 1 2 0 8 0 8 0 7 1 0 9 0 9 0 9 0 9 0 9 1 1 0 1 1 0 1 1 1	84877765 3665555555		र्नश्चर्नस्थानश्चर्नश्चनश्चरमञ्जलः ः नस्यानश्चरमञ्जलश्चरमञ्जनश्चरस्थानश्चरमस्य	Run by engine No. 70.
28 29 30 31		20 9½ 19 10½ 59	69 40 33 1 66 2 38 18 206 61	7 72 3 76 7 72 3 76 23 56	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	8 3 7 3 21	17½ 2 1 2 1 6	834 84 1274-1274	Run by engine No. 71.
19	Randwick shed to Forest Lodge, for new car, and back to Randwick shed.			6 77	0 2	1	01		Run by engine No. 72.
1 2 5 6 7 8 9 10 11 15 16 17 23	Bridge-street to Redfern """"""""""""""""""""""""""""""	21 15½ 20 5 20 20 20 20 20 18 16½ 12; 13½	72 78 53 69 69 40 17 30 69 40 69 40 69 40	7 72 7 19 7 72 7 72 7 72 7 72 7 72 7 72 7 72 7 7	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	8 8 8 8 8 8 8 8 12 12 7 6	1 03 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	012 012 012 012 012 013 013 014 015 015 015 015 015 015 015 015	Run by engine No 73.
18 19 20 21 22 24 25 27 28 31	Bridge-street to Redfern ''' ''' Coogee '''' Redfern '''' ''' ''' Coogee ''' ''' ''' Coogee ''' ''' ''' '' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' '' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' '' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' '' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' '' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' '' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' ''' '' '	221½ 21 21 21 21 21 21 21 21 21 21 21 27 20 17	769 57 72 78 72 78 3 38 12 26 72 78 72 78 72 78 72 78 72 78 72 69 40 59 6 606 70	7 72 7 72 7 72 7 72 7 72 7 72 7 72 7 72	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	109 4 8 7 7 6 6 4 7 5	2 2 2 1 1 1½ 1½ 1½ 1½ 11½ 11½	7 034 04 01 1 01 01 01 01 01 01 01 01 01 01 01 0	Run by engine No. 75 .
	Total running of combined Car for July.	775½	2,758 44	373 60	$\begin{array}{c c} 20 & 2\frac{\mathbf{i}}{2} \end{array}$	297	52	231	

G.D., 6/8/8¹4.

RUNNING for the month of May of Motor No. 57.

te.		Where to.	No. of Trips.	No. of I	Miles.,	Empty running.	Çok	e.	Oil.	Tallow.	Waste
ay			<u></u>	mls.	che	mls. chs.	tna	cwt.	1	<u> </u>	<u> </u>
ı	Bridge-street	to Railway	22	76	36	1 61			16		١,
2	•		22	76	36	1 61	0	19		2	1 2
3	**	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	22	76	36		0	19	16	2	2
4	••.	1)			59	1 61	0	19	16	2	1 1/2
â	**	Woollahra	$5^{\frac{1}{2}}$	1		0 28	0	14	8	1	212242444
23444445	٠,	Enmore	-	34	20	**********	0	6	8	1	1 1
Ă	,,	(1	1	7	70	•••••	• • • • • • •	• • • • •			
ž l	**		1 1	12	26		*****				1
É	"	Leichhardt	2	_4	57	2 78					
	"	Railway	22	76	36	0 56	0	$20\frac{1}{2}$	16	2	1
6	**	,,	22	76	36	0 56	0	18	16	2	ī
7	,,	,,	22	76	36	0 56	0	19	16	2	ĺ
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1	, ;	33	182	62	44	0 56	0	191	16	2	121212
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-		Total	6421	2,240	19	· 38 11	28	111	484	61	15

G.D., 6/8/84.

Running for the month of June of Motor No. 57.

Date.		Where to	•	No. of trips.	No. of	Miles.	Empty running.	Coke.	Oil.	Tallow.	Wast
June				<u> </u>	mls.	chns.	mls. chns.	tns, cwt.	1 -	1.	<u> </u>
.1	Bridge-street t	o Railway		16	55	48	0 56	0 131	12	2	1
2	,,	,,		24	83	$\overline{32}$	2 66	$0 20\frac{10^{2}}{8}$	12	2	12-52-12-12-12-12-14
3	,,	,,	*******	24	83	$3\overline{2}$	$\tilde{2}$ $\tilde{66}$	0 191	12	2	2
4	,,	,,		24	83	$\tilde{32}$	2 66	$0.13\frac{1}{8}$	11	2	2
5	,,	,,	**********	23	79	$7\overline{4}$	2 66	0 184	10	2	2
6	"	,,	*************	24	. 83	$3\hat{2}$	2 66	0 184	10	2	2
7	"	,,		$\overline{24}$	83	$3\overline{2}$	2 66	$0.18\frac{1}{4}$	9	2	2
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8	,,	Waterloo		î.	6	$\frac{20}{72}$			•••		• • • • • • • • • • • • • • • • • • • •
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14	"	,,	••••••	23			2 66	$0 19\frac{7}{2}$	9	2	121121212121214
15	"	. "	• • • • • • • • • • • • • • • • • • • •	23	79	7 4	2 66	$0 17\frac{1}{2}$	8	2	1/2
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15	"	Botany			6	72		*********			
16	"			1	16	64		************			
17	,,			24	83	32	2 66	0 17	11	2	1
18	,,,	,,		23	79	74	2 66	0 17	11	2	Ī
19	,,	,,		23	79	74	2 66	0 17	11	2	į
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30	;,	,, .		22	76	36	2 66	$0 19\frac{1}{2}$	9	2	163163163163163143163163163163163163163144163
	Total			612	2,160	20	80 68	0 25.13	296	56	14

25 lbs. 7 miles 46 chains.

G.D., 6/8/84.

Running by Motor No. 57 for July.

Date.		Where runn	ing.	No. of trips.	No. of n	ailes.	Empt	у.	Col	ce.	Oil.	Tallow.	Waste
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	Bridge-street ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,	to Redfern ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,		12½ 23 22 21 22 22 20 12½ 22 22 22 22 22 22 22 22 22 22 22 22 2	mls. 71 72 79 74 43 79 76 76 76 69 43 76 76 76 76 77 76 77 76 77 76 77 77 77	chs. 19 78 74 36 73 36 36 36 36 36 36 36 36 36 36 36	mls. 1 0 0 1 2 1 0 0 0 0 0 0 0 0 0 0 1 0 0 0 1 1	chs. 61 56 56 56 56 56 56 61	tns. 0 0 0 0 0 1 1 0 0 0 0 0 0 0 1 1 1 1 1	cwt. 19½ 18½ 18 18 0 15 1½ 2 18 19 15 18 12½ 1 19 19 11 11 13	8 8 8 16 17 16 16 16 16 16 16 16 16 16 16 16 16 16	134 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	+23-+23-+23-+23-+23-+23-+23-+23-+23-+23-
	Totals		,	4041/2	1,405	51	21	6	18	10	274	381	10

29fbs. 5 miles 17 chains. G.D., 6/8/84.

RECAPITULATION shewing number of miles run and stores used by Baldwin Motor and Combined Motor.

			Motor	No. 57.					Combin	ed Car.		
	Ma	ıy.	Ju	ne.	Ju	ıly.	M	ay.	Ju	ne.	Ju	ıly.
Mileage run Coke used Axle oil Tallow	pi 4 11	chs. 30 cwts. 11½ nts. 84 os.	11	chs. 8 cwts. 13 nts. 296 bs.	11	chs. 57 cwts. 10 nts. 274 bs. 81	l î	chs. 60 cwts. 10 nts. 156 bs. 53		chs. 68 cwts. 6 nts. 63		
Waste	11 1 11	os. 5 os. 8 chs.]]]	bs. 4 bs. 25 chs.]]]	bs. 0 bs. 29 chs.		bs. $10\frac{3}{4}$ bs. 24 chs.]	bs. 4 bs. 8 chs.	1b 23 1	s.
Miles run to 1 pint of oil		57	7	46	5	17	9	53	11	68	10	43

Combined.	Motor 57.
(Downes.) 2,278 2,241 1,426	(Baldwin's.) 1,508 1,932 3,132
5,945	$\frac{6,572}{5,945}$
	697

EXTRACT from The Sydney Morning Herald, Wednesday, 27 August, 1884.

Legislative Assembly, Tuesday, 26 August.

Mr. Poole rose to call the attention of the Chief Secretary to a matter affecting the tramways. He said that it had been stated over and over again in the House that when supplies were required for the tramways and other public services, all things being equal, the Government of the day would endeavour to obtain these supplies in the colony. Now it was freely rumoured in the city some ten or twelve days ago that the Government intended to send, or had sent, an order to America for a considerable number of those new-fangled tramway motors. He would like to ask the Chief Secretary if this were the Government in sending an order for an additional supply of them. Could not motors be made in the colony? There seemed to be much conflict of opinion amongst men able to judge as to the suitableness of the motors obtained from America for our tramways, and he had heard that the whole staff of men at the Randwick workshops had been kept busily employed in repairing these motors ever since they arrived in Australia.

Mr. Stuart soid that a half-dozen motors were obtained from the Baldwin Company for the tramways here merely

Mr. STUART said that a half-dozen motors were obtained from the Baldwin Company for the tramways here merely as an experiment, and the understanding was made that if they succeeded others would be ordered. As the motors were of a new description there was considerable expense in making the necessary patterns, and an understanding was come to that the number should be increased to twenty on the condition mentioned. No order, as far as he knew, had yet been given for these extra motors. Two of those which had already been obtained had for some time been in the workshops. The motors at first, as was generally the case with new articles, required some alterations. Yet he understood that they were giving every satisfaction now. The Baldwin Company were not altogether favourable to the manufacture of the motors, but after they went into calculations they altered their opinion in regard to them. He understood that his hon. colleague had called for a specific report from competent men on the general efficiency of the motors.

Mr. Poole asked whether the Government would delay sending for the remainder of the motors until the report alluded to was furnished.

Mr. STUART said that the reports from the officers in charge had been thoroughly satisfactory, and they justified his hon. colleague in fulfilling the understanding with the Company. Still, he would like for his own satisfaction, as well as for that of the general public, that the report would be a full and critical one.

Mr. A. G. TAYLOR replied. He thought there had been no waste of time in discussing this peculiar case.

Minute of the Colonial Secretary.

Tramway Combined Car.

Colonial Secretary's Office, Sydney. in the Lorightius Assemble Label and the Minister of Public Works to questions asked me, without notice, in the Legislative Assembly last night and to my replies thereto.

I will be glad to know whether any independent examination into the working of these cars has been made and by whom, and what is the nature of their report?

I will also be glad to know how the arrangement with the Baldwin Company stands, and whether it has been decided or recommended to send any and what further orders to that Company; also, whether any steps have been taken to call for tenders in the Colony as was, if I mistake not, contemplated in the original minute of the Commissioner for Railways when dealing with Mr. Downe's suggestions.

A.S., 27/8/84.

The Under Secretary for Public Works, B.C., 27/8/84.—C.W. Railways, B.C., 28/8/84.—J.R. Mr. Downe will please see me with papers. After the order for additional motors had been authorized I sent the papers to Mr. Downe and drew his attention to the obligation we were under of inviting tenders in the Colony.—CH.A.G., 5/9/84. Will be the colony.—CH.A.G., 5/9/84. Mr. Downe see Mr. Downe on Tuesday, at 2.30 p.m.

Minute of Commissioner for Railways.

Let me have, for the Committee on Rolling Stock, all recent papers about Mr. Downe's motors and the proposal to order thirty of them CH. A. G., 16/10/84.

Herewith.—L.P.I., 17/10/84.

I have no doubt about the superiority of the combined motor and car over the separate motor; and if steam is to be continued I should recommend that this order be given; but in view of the possibility of other motive power being used (notably compressed air, for machinery in connection with which we have entered into negotiations) I cannot advise that we order more motors than are absolutely necessary for the traffic even at same risk of stopping it. Instead, therefore, of thirty motors I would suggest that we give an order for five only. I will endeavour to see in the meantime whether some of the trams cannot be stopped running in the middle of the day. We must order five motors for Newcastle to Plattsburg Line—in all ten.—Ch.A.G., 9/8/84.

After perusing the report of the Board which I appointed to inquire into the expenditure incurred in motor running I am compelled, from a conviction that owing to the paucity of motive power we are running at extravagant cost, to recommend that the whole order named by Mr. Downe be given at once, viz., thirty motors. I do this, the more willingly because if any other power than steam power be substituted for tramway traffic in our streets the steam motors are sufficiently powerful to work the proposed light lines of railway on the plains of the interior.—Ch.A.G., 25/8/84.

Approved.—F.A.W., 25/8/84.

Extract from M. P. 84/4,010, being a report from Board, consisting of Messrs. G. Downe, R. J. Sheridan, and A. Richardson, appointed to inquire into the staff arrangements at Randwick—Date of report, 15 August, 1884.

It will be seen from the evidence of these officers, many of whom have had considerable experience, there is a general concord of opinion that under existing circumstances the work could not be done better, or more economically, while at the same time the opinion is unanimous, that with additional shop accommodation and machinery and a considerably increased number of motors, a large saving would be effected.

The advantages to be gained by additional shop accommodation and machinery are so apparent as to need little

The work will be done more promptly than is possible at present, and far more actual work per man will be done when the men have room to move about, which they certainly have not under existing circumstances. By increasing the number of motors the necessity for night-work and overtime, which is without doubt, even under the most favorable circumstances expensive and unsatisfactory in the extreme, would be removed.

Thirty motors additional ordered this day, 25/8/84. Postponed by Minister.

Minute of Commissioner for Railways.

Thirty Motors, combined type, for Tramways.

THE Minister has approved of the order being given. I do not know that the whole order should be given to the Baldwin Company. I should like to try some English firms with a few of them. Are they so urgently required that none can be built in Sydney owing to want of time? Mr. Downe for report; he will please see me on the subject also.

Reply herewith.—Geo. Downe, 29/8/84.

Сн. А. G., 25/8/84.

Minute of Commissioner for Railways.

THE Minister for Works, accompanied by the Commissioner for Railways, will visit the Randwick workshops on Monday, with special reference to the new combined motors and cars.

Will Mr. Downe be good enough to be present to afford information respecting running, cost of repairs, and all particulars respecting these motors.

CH.A.G., 27/8/84.

Mr. G. Downe to Commissioner for Railways.

Reply to Commissioner's Minute, 26/8/84, re thirty Motors.

In replying to Commissioner's minute of above date, I am of opinion it would be undesirable to delay in any way the delivery of the whole of the motors, the order for which has been approved.

The experience of the past shows that each engine requires a general overhaul about every six months; this with the present number running means that 100 engines should pass through the repairing shops annually. The utmost that can be done (with present facilities, including extra time by the day-hands, and running the machinery at night, with a second set of men for several of the machines) is to overhaul about seventy engines; besides the night running repairs to those on

The motors run in a great number of cases excessive mileage, which is only done at increased cost, both to daily running and repairing expenses. It will be seen from this that it is not only difficult to keep the traffic supplied at present, but the difficulty is increasing every month, and it is only a question of time when the running must be thrown into a state of confusion,

Then as I pointed out in my minute to Commissioner on 7/8/84, by securing the number asked for speedily, such a change could be made in the night-staff as would save fully £6,000 per year. To do this ten of those asked for will be absorbed; besides there is now on the road at least ten engines that cannot be reckoned on to last beyond the end of the year for running purposes, and will then require either the boilers to be extensively repaired or replaced. This work cannot be touched for nearly twelve months; consequently ten will be wanted to supply their place, because the repairing facilities of the departments, which have always been limited, will not be enlarged for fully nine months, that is, if the contractors for the shops authorized complete them to specified time, a result not generally attained.

At present we have practically no reserve to meet the demands of the traffic, and I do not think a less number than ten should be always in readiness for emergencies; thus it will be seen the number required to replace those to be taken off the road, together with those necessary to effect a saving, and form the reserve before referred to, fully absorb all approved of being ordered.

From the foregoing it is, I think, apparent the thirty motors should be secured with the least possible delay. There is little doubt if the order is placed with the Baldwin Company, after three weeks they would be able in the present state of trade in America, to deliver at least four every week; this means 10½ weeks to execute the whole. Now, assuming ten of the number were sent to us via 'Frisco, they could not possibly arrive and be put together before the end of the year, and if the balance were shipped and sent monthly per sailing vessels, the last would not arrive, and be available for traffic before April next year.

To divide a portion of the order among some English firms, means that the whole would not be ready for use before June, and perhaps July, and further loss of three to four months; with the facts showing the condition in which we are placed, I must leave it to the Commissioner to decide what course shall be pursued in regard to the order.

I would here mention that no one more than myself would like to see the motors manufactured in the Colony, but to call for tenders here for any of these would cause such a delay and inconvenience that I cannot see my way to recommend it; besides I do not think it would place the Colonial manufacturer in a fair position to compete.

I would, however, suggest, with a view of endeavouring to establish such a manufacturing industry in the Colony, that specifications be prepared and tenders invited for the manufacture of thirty more to be delivered on or before June, 1886, allowing three months for preparation of plans, specification, and tenders to be received. A fair time would then be given for any person or company to obtain the required material, labour, and machinery necessary to execute with the greatest economy, and I certainly think there would be a far better chance of establishing the industry by such a course.

I would further add the loss of a few engines of the present order would be more than compensated by the advantages to the manufacturers themselves as well as the convenience that would necessarily be accorded the travelling public.

GEO. DOWNE 29/8/84.

[Ordered to be appended, 29 October, 1884.]

Memo. for Commissioner for Railways.

Sydney, 17 September, 1884.

The Baldwin Locomotive Works cable as follows:—" Will contract to deliver, boxed at works, thirty Downe's combined AUGUSTUS MORRIS.

motors; ten each delivered in November, December, and January; price, £1,075 each.

Mr. Downe to see is the price reasonable. Did not Fowler offer to deliver in steam, in Sydney, for £1,000?—Ch. A.G., 19/9/84. Fowler & Co.'s papers attached, 22/9/84.

1st. The price is a full one. 2nd. There are no papers attached containing the offer of Messrs. Fowler & Co., but I understood from Mr. Greig he had verbally informed the Commissioner that he would deliver them on wharf at Sydney for £1,050 each engine. I would point out to Commissioner that another month has elapsed since my minute recommending the purchase of motors, and, as far as I am aware, an order has not yet been given. As I then stated, it is becoming a question of very little time when the present traffic will be seriously interfered with. To prevent this, and give me the requisite number to effect the saving referred to in my minute of 29/8/84, I would urge that no further delay occur in placing the order.—Geo. Downe, 26/9/84. Commr.

I again bring this matter under the attention of the Minister. At the same time, even if a break-down did occur in the traffic it would only mean the withdrawal of a number of trams now running; they couldn't all go suddenly.—Ch.A.G., 26/9/84.

Mr. D. Greig to The Commissioner for Railways.

[Extract from T 84/3,033.]

Dear Sir,

43, York-street, Wynyard-square, Sydney, 4 July, 1884.

I was sorry that you were so busy to-day, as I wished to have had some talk with you, but I saw it was no use bothering you.

bothering you.

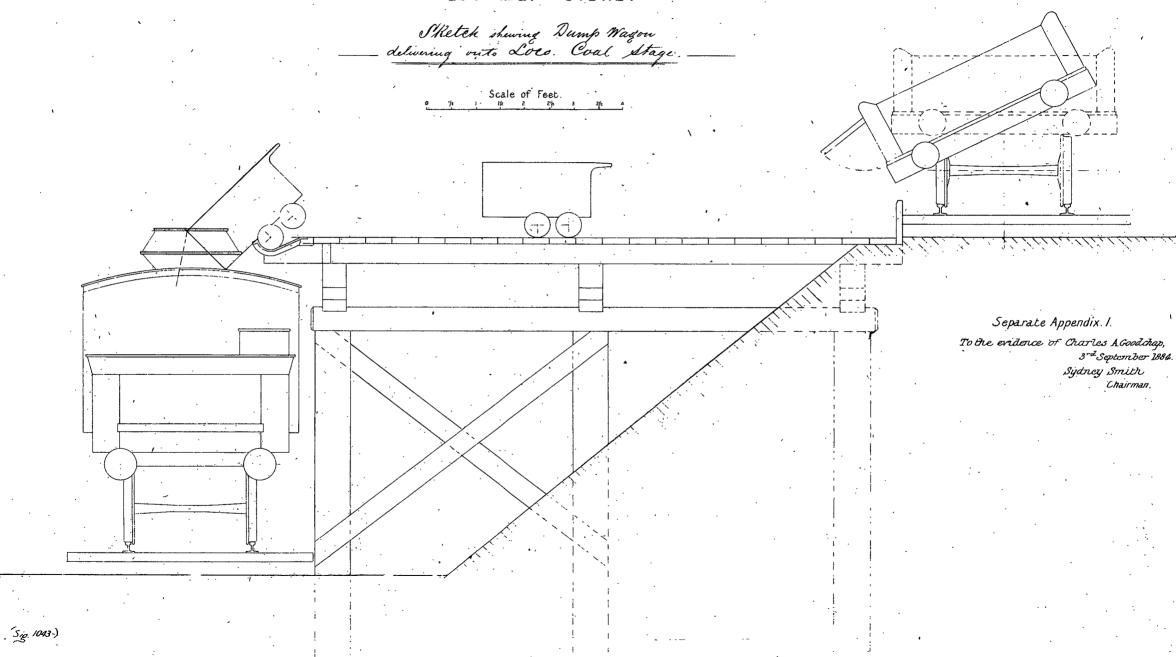
Regarding the compounding of the tram-car engines, I am quite certain it is in the right direction, not only from the great saving it will effect in fuel, but from the much less nuisance from noise and exhaust steam. I can see clearly that your Engineer understands what he is about, and I learnt a great deal in the shops from the excessive wear and tear which evidently take place. I do not like the vertical engine, nor do I consider that it is at all necessary to have the four cylinders. When you are in the market for this kind of engine I should be obliged by being allowed to tender with our design.

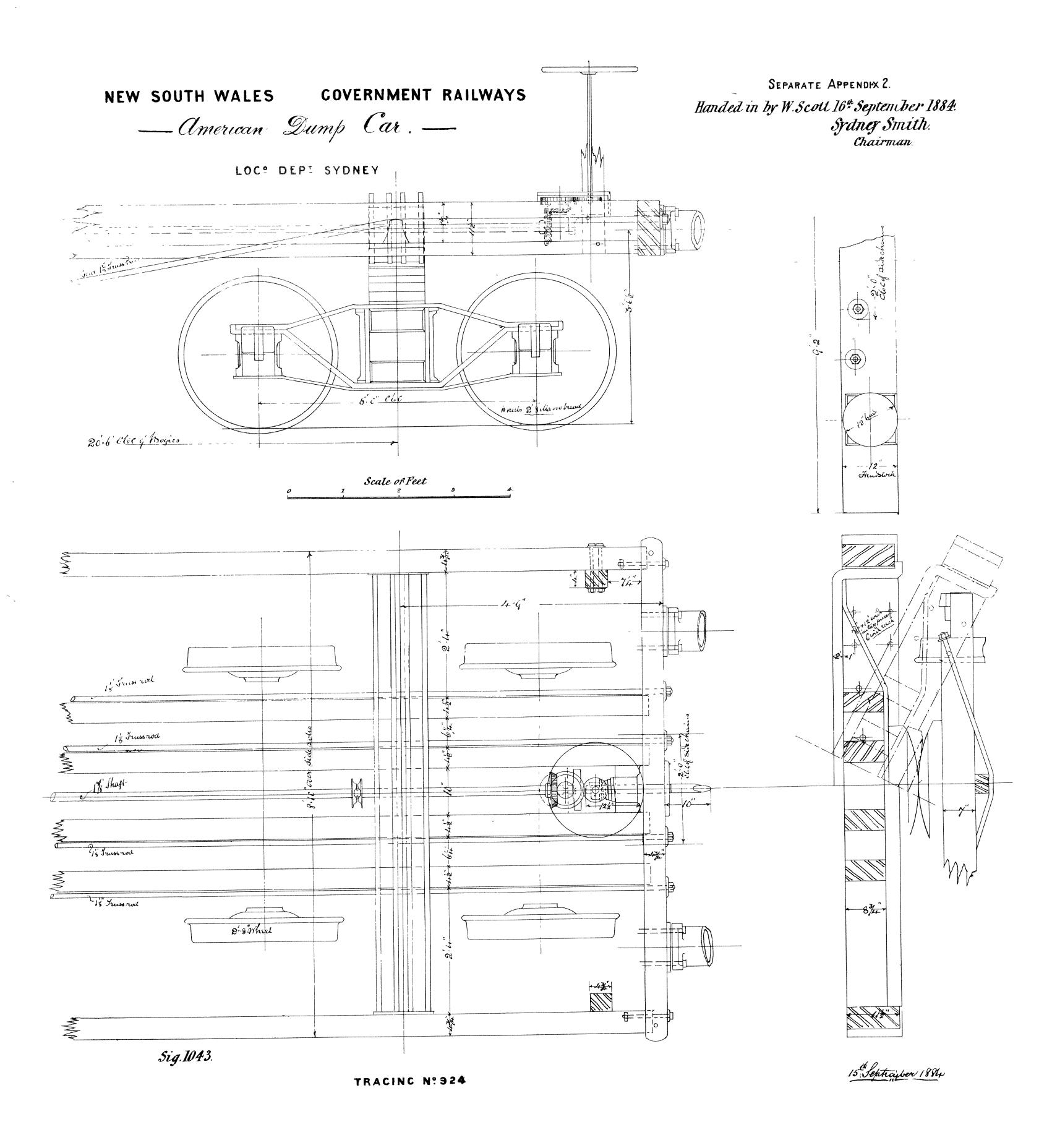
DAVID GREIG.

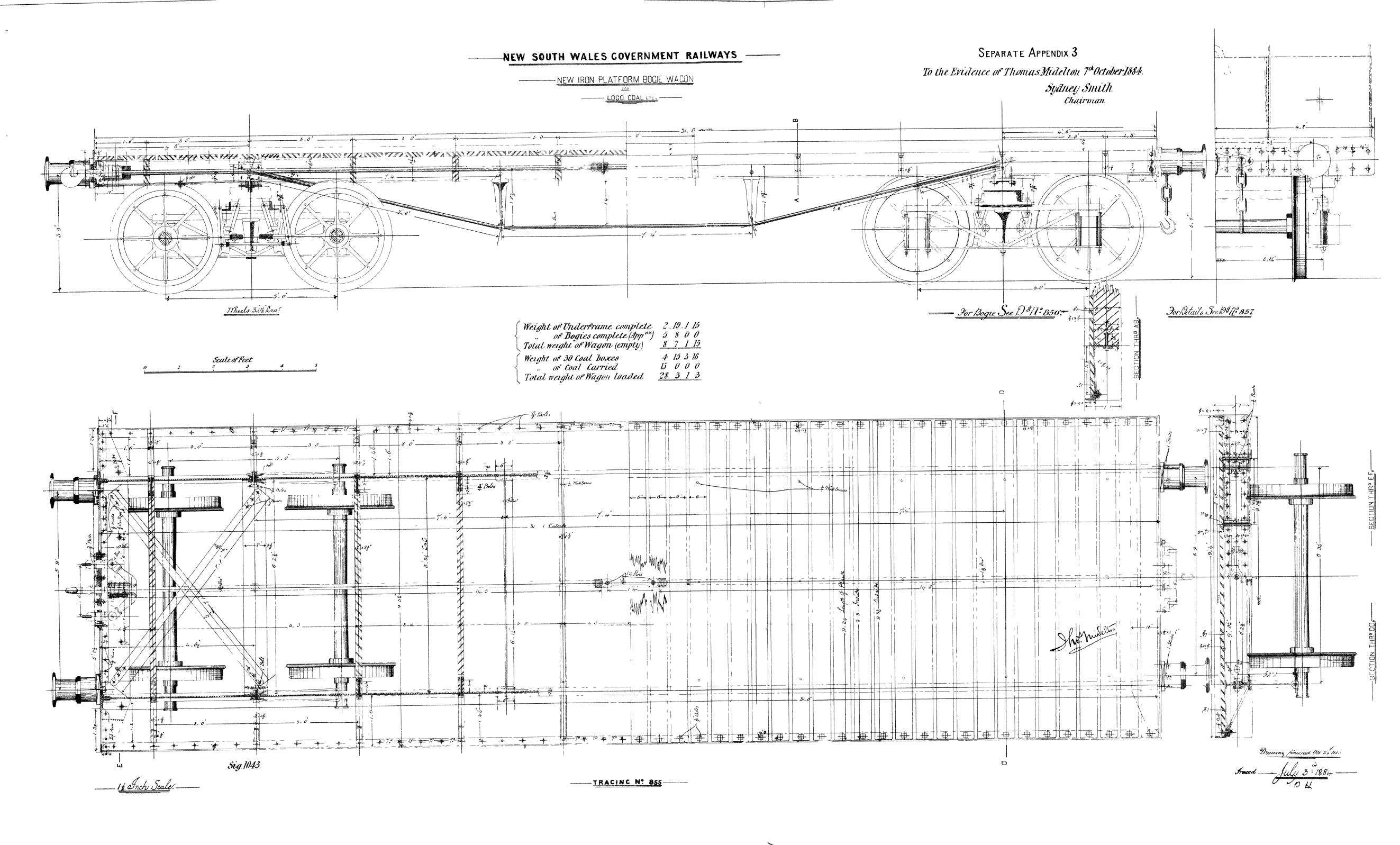
(John Fowler & Co., 43, York-street).

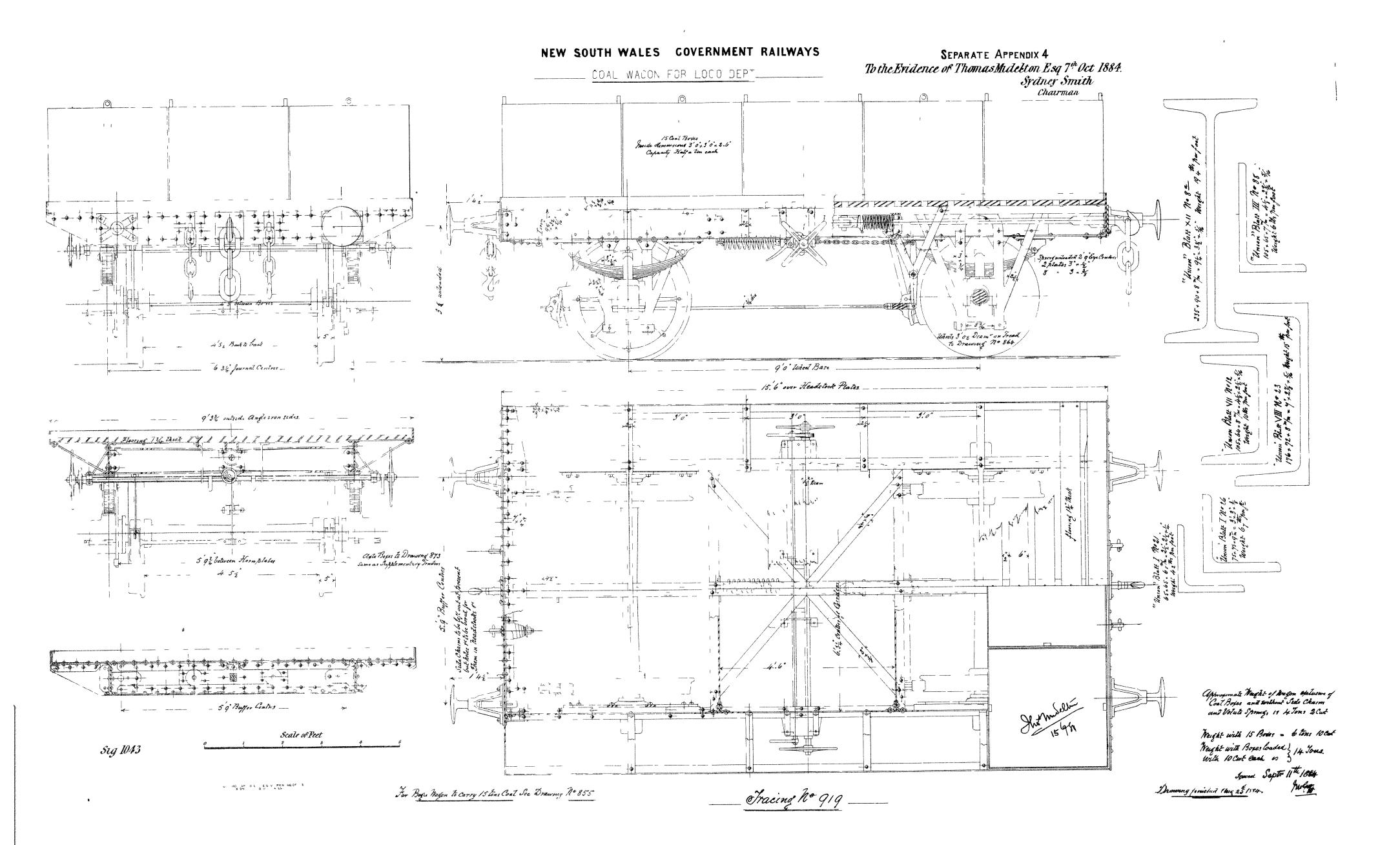
Mr. Downe to see, B.C., 11/7/84.—CH.A.G. Seen. If Mr. Greig has left a copy of the design referred to with Commissioner I shall be glad to have a sight of it.—Geo. Downe, 15/7/84. Mr. Downe, B.C., 17/7/84.—G.B. Commissioner's 84-16,794, just received by me, is, I think, what Mr. Greig refers to, but his particular design is not shown that he would recommend.—Geo. Downe, 19/7/84. Commissioner. Paper herewith, 84-4,255.

NEW SOUTH WALES GOVERNMENT RAILWAYS

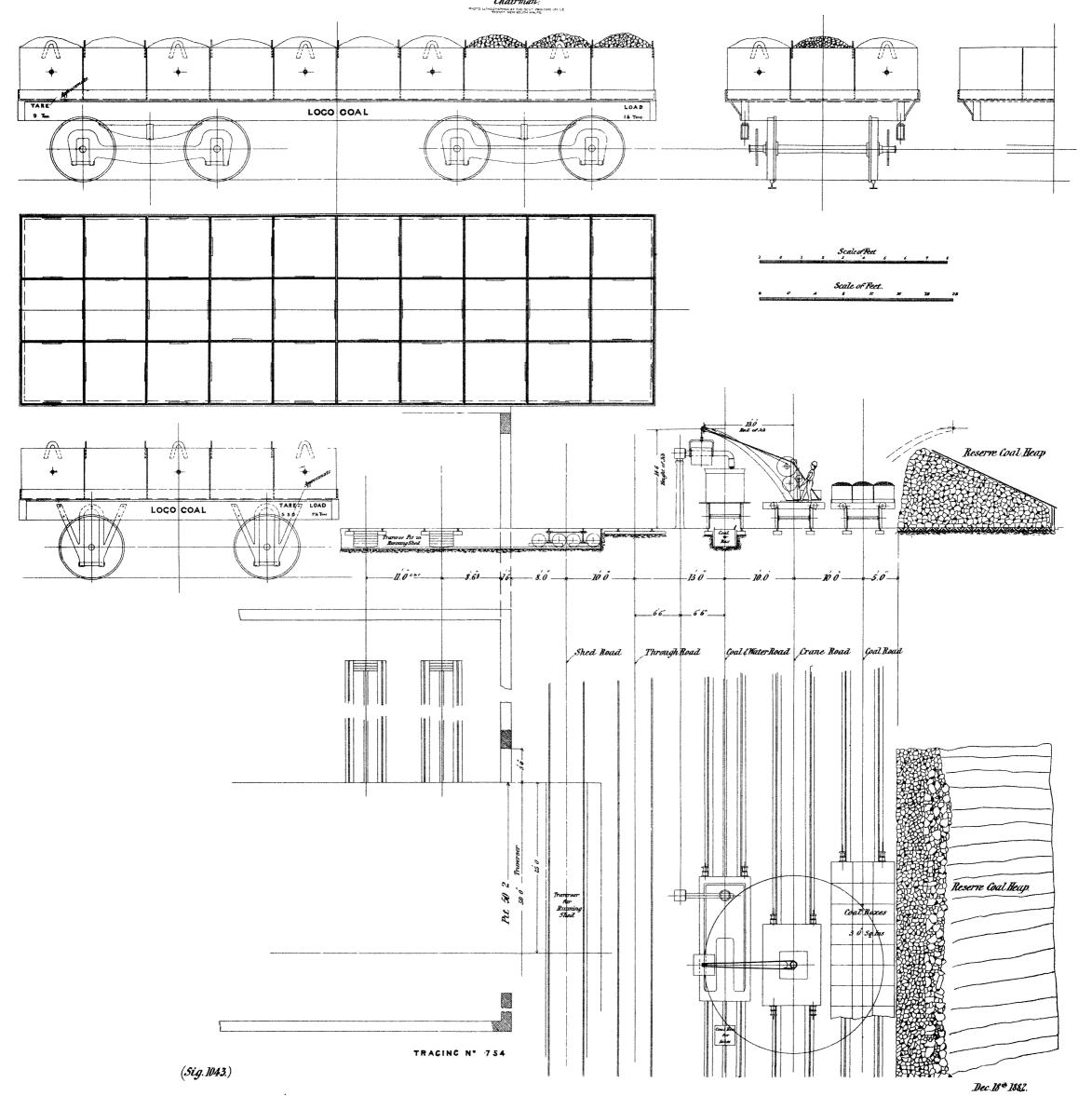




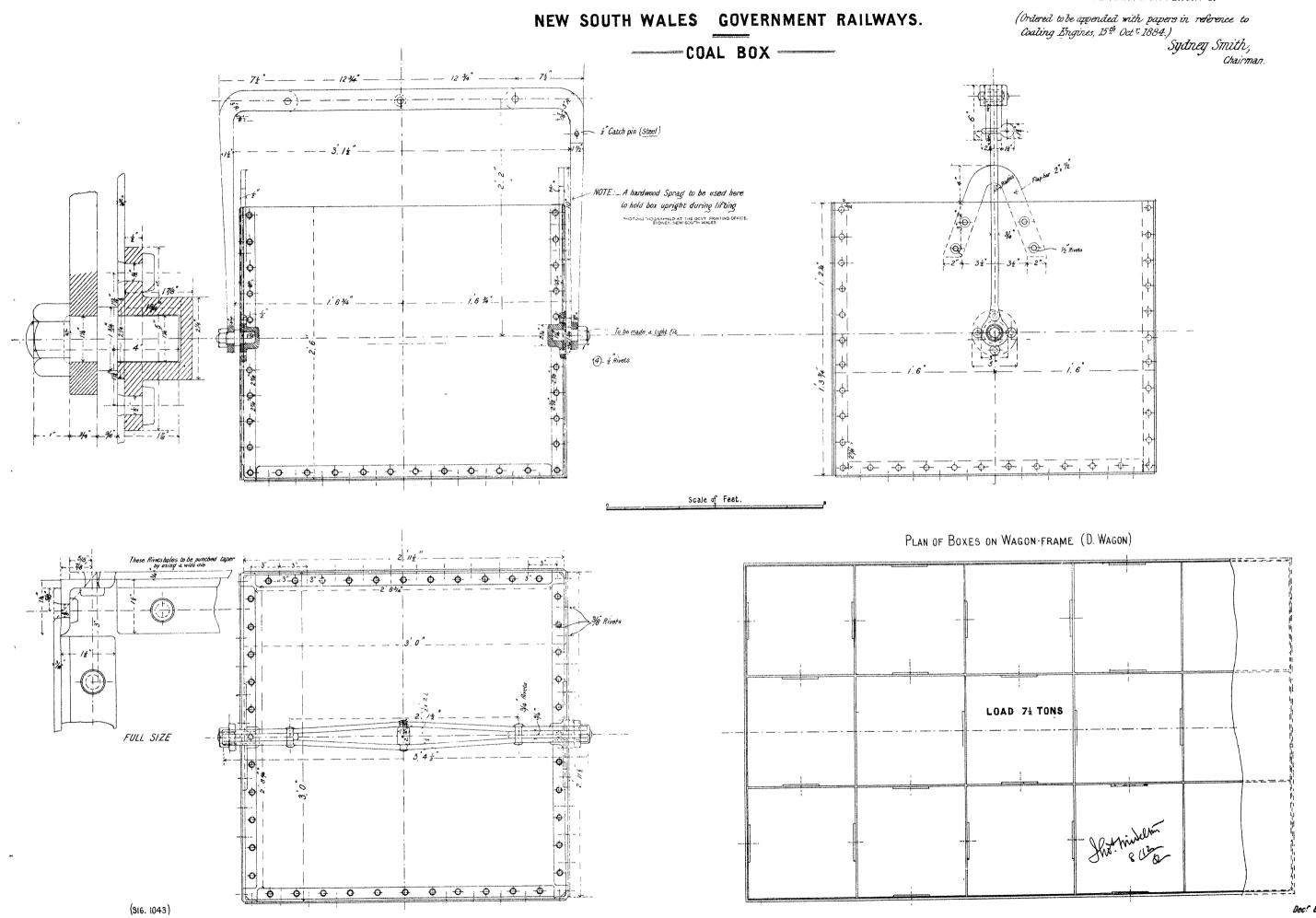




SEPARATE APPENDIX 5. Ordered to be appended with papers in reference to Coaling Engines 15th Oct 1884. Sydney Smith. Chairman:



SEPARATE APPENDIX 6.



TRACING Nº 744

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES,

PURCHASE OF RAILWAY ROLLING STOCK.

MINUTE OF SECRETARY FOR PUBLIC WORKS RESPECTING SELECT COMMITTEE THEREON.)

Ordered by the Legislative Assembly to be printed, 29 October, 1884.

MINUTE of the Honorable F. A. Wright, Secretary for Public Works, a Member of the Committee appointed to inquire into the purchase of Railway Rolling Stock.

From the best attention that I have been able to give to this tedious inquiry, I am compelled to protest both against the manner in which it has been conducted and the conclusions of the Committee.

In the first place, there seems to have been a strong prepossession in the minds of a majority of the Committee on the subject to be investigated, and consequently a strong bias displayed both in the questions asked and the evidence relied upon. Thus, while every stress is laid upon statements against the dump-cars and combined motor and car by witnesses admittedly without experience, the evidence of skilled impartial witnesses is comparatively disregarded. The balance of evidence of this kind as against mere opinion is unquestionably in favour of the cars, as not only suitable for the express purpose for which they were intended, but as combining the advantages of light tare with large carrying capacity—a valuable addition to the rolling stock of the Department.

Against this evidence, supported as it is by practical experience in other countries, there is really little or nothing but a purely theoretical opinion of subordinate officers of the Department, without special knowledge or any practical acquaintance with the new system, and naturally prejudiced in favour of the method with which they

This is pointedly the case in connection with the witness Mr. Downe, when the evidence of that officer, based upon actual experience and supported by official records, received less credence than the mere vague recollection or supposition of his own subordinates.

The fact that this witness's request to be re-examined in reply to his critics was refused by the Committee is itself a proof at least of undue haste in arriving at a conclusion. His request was perfectly just, not only because his evidence as an engineer had been directly traversed, but because some of the witnesses against him were subordinates of the Department with whose conduct in the discharge of his duties he had been called upon to deal.

On the whole, I do not believe that the full evidence available in this matter has been brought to light, or that the evidence that has been produced justifies the conclusions of the Committee. It seems to have been directed entirely to one end; I do not say the foregone conclusion, but at any rate the desired one,—the condemnation of the dump-cars and the combined motor and car.

F. A. WRIGHT. 29/10/84.

1883-4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY ROLLING STOCK.

(PETITION OF CARSON WOODS, TO BE HEARD BY COUNSEL BEFORE SELECT COMMITTEE.)

Received by the Legislative Assembly, 23 September, 1884.

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of Carson Woods, of Sydney, in the Colony of New South Wales, Esquire,—

Showeth:--

- 1. That it hath been referred to a Select Committee of your Honorable House, with power to send for persons and papers, to inquire into and report upon the Purchase of Rolling Stock, Material, &c, for the Government Railways and Tramway Works of the Colony.
- 2. That your Petitioner is desirous to appear before such Select Committee, either in person or by Counsel or Attorney, and to produce and give evidence before such Committee in reference to the premises.

Your Petitioner therefore humbly prays your Honorable House will be pleased to grant leave to your Petitioner to appear before such Select Committee, either in person or by Counsel or Attorney, and that he may be at liberty to produce and give evidence before such Committee with reference to the matters aforesaid.

And your Petitioner will ever pray.

CARSON WOODS.

Dated at Sydney, the twenty-third day of September, 1884.

1883-4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY ROLLING STOCK.

(TENDERS FOR NEXT FIVE YEARS.)

Ordered by the Legislative Assembly to be printed, 4 April, 1884.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 5th February, 1884, That there be laid upon the Table of this House, a Return showing,—

- "(1.) The names of all the tenderers for the supply of rolling stock on the
- "Government Railways for the next five years.
- "(2.) The amount of each tender.
- "(3.) Copies of Specifications and Conditions, in full, under which tenders
- " have been accepted for these works."

(Mr. Abigail.)

RAILWAY ROLLING STOCK.

ANALYSIS of Tenders received for five years supply of Rolling Stock for Great Southern and Western Railways.

AND COLOR OF THE STATE OF THE S	,	Co	ntract l	No. 6.					(Contra	ct No	. 7.	****				Contr	act No. 8			Contr	act No.	9.		Contra	act No.	10.	
Name of Tenderer.	8 sjeeping cars.	15 1st-class American cars.	7 composite car- riages.	12 1st-class car- riages.	Total.	15 2nd-class American cars.	25 2nd-class carriages.	3 mail vans.	l prison van.	2 hearses.	50 C. vans.	9 powder vans.		Total.		15 light brake-vans.	10 heavy brake-vans.	50 goods brake-vans.	Total.	26 horse-boxes.	50 sheep-wagons.	80 cattle-wagons.	Total.	14 carriage trucks.	1,000 D trucks.	25 pairs E trucks.	250 G trucks.	Total.
Hudson Brothers	£ 12,560	£ 15,675	£ 6,580	£ 12,600	£ *47,415	£ 12,075	£ 22,500	£ 1,170	£ 350	£ 640	£ 5,250	£ s. d	i. 0 4	£ s. 3,119 0	d. 0 5	£ 5,100	£ 8,500	£ 16,750	£ 30,350	£ 5,824	£ 5,600	£ 8,560	£ *19,984	.£ 1,050	£ 67,000	£ 2,825	£ 56,500	£ 127,375
Stephen Glasson						·							'	•••								`		1,050	63,000	3,000	43,750	*110,800
Robt. A. Ritchie	14,000	16,500	6,615	11,484	48,599	12,235	18,750	1,080	295	600	5,100	999 0	0 *3	9,059 0	04	1,500	7,250	15,750	*27,500	5,512	5,800	9,440	20,752	1,015	68,000	3,000	61,750	133,765
Thomas Wearne						12,750	24 ,375	1,080	317	700	5,000	1,129 10	0 4	45,351 10	0 4	1,875	10,500	17,750	33,125	5,980	5,500	9,400	20,880	1,099	68,000	3,250	71,250	143,599
D. Brodie & Co				٠			····										75 (e	£400	30,000	6,500	5,650	9,280	21,430	1,050	66,000	3,250		† ···

† Informal.

The lowest tender in each case was accepted in the first instance. Lowest tenders marked thus.*

Contract No. 7.—Mr. Ritchie's tender was accepted for this, but, having secured the whole of the contracts for the Northern line, he asked to be relieved of those he had tendered for on the Southern and Western lines; this was done, and the contract was then given to the next lowest tenderers, Messrs. Hudson Brothers.

Contract No. 8.—The tender of Mr. Ritchie was accepted for this, but he subsequently asked to be relieved of it. The next lowest tenderers, Messrs. D. Brodie & Co., however, made a mistake in filling in the prices in their offer, and fresh tenders were called for. Messrs. Hudson Brothers were then the successful tenderers, at the following prices:—

15 light brake-vans, at £335 each; 10 heavy brake-vans, at £850 each; 50 goods brake-vans, at £340 each; total amount of contract, £30,525.

ANALYSIS of Tenders received for five years supply of Rolling Stock, Great Northern Line.

	Co	ntract No. (6л.			C	ontract No	. 7A.			Contract	No. 8A.		Contra	ct No. 9a.	•	,	Cor	ntract No. 1	OA.	
Name of Tenderer.	3 1st-class carriages.	4 composite carriages.		10 2nd- class carriages.	2 mail- vans.	1 hearse.	60 C vans.	3 meat- vans.	2 powder- vans.	Total.	9 heavy brake- vans.	Total.	25 horse- boxes.	31 sheep- vans.	38 cattle- wagons.	Total	40 A wagons.	50 B wagons.	350 D wagons.	26 pairs E wagons.	Total.
Hudson Brothers	£ 3,255	3,980	£ 7,235	£ 9,250	£ 820	£ 350	£ 6,720	£ 390	£ 264	£ 17,794	£ 7,875	£ 7,875	£ 5,750	£ 3,720	£ 4,370	£ . 13,840	£ 1,340	£ 4,675	£ 24,850	£ 3,146	£ 35,011
Robt. A. Ritchie	2,871	3,320	6,191	7,500	720	300	6,120	405	222	15,267	6,525	6,525	5,300	3,596	4,484	13,380	2,640	3,850	23,800	3,120	33,410

Mr. R. A. Ritchie's tender was accepted for the whole of the above contracts.

The following is the amount of cash security to be given for the due fulfilment of the contracts:—

Mr Tr 3 D	1		02 011					60.000
Messrs. Hudson Brot	hers		• • •		• • •	•••		 £2,800
Mr. R. A. Ritchie				•••			•••	 1,500
Mr. R. Glasson	•••	• • •	•••	•••	• • •	•••	•••	 1,000

Great Southern and Western Lines.

Department of Public Works, Railway Branch, Sydney,

Supply of Railway Rolling Stock for five years, ending 31st December, 1888.

TENDERS will be received at this office until 11 o'clock on Tuesday, the , from persons willing to contract for the supply of Rolling Stock (other than locomotives) required for the Government Railways of New South Wales, for the five years ending 31st December, 1888.

Estimates of requirements for each year, and specifications and forms of tender may be seen, and further particulars obtained at the office of the Locomotive Engineer, Redfern Station, on and after

Tenders to be indorsed "Tenders for Railway Rolling Stock," and each tender must be accompanied by a Treasury deposit receipt for the sum of £200, which will be forfeited in the event of the acceptance of the tender, should the Contractors fail to provide the cash deposit and execute the agreement at the time named in the specification.

The Commissioner does not bind himself to accept the lowest or any tender.

Note.—Tenders will be received for the supplies for the South and West lines, and for the Northern line separately, and the contract will be subdivided as follows, tenders being received for each

Contract No. 6.—First-class carriages, including composite and sleeping cars.

No. 7.—Second-class carriages, mail-vans, prison-vans, hearses, powder-vans, meatvans, and covered vans.

No. 8. -Brake-vans.

-Cattle-wagons, sheep-trucks, and horse-boxes.

No. 10.—Wagons A, B, D, E, and ballast and carriage trucks

CHAS. A. GOODCHAP, Commissioner for Railways.

Specification No. 207, for a Sleeping Carriage (with Double Bogies, American type).

- 1.—Each vehicle is to be made precisely the same in all respects as the double bogic sleeping carriage No. 2, now on the Railways of the Government, and to be seen at the Redfern Station, except where herein specified to the contrary. Drawings of what is intended will be supplied as required.
- 2.—Each vehicle is to be built of thoroughly seasoned timber, free from wanes, shakes, and all other defects, and the whole of the fittings are to be supplied of the best description and quality of their respective kinds, and made, finished, and fixed in the most substantial and workmanlike manner, equal in all respects to the best class of their respective kinds of English manufacture.
 - -The following materials are to be used:

Under-frame-Pitch pine, except headstocks, which are to be of blue gum, tallow-wood, or black butt.

Window pillars—Black-wood or ash.

Corner and door pillars—Cedar (best quality).
Longitudinal rails (top and middle)—Pitch pine or Oregon.
Roof-sticks—Colonial beech.

Roof-boards (T. & G.)—Oregon pine, in narrow strips. Floor-boards (T. & G.)—Oregon pine, $1\frac{1}{4}$ in. thick.

Panels—Cedar.

Window-frames—Cedar.
Venetian blind frames—Cedar (with white cedar laths).

Mouldings-Cedar.

- 4.—The draw-gear, chains, and screw-couplings shall be made of Lowmoor or Bowling iron; and these, as well as the buffers and axle-boxes, are to be of the most recent standard type used by the Railway Department, and are to be made to the drawings or samples that shall be supplied by the Locomotive Engineer for the guidance of the Contractor.
- 5.—The following standard dimensions must be worked to, and, if necessary, modifications from the sample vehicle must be made in the under-frames to suit these dimensions, viz.

				īt.	ın.
Buffers, C. to C		 	• • •	 5	9
Do from rail to C. (empty)) .	 		 3	5
Axles, bearing, C. to C.		 		 6	$3\frac{1}{4}$
Do do diameter		 			
Do do length		 			•
Wheels (diameter on tread)		 		 3	$0\frac{1}{2}$

- 6.—The painting, varnishing, and polishing, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.
 - -The following alterations from the sample vehicle are to be made, viz.:-

The bogies to be made to drawing No. 827.

The buffer-heads to measure 22 inches from face of headstock to front face of buffer.

Lamp-irons are to be fitted on sides and ends (six in all).

Door-locks to be to pattern lock No. 150 (American pattern).
Width of body to be the same as pattern vehicle.
All axle-brasses to be nicely fitted to the journals, and the axle-boxes are to be trimmed with castor oil, to the satisfaction of the Inspector, before the vehicle will be passed. Each vehicle to be fitted with one (standard) screw-coupling to pattern or drawing.

8.—The panels are to be secured by planted mouldings, and to have canvas glued on to them previous to fixing, and when fixed they are to receive a second lining of canvas and glue, and to be then painted nside with two coats of colour in oil.

- 9.—The glass frames and Venetian blinds are to be completed in accordance with the most approved arrangement in use at the present time on the Railways,
- 10.—The upholstering, trimming, and internal fittings generally to be of similar quality, description, and method of fixing to the most recent practice of the Department for this class of vehicle.
- 11.—During the ordinary hours of labour, and at all other reasonable times, access is to be allowed to the servants of the Railway Department (or to any Contractor who may have for the time being the contract to supply gas-fittings to the vehicles) to enter the premises of the Contractor for the vehicles, for the purpose of fitting the gas apparatus, or the Westinghouse brake apparatus, to the said vehicles.
 - 12.—The threads of all bolts, studs, and nuts are to be cut to Whitworth's standard.
- 13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No.	Where delivered.					Date	of delivery.	
One One Two Two	On the rails, Do Do Do Do	Redfern Yar do do do do	d, Sydney do do do do	 	1884, in 1885, 1886, 1887, 1888,	a twelve months do do do · do	s from the date do do do do	of the order. do. do. do. do.

14.—The Department provides the following articles:—Wheels, axles, and tyres; bearing springs;

buffer, draw, and safety springs; lamps.

15.—These articles will be supplied to the Contractor at the Railway Stores, Eveleigh, and he will

have to remove them to his works at his own expense, and free of all cost to the Commissioner.

16.—The Department also provides and fixes the "Westinghouse" patent air-break apparatus, pipes and couplings, and reserves to itself the right to supply (should the Locomotive Engineer deem it advisable), all axle-boxes and buffers complete, to the Contractor at cost price, delivered at the Railway Stores, Eveleigh; the Contractor to remove them to his own works, on the same terms as for other articles

The vehicles must be finished in the most substantial and workmanlike manner, and in every respect to the entire satisfaction of the Locomotive Engineer of the Government, who shall have full power to inspect the manufacture, either personally or by deputy, at any time, in such manner as he may think fit, and to reject at any stage any work or material of which he may disapprove, as not being in accordance with the spirit and intention of this specification.

18.—Any portion of work that may be so rejected or condemned must be replaced immediately by

the Contractor, at his own expense, to the satisfaction of the said Engineer.

19.—In all cases where considered necessary by the said Engineer, full size or other detail drawings

of the vehicles must be prepared by the Contractor at his own expense.

20.—A copy on tracing cloth of each of these drawings must be forwarded by the Contractor to the Locomotive Engineer, and must be approved by him in writing before the work is commenced.

21.—These copies shall be retained, and shall be supplied by the Contractor free of charge.

22.—The Contractor will be wholly responsible for any delay that may arise in commencing or

completing the work caused by the preparation of these drawings, or for any delay that may arise in the delivery of the vehicles in consequence of the rejection of material or work by the Locomotive Engineer or his deputy, as not being in accordance with the spirit and intention of this specification; and any such delay or delays shall not relieve the Contractor from the operation of the fine clause, in the event of nondelivery of the vehicles at the time specified.

23.—It is to be understood that the approval of the drawings by the Engineer shall in no way whatsoever relieve the Contractor of the whole or any part of the responsibility, in the event of the drawings furnished by him for approval being found at any stage of the work to show an error in design or dimensions incompatible with construction or at variance with this specification (unless approval of such variation shall have been previously given in writing by the Engineer), and any loss arising therefrom shall be borne by the Contractor.

24.—Not only the general arrangement but every detail of the vehicles is to be carried out exactly as in the sample vehicle, except wherein provided for to the contrary by this specification, or shown by such detail drawings or written instructions as may be supplied by the Engineer at any time for the guidance of the Contractor. In any case when the specification, drawings, or written instructions are at variance with the sample vehicle, the specification, drawings, or written instructions are to be followed by

preference, and all figured dimensions are to be followed in preference to those obtained by scale.

25.—Should there be anything omitted to be shown in the drawings or mentioned in this specification that is obviously necessary for the proper completion of the contract, the same shall be provided by the Contractor at his own expense, and without any extra charge.

26.—Any suggestions that the Contractor to make with the object of improving the construction or working of the vehicles, or of modifying the mode of manufacture or the material specified to be used in their construction, are to be forwarded in writing to the Locemetive Engineer.

If approved to be used in their construction, are to be forwarded in writing to the Locomotive Engineer. If approved of, the authority to carry them out will be given in writing by the said Engineer, otherwise they will not be allowed.

27.—The Contractor must give notice in writing to the Locomotive Engineer before proceeding with the execution of the contract, so that the said Engineer may have the opportunity of supplying any

information or instructions that he may think necessary to fulfil the conditions of the contract.

28.—The Contractor shall not sublet the contract or any part thereof, nor allow any portion of the work to be done other than at his own establishment (except where permitted by any of the foregoing clauses of this specification), unless the express consent in writing of the Locomotive Engineer be first

-The Contractor will be responsible for a period of twelve months from the date of delivery of each vehicle for any defective work or material supplied by him, and he will be required to make good or replace the same at his own expense to the satisfaction of the Locomotive Engineer.

30.—All the movable and working parts of the vehicle made of iron or steel by the Contractor

must be distinctly marked with the Contractor's name, brand, or number.

31.—Any alterations which may be ordered by the Locomotive Engineer from time to time, as being necessary for the proper execution of the work in accordance with the spirit of this specification, shall be executed by the Contractor without extra charge.

32.—The said Engineer shall have power to supplement this specification by a more complete and detailed one, which shall be binding on the Contractor equally with this one, provided the more complete and detailed one shall not be contradictory to or at variance with the spirit and intention of this specification. Furthermore, the said Engineer shall have power to alter from time to time the disposition and number of the wheels, the length of the wheel base, and the length, breadth, depth, and details of the under-frame, as well as the general arrangement and details of the mode or system in use on the sample vehicle for giving side-play or radial motion to the wheels, and to alter the mode of framing or finishing the sides, ends, or roof, or of fitting the panels, the disposition and proportions of the compartments and of the seats, doors, and windows, as well as the disposition and form of the lamps, without in any way invalidating the contract, and without any extra payment to the Contractor, provided always that the length, breadth, or height of the body (inside), or the carrying capacity of the vehicle specified, is not increased or decreased more than 5 per cent. Any extra charge that may, in the opinion of the Locomotive Engineer, be fairly chargeable by the Contractor, in respect of these variations from the sample vehicle, or any deductions from the contract price that ought in the opinion of the said Engineer to be allowed for by the Contractor from the contract price, shall be determined by the said Engineer.

33.—Should the Commissioner consider it desirable, at any time during the currency of this contract, to substitute "teak" timber for those descriptions of native or other timber hereinbefore specified, the Contractor shall, upon due notification to that effect, proceed to employ and use "teak," as required. It shall furthermore be optional for the Commissioner—on behalf of the Government—either to supply the requisite "teak" timber for said purpose to the Contractor, or to require the Contractor to provide the same for himself; in any case the Locomotive Engineer shall finally decide and determine the necessary

alteration in price, to be either given or allowed, as circumstances may require.

34.—The decision of the Locomotive Engineer, on any point of dispute or doubt that may arise in reference to any of the foregoing clauses of this specification, shall be final and binding on the Contractor.

WILLIAM SCOTT,

Locomotive Engineer.

Department of Public Works, Railway Branch, Office of Locomotive Engineer, Sydney.

GENERAL CONDITIONS.

If at any time during the progress of the contract it shall be considered expedient by the Commissioner for Railways to increase or diminish either the length, breadth, or height of the body (inside) or the carrying capacity of any of the vehicles specified, by more than 5 (five) per cent., the Contractor, at the request of the Locomotive Engineer for the time being, shall execute such increase, diminution, or alteration, and no such increase, diminution, or alteration, shall in any way annul or set aside the contract. Such increase or alteration shall be allowed and paid for to the Contractor, or such diminution credited to the Commissioner for Railways, as the case may require, according to a price to be agreed upon between the Contractor and the said Engineer. But if the Contractor and the Engineer cannot agree as to the price to be given or allowed for in the altered vehicles, the questions in dispute shall be referred to arbitration, and shall be settled by the award, order, or determination of a disinterested civil engineer or disinterested civil engineers to be appointed to arbitrate thereon as hereinafter. That is to say, if the Commissioner for Railways and the Contractor concur in the appointment of a single arbitrator, then the matters and questions aforesaid shall be referred to and decided by such single arbitrator, but if the Commissioner for Railways and the Contractor cannot concur in the appointment of a single arbitrator, each party, on the request in writing of the other party, shall by writing under his hand nominate and appoint an arbitrator, to whom such questions and matters mentioned in this proviso shall be referred. Every such appointment shall be delivered to the arbitrator, and be deemed a submission to arbitration on the part of the party by whom the same shall have been made; and neither party shall have power to on the part of the party by whom the same shall have been made; and neither party shall have power to revoke the same without the consent in writing of the other, nor shall the death of either party operate as a revocation. And if for twenty-one days after the notice in writing by the Contractor, or by the Locomotive Engineer, that the Contractor and the Locomotive Engineer cannot agree shall have been served, and for seven days after a request in writing to appoint an arbitrator shall have been served by the one party on the other party, such last-mentioned party fail to appoint such arbitrator, then upon such failure the party making the request, and having himself appointed an arbitrator, may appoint such arbitrator to act on behalf of both parties; and the arbitrator may proceed to hear and determine the matter or question covered by this proviso between the Contractor and the Engineer aforesaid, and in

matter or question covered by this proviso between the Contractor and the Engineer aforesaid, and in such case the award or determination of such single arbitrator shall be final.

If, before the matter so referred shall be determined, any arbitrator appointed by either party shall die, or become incapable, the party by whom such arbitrator was appointed may nominate and appoint in writing some other civil engineer to act in his place; and if for the space of seven days after notice in writing from the other party for that purpose he fail to do so, the remaining or other arbitrator may proceed ex parte; and every arbitrator so to be substituted as aforesaid shall have the same powers and authorities as were vested in the former arbitrator at the time of his death or disability as aforesaid.

If more then one orbitrator shall be appointed, such arbitrators shall before they enter into the

If more than one arbitrator shall be appointed, such arbitrators shall, before they enter into the matter or question referred to them, nominate and appoint by writing under their hands an umpire to decide on any such points on which they shall differ; and if such umpire shall die or become incapable of acting, they shall forthwith after such death or incapacity appoint another umpire in his place, and the decision of every such umpire on the matters referred to him shall be final.

If in either of the cases aforesaid the said arbitrators shall refuse, or shall for seven days after request of either party neglect to appoint an umpire, the Governor for the time being of the Colony of New South Wales shall appoint an umpire, and the decision of such umpire on the matters on which the arbitrators shall differ shall be final.

If a single arbitrator shall be appointed, and he shall die or become incapable to act before he shall have made his award, the matters referred to him shall be determined by arbitration under this

clause, as if such arbitrator had not been appointed.

If more than one arbitrator shall be appointed and either of them shall refuse, or for seven days

neglect to act, the other arbitrator may proceed ex parte; and the decision of such arbitrator shall be as effectual as if he had been the single arbitrator appointed by both parties.

If more than one arbitrator shall be appointed, and neither of them shall refuse or neglect to act as aforesaid, then if such arbitrators shall fail to make their award within fourteen days after the day on which the last of make arbitrators shall have been award within fourteen days after the day on which the last of such arbitrators shall have been appointed, the matters so referred to them shall be

determined by the umpire appointed as aforesaid.

The arbitrator, or arbitrators, or their umpire, may call for the production of any documents in the possession or power of either party which he or they may think necessary for determining the questions or matters in dispute and so referred, and may examine the parties and their witnesses, and may inspect the works and view the place out of, from, or in respect of which, any of the matters referred to shall have arisen.

The award of the arbitrator or arbitrators, or umpire, shall be in writing, ready to be delivered to either party within three weeks from the appointment of such arbitrator, or the last of such arbitrators. This submission may be made a rule of the Supreme Court. The amount of cost and by whom payable shall be decided by the arbitrators, arbitrator, or umpire.

It is to be distinctly understood and arread by the arbitrators of the control of the contro

It is to be distinctly understood and agreed by and between the Commissioner for Railways and the Contractor, that the appeal or arbitration from the certificate or decision of the Locomotive Engineer shall be limited only to such of the matters in the above proviso mentioned as subjects for the arbitration of civil engineers as shall be set forth in the notice in writing given as hereinbefore provided by the party requiring such arbitration; and that nothing in this clause contained shall extend to or affect or be construed to extend to or affect any decision, determination, or certificate of the Locomotive Engineer, or any other matters or questions than those in respect of which an appeal shall lie under the proviso above contained.

The Contractor shall forfeit and pay to the Commissioner (by way of liquidated damages to be deducted from the moneys due to the Contractor) the sum of one per cent on the contract price of each vehicle for each week that each vehicle shall remain undelivered after the respective dates named in this

The Contractor shall deposit in some Bank in Sydney, to the credit of the Commissioner for Railways, the sum of £1,000 (one thousand pounds) as security for the due performance of his contract.

Should the Contractor fail to deposit as aforesaid the required amount as security within seven days of the date of the notification of his tender being accepted, the Commissioner will have the option

and full power and authority to declare such acceptance to be annulled.

Should the rate of progress made with the work be such as to prevent, in the opinion of the Engineer, the vehicles being delivered by the time specified, the Commissioner shall have full power and authority, after due notice given to the Contractor, to cancel the contract forthwith, upon which the amount deposited by the Contractor as security for the due performance of same, as well as all moneys due to the Contractor under the Contract for such vehicles as shall remain to be delivered shall be forfeited to the Commissioner.

If the Contractor become insolvent, have his estate placed under sequestration, or shall make an assignment of his estate for the benefit of his creditors, it shall be lawful for the Commissioner for Railways, without previous notice to the Contractor, or to the Official or other Assignees or Assignees of his insolvent estate, or to the Trustee or Trustees under the assignment, to take such of and all portions of the rolling stock, whether completed or not, from the Contractor or the Assignees or Trustees of his estate, and re-contract with any other person or persons to proceed with and complete the said rolling stock, upon such terms, stipulations, and conditions as shall be deemed expedient.

Payments will be made in full for each vehicle in one month after the date of delivery of the same, on certificate of the Locomotive Engineer that the vehicle is complete in every respect and finished in

accordance with the specification.

And it is hereby expressly declared that the giving of a certificate by the Locomotive Engineer for the time being, that the work done by the Contractor has been satisfactorily executed and completed in accordance with the specification, shall be a condition precedent to the Contractor having any right of action or claim to the payment to be made under this specification.

Department of Public Works Railway Branch, Sydney.

CHAS. A. GOODCHAP, Commissioner for Railways.

Painting, Polishing, Varnishing, Upholstering, and Trimming for Passenger and Goods Vehicles, under the five years Contracts, ending 31 December, 1888.

Passenger Carriages.

Sleeping Cars-First-class, Composite, Second-class Carriages, Composite Break-vans, Hearses, and Passenger-carrying Vehicles generally, to be treated as follows:-

Body, Outside.

THE outside of each body is to be primed with three coats of lead colour in oil, and then to be stopped up with hard stopper (composed of dry white lead and gold-size); then to have four coats of filling up (composed of patent filling white lead, gold-size, and turpentine); then a fifth coat of filling up, with a little red for staining; then to be well rubbed down with hard pumice stone; then one coat of glaze colour, two coats of pattern colour (the colour to be decided by the Department); then one coat of glaze (composed

(composed of varnish and pattern colour); and finally to be flattened down where picked out, and initialled according to instructions; the rest then to be flattened down, and to receive one coat of varnish; then again to be flattened down, and to receive the final coat of varnish.

Body, Inside.

The inside of each first-class compartment, and of sleeping cars generally, is to have all mouldings and panels (where visible) French-polished, and protected with one coat of varnish.

Second-class Compartments and Interior of Luggage Compartments and Goods Break-vans, Prison-vans, and Hearses are to be treated inside as follows:—

To be primed with two coats of drab colour in oil; then one coat of ground do., and to be grained (where visible) in imitation of oak, and finished with two coats of varnish. Any cedar mouldings not painted, are to be French-polished and varnished.

Floors.

The floors of all Passenger-carrying Vehicles, including Hearses, Compo., and Luggage Break-vans are to be treated as follows:

Floor-boards to be all well painted with lead colour in oil, before being put together, and on the upper face to receive a second coat of lead colour, and a finishing coat of black.

Note.—The number of each carriage to be painted on the inside of each compartment, as may be directed.

Roofs.

The roofs of all Passenger-carrying Vehicles, including Hearses, Compo., and Luggage Break-vans, are to be treated as follows:-

The roof-boards to receive two coats of colour in oil, and when dry to receive another thick coat (the canvas being applied while the paint is wet); then two coats of white lead in oil, and one finishing coat of white mixed with varnish.

Note.—Both outer and inner roofs to have canvas covering if required.

Under-frames.

The under-frames to be treated as follows:

To be primed with two coats of oil colour all over (inside and outside), the outer faces to be then stopped up, face down, and painted with two coats of pattern colour in oil, and finally picked out, and finished with two coats of varnish.

Ironwork.

The ironwork of all the before-mentioned vehicles is to be treated as follows:-To be scraped clean and free from rust, and then to receive one coat of lead colour in oil, and one finishing coat of black mixed with varnish.

Upholstering and Trimming.

The quality and description of upholstering—be the same in cloth, leather, or stool-carpet—and the trimming (including carpets, mats, &c, &c.) in passenger-carrying vehicles is to be in accordance with samples to be seen at the Locomotive Engineer's Office, Redfern; and the method of fixing and finishing the same is to be according to the most recent practice of the Department, unless otherwise ordered by the Locomotive Engineer.

Goods Break-vans, Horse-boxes, Carriage Trucks, and Prison-vans, to be treated as follows:—

Bodies, Outside.

The outside is to be primed with two coats of lead colour in oil, then to be stopped up and faced down, and to have two coats of pattern colour, and then to be picked out and initialled, and finished with two coats of varnish.

Bodies, Inside.

The inside is to be primed with two coats of stone colour in oil, then to have one coat of ground . colour, and to be grained in imitation of oak, and finished with one coat of varnish.

Floors

The floor-boards are to be all well painted with lead colour in oil, before being put together, and on the upper face to receive a second coat of lead colour, and a finishing coat of black.

Roofs.

The roof-boards are to be primed with two coats of colour in oil, and when dry to receive another thick coat, the canvas being applied while the paint is wet, then two coats of white lead in oil, and one finishing coat of white mixed with varnish.

Under-frames.

The under-frame is to be primed with two coats of lead colour all over (inside and outside); the outer faces to be then stopped up, faced down, and painted with two coats of pattern colour, and finally picked out and finished with two coats of varnish.

Ironwork.

The ironwork is to be scraped clean and free from rust, and then to receive one coat of lead colour in oil, and one finishing coat of black mixed with varnish.

ORDINARY GOODS STOCK.

Ordinary Goods Stock—including Meat, Cattle, Sheep, and Powder Vans, and also A, B, C, D, E, F, G, Wagons and Trucks—are to be treated as follows:—

Bodies, Outside.

To be primed with one coat of lead colour in oil, and to be finished with two coats of pattern colour in oil.

Bodies, Inside.

To be primed with one coat of lead colour in oil, and finished with one coat of pattern colour in oil. Ironwork.

To be scraped clean, and then to receive one coat of black colour in oil.

E.—In every case there must be one clear day between each coat of paint. One coat of filling up may be applied daily; but the work must then stand three clear days before being incled down, and two days must be allowed between each coat of varnish.

GENERAL

GENERAL CONDITION.

This Painting Specification shall be considered as an integral portion of each and every one of the specifications for the various classes of passenger and goods rolling stock under the five years' contracts, ending December 31, 1888, in so far as it may reasonably apply to the same individually, and the whole of the general conditions embodied in said specifications shall apply with equal force to the present specification.

W. SCOTT, specification.

Locomotive Engineer.

The Terms and Conditions of each of the Contracts for the five years supply of Rolling Stock are the same as those mentioned in Specification No. 207, with the following exceptions:-

Southern and Western Railway.

Specification No. 213, for a Mail-van (4 wheels).

-Each vehicle is to be made precisely the same in all respects as mail-van No. 6.

3.—The following materials are to be used:—
Underframe—blue gum, tallow-wood, or black butt.

Body bottom, side and end frames—pitch pine or Baltic.

Intermediate frame bars—blue gum, tallow-wood, or black butt. Side frames, pillars, &c.—cedar, best quality.

Eud frames—b Panels—cedar. -blue gum, tallow-wood, or black butt.

Top side rails—pitch pine or Oregon. Roof sticks—colonial beech.

Window frames—cedar.

Venetian blind frames—cedar, with laths of white cedar. Roof lining and flooring boards—Oregon pine.

Sides and ends of body to be made flat without any turn under. Flooring boards to be $1\frac{1}{4}''$ thick, and run transversely or longitudinally as required.

-The following standard dimensions must be worked to, and if necessary, modifications from the sample vehicle must be made in the underframes to suit these dimensions, viz. :-

			IU.	m.	
Buffers, C. to C	 	•••	 5	9	
Do, from rail to C. (empty)	 		 3	5	
Axles, bearing C. to C			6	$4\frac{3}{4}$	
Do do diameter	 				
f Do do length		• • •	 •		
Wheels (diameter on tread)			3	$6\frac{1}{2}$	

The following alterations from the sample vehicle are to be made, viz.:

Width of body to be same as pattern vehicle. The brake gear to be as shown in drawing to be supplied

Cast iron brake blocks to be used, and so hung as to gear with the Westinghouse continuous brake apparatus.

The Contractor must fix the axle brasses and trim the boxes in accordance with the Inspector's

views: they are to be passed by him before the vehicle is sent out on the rails.

Wheatley's patent locks to be fixed to doors. Each vehicle to be fitted with one standard screw coupling to pattern or drawing.

Main draw-bar to be continuous, as per drawing to be supplied or pattern gear to be supplied. Buffers to stand out 22" from face of headstock.

Lamp irons (six in all) to be fixed as directed by the Inspector. Side pillars to be made to patterns which will be supplied.

Panels to run vertically from fence rail as required.

1/4-in. plate glass to be used for windows.

(Condition No. 10 excised.)

The number of vehicles required under this specification, and the place and time of delivery ofthe same, to be as follows:-

No.	 Where delivered.				Date	of delivery.	,	:
One One	 On rails, Ro Do Do	edfern Yard, Syd do do	lney 		1884, in 12 months 1 1885, in 6 months 1886, in 6 months	From date do do	of orde do do	er.

Southern and Western Railway.

Specification No. 214, for a Prison-van.

-Each vehicle is to be made precisely the same in all respects as prison van No. 3.

The following materials are to be used:— Underframe—blue gum, tallow-wood, or black butt. Body, bottom frame

side and end frames

Body

Body side and end boards-Oregon pine (tongued and grooved).

roof sticks-colonial beech.

window frames—cedar (best quality). doors-

do. 5.—The following standard dimensions must be worked to, and if necessary, modifications from the sample vehicle must be made in the underframes to suit these dimensions, viz.:-

					ft.	in.	
Buffers, C. to C	• • •	•••		•••	5	9	
Do. from rail to C. (empty)		•••					
Arlog bearing C to C						_	
Axles, bearing C. to C	•••	• • • •	• • •		b	44	
Do. do. diameter	• • • •	• • •			•		
Do. do. length							

·Wheels (diameter on tread) -The painting and varnishing, inside and out, shall be carried out as directed by the Engineer, in

the most approved and complete manner.

7.—The following alterations from the sample vehicle are to be made, viz.:—

The main draw-bar to be 1\frac{3}{4} in. diameter and continuous, and this as well as the brake gear to be in accordance otherwise with that existing on sheep-van No. 220.

Lamp irons (six in all) to be fixed as directed by the Inspector. One standard screw coupling to be supplied with each vehicle.

4-in. plate glass to be used for windows.

(Conditions Nos. 4 and 10 excised.)

11.—During the ordinary hours of labour, and at all other reasonable times, access is to be allowed to the servants of the Railway Department, to enter the premises of the Contractor for the vehicles, for the purpose of fitting the Westinghouse through connections to the said vehicles.

13.—The number of vehicles required under this specification, and the place and time of delivery

of the same, to be as follows:-

No.		Where delivered.	Date of delivery.
One	•••	On the rails, Redfern Yard, Sydney	1884, in 6 months from the date of the order.

Southern and Western Railway.

Specification No. 215, for a Hearse.

-Each vehicle is to be made precisely the same in all respects as hearse No. 4.

3.—The following materials are to be used:

Underframe—blue gum, tallow-wood or black butt.
Body—bottom frame, do. do.

side and end frames, cedar (best quality).

panels and doors, cedar. ,,

roofs, Oregon pine (tongued and grooved). top side rails, pitch pine or Oregon.

5.—The following standard dimensions must be worked to, and if necessary, modifications from the sample vehicle must be made in the underframes to suit these dimensions, viz.:-

					TO.	111.
Buffers, C. to (•••	5	9
Do. from a	rail to C. (empty)			3	5
Axles, bearing,	, C. to C. `		 	٠		
Do. do.	diameter		 			•
Do. do.	length	•	 	•••		•
70711 / 11		1)				0.1

Wheels (diameter on tread) \dots 6.—The painting and varnishing, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.

The following alterations from the sample vehicle are to be made, viz.:—

The main drawbar to be $1\frac{3}{4}$ diameter and continuous.

No brake gear required.

Double roofs must be fixed in accordance with the most recent practice of the Department. (Conditions Nos. 9, 10, and 11 excised).

13. The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

	No.	Where delivered.	Date of delivery.	
One One	•••	On the rails in Redfern yard, Sydney Do.		1884—in 9 months from the date of the order. 1885— do. do.

Southern and Western Railway.

Specification No. 216, for a Horse-box.

1.—Each vehicle is to be made precisely the same in all respects as horse-box No. 54.

3.—The following materials are to be used :—
Underframe—blue gum, tallow-wood, or black butt.

Body bottom framedo Side and end framesdo

End

585—B

End and side panels and flaps—Oregon pine (tongued and grooved).

Roof and flooring boards-

Doors (framing)—cedar.

Internal fittings—Oregon pine (tongued and grooved).

-The following standard dimensions must be worked to, and if necessary, modifications from the sample vehicle must be mady in the underframes to suit these dimensions, viz.:-

Buffers, C. to C. Do. from rail to C. (empty)... 5 9 6 xles, bearing C. to C. ... do. diameter ... "do. length Do.

 $3 \cdot 6\frac{1}{2}$ Wheels (diameter on tread) -The painting and varnishing, inside and out, shall be carried out as directed by the Engineer, in

the most approved and complete manner.

7.—The following alterations from the sample vehicle are to be made:—

The main draw-bar to be 13" diameter, and continuous, and this as well as the brake gear to be in accordance otherwise with that existing on sheep-van No. 220.

The internal fittings generally to be of similar description and quality to those of the sample vehicle.

One standard screw coupling to be supplied with each vehicle.

Westinghouse connections provided by the Department.

(Conditions Nos. 8 and 9 excised.) 11.—During the ordinary hours of labour, and at all other reasonable times, access is to be allowed to the servants of the Railway Department to enter the premises of the Contractor for the vehicles, for the purpose of fitting the through connection for the Westinghouse brake apparatus to the said vehicles.

-The number of vehicles required under this specification, and the place and time of the delivery

of the same, to be as follows:-

No.	· w	here delivered.		Date of	delivery.
Four Five Five Five Seven	Do. Do. - Do.	Redfern yard, Sydney do. do. do. do.	 1884—in 1885—in 1886— 1887— 1888—	12 months fro 6 months fro do do do	om date of the order. m the date of the order. do. do. do.

Southern and Western Railway.

Specification No. 217, for a Carriage Truck.

-Each vehicle is to be made precisely the same in all respects as carriage truck No. 35.

-The following materials are to be used:

Under-frame—blue gum, tallow-wood, or black butt.

do. do. Body framedo. Bottom flooring-- do. do. do.

-The following standard dimensions must be worked to, and if necessary, modifications from the sample vehicle must be made in the underframes to suit these dimensions, viz.: in.

9 Buffers, C. to C.. from rail to C. (empty). Do. 3 5 Axles, bearing, C. to C. ... 6 \mathbf{D}_{0} . diameter

The following alterations from the sample vehicle are to be made, viz.:—
The main draw-bar to be 13" diameter and continuous, and this as well as the brake gear to be in accordance otherwise with that existing on sheep van No. 220.

One standard screw coupling to be supplied with each vehicle.

(Conditions 8, 9, and 10 excised.) 11.—During the ordinary hours of labour, and at all other reasonable times, access is to be allowed to the servants of the Railway Department to enter the premises of the Contractor for the vehicles, for the purpose of fitting the through connections for the Westinghouse brake apparatus to the said vehicles.

13.—The number of vehicles required under this specification, and the place and time of delivery of

the same, to be as follows:

1	Νo.	Where delivered.	Date of delivery.		
Two Two Three Three Four		 On the rails, Redfern Yard, Sydney Do. Do. Do. Do. Do.		1884—in 8 months from date of the order 1885— do do. 1886—in 6 months from date of the order 1887— do do. 1888— do do.	

Southern and Western Railway.

Specification No. 218, for a Goods Brake Van.

-Each vehicle is to be made precisely the same in all respects as goods brake van No. 100.

3.—The following materials are to be used:

Under-frame—blue gum, tallow-wood, or black butt.

(3½" thick) Body bottom frame--do. do. do

Do. side and end frames-blue gum, tallow-wood, or black butt.

Do. panels—Oregon pine (tongued and grooved).

Do. roof and partition boards—Oregon pine (tongued and grooved).

Do. roof sticks—colonial beech.

Window and door frames—cedar. 6.—The painting and varnishing, inside and out, shall be carried out as directed by the Engineer, in

the most approved and complete manner.

7.—The following alterations from the sample vehicle are to be made, viz.:—

The main draw-bar to be 1\frac{3}{4}" diameter, and continuous; cast iron brake blocks to be provided similar to most recent standard type in use by the Department.

Lamp irons (six in all) to be fixed as directed by the Inspector. One standard screw coupling to be supplied with each vehicle.

(Conditions Nos. 8, 10, and 11 excised.)

9.—The glass frames are to be completed in accordance with the most approved arrangement in use at the present time on the Railways, and plate glass ¼" thick to be used.

13.—The number of vehicles required under this specification, and the place and time of delivery

of the same, to be as follows:-

No.		Where delive	here delivered.			.]	Date of deliv	ery.	
Eight Ten Ten Ten Twelve	 On rails, Re Do. Do. Do. Do.	edfern Yaro do. do. do. do.	l, Sydney do. do. do. do.		1884—in 1885— 1886—in 1887— 1888—	do.			do.

Southern and Western Railway.

Specification No. 219, for a Cattle-wagon.

1.—Each vehicle is to be made precisely the Sallio III and III and III are to be used:—
3.—The following materials are to be used:—
Under-frame—blue gum, tallow-wood or black butt.
Body framing (complete)—blue gum, tallow-wood, or black butt.
Panels and roof boards—Oregon.

Poof sticks—colonial beech. -Each vehicle is to be made precisely the same in all respects as cattle-wagon No. 217.

Flooring boards—Kauri.

6.—The painting, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.

—The following alterations from the sample vehicle are to be made, viz.:—

The main draw-bar to be 1\frac{3}{4}" diameter, continuous, and this as well as the brake-gear to be in accordance otherwise with that existing in sheep-van No. 220.

One standard screw coupling to be supplied with each vehicle.

(Conditions Nos. 8, 9, and 11 excised.)

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No.	Where delivered.	Date of delivery.
Thirty Fifty	On the rails, Redfern yard, Sydney Do. do. do.	1884—in 12 months from date of the order do. do. do.

Southern and Western Railway.

Specification No. 220, for a Sheep-van.

1.—Each vehicle is to be made precisely the same in all respects as sheep-van No. 220.

The following materials are to be used:—
Under-frame—blue gum, tallow-wood, or black butt.

Body bottom-frame—do.

do.

Side and end frames—do. do.

Roofs and end boards—Oregon pine (tongued and grooved).

Upper floor—blue gum, tallow-wood, or black butt.

Bottom floor—do. do. .

Roof sticks-colonial beech.

6.—The painting, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.

—The following alterations from the sample vehicle are to be made, viz.:—
The main draw-bar to be $1\frac{3}{4}$ diameter and continuous, and this as well as the brake-gear to be in accordance otherwise with that existing on sheep-yan No. 220.

One standard screw coupling to be supplied with each vehicle. (Conditions Nos. 8, 9, 10, and 11 excised.)

13. The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No.		Where delivered.	Date of delivery.	
Twenty Thirty	•••	On the rails, Redfern yard, Sydney Do. do. do.	•••	1884—in 12 months from date of the order. 1885—in 9 months from date of the order.

Southern and Western Railway.

Specification No. 221, for a Powder-van.

1.—Each vehicle is to be made precisely the same in all respects as powder-van No. 10.
3.—The following materials are to be used:—

Under-frame—blue gum, tallow-wood, or black butt.

do

Body framing— do Roof sticks—colonial beech.

Roofing and lining boards—Oregon pine (tongued and grooved). Flooring-boards—Kauri (tongued and grooved).

Floor to be covered with sheet-lead not less than "16" thick; all inside boards to be fastened with brass screws and copper nails, and heads of iron bolts or nuts to be covered with brass cups.

6.—The painting, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.

-The following alterations from the sample vehicle are to be made, viz.:—

Outside boards to be fixed vertically

The diagonal struts in sides and ends to be fitted as directed by the Inspector.

To have double roof same as "C" van, and the height of roof to be the same as on sample "C" van.

The main draw-bar to be $1\frac{3}{4}$ diameter and continuous, and this, as well as the brake gear, to be in accordance otherwise with that existing on sheep-van No. 220.

(Conditions Nos. 8, 9, 10, and 11 excised.)

-The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:

No. Where delivered.			ered.	Date of delivery.				
One One Two Two, Three	•••	On the rails, Do Do Do Do	Redfern ya do do do do	ord, Sydney do do do do	 1884—in 6 1885— 1886— 1887— 1888—	3 months from do do do do	the date of the or do. do. do. do.	rder.

Southern and Western Railway.

Specification No. 225, for a Covered Goods-van "C."

-Each vehicle is to be made precisely the same in all respects as "C" van No. 192.

-The following materials are to be used:

Under-frame—blue gum, tallow-wood, or black butt. Body framing— do. do. do.

Body framing-Panels and roof boards—Oregon pine.

Flooring-boards-Kauri.

-The painting, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.

7.—The following alterations from the sample vehicle are to be made, viz.:Outside boards to be fixed vertically.

Diagonal struts to be fitted on sides and ends, as directed by the Inspector. The main draw-bar to be $1\frac{3}{4}$ diameter and continuous, and this, as well as the brake gear, to be in accordance otherwise with that existing on sheep-van No. 220.

(Conditions Nos. 8, 9, 10, and 11 excised.)

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:

No.	V	Vhere delive	red.		Date of	delivery.		
Eight Ten Ten Ten Twelve	 On the rails in Do Do Do Do	Redfern y do do do do do do	vard, Sydney do do do - do	•••	1884—in 10 1885— 1886— 1887— 1888—	months fro do do do do	d d	e of the order lo. lo. lo.

Southern

Southern and Western Railway.

Specification No. 226, for a Medium Sided Wagon "D."

1.—Each vehicle is to be made precisely the same in all respects as "D" wagon No. 3,421.

The following materials are to be used:—-Under-frame—blue gum, tallow-wood, or black butt.

Body sides and ends—Kauri pine.

End stanchions—blue gum, tallow-wood, or black butt.

Floor boardsdo.

6. The painting, inside and out, shall be carried out as directed by the Engineer, in the mos approved and complete manner.
7.—The following alterations from the sample vehicle are to be made, viz.:—

do.

The main draw-bar to be 13" diameter and continuous, and this as well as the brake gear to be in accordance otherwise with that existing on sheep-van No. 220.

(Conditions Nos. 8, 9, 10, and 11 excised.)

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No.		Date of delivery.						
150 200 200 200 250	 On the rails, I Do. Do. Do.	Redfern yan do. do. do. do.	rd, Sydney do. do. do. do.	•••	1884—in 1885— 1886—in 1887— 1888—	do.	from date do. do. do. do.	of the order do. do. do. do.

Southern and Western Railway.

Specification No. 227, for a pair of Timber Trucks (E).

1.--Each pair of vehicles is to be made precisely the same in all respects as pair of "E" trucks Nos. 189 and 190.

3.—The following materials are to be used:--

Under-frame—blue gum, tallow-wood, or black butt.

Bolsters-Flooring

do. do.

do. do. do. do.

6.—The painting, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.

7.—The following alterations from the sample vehicle are to be made, viz.:-

The general arrangement of brake gear and the main draw-bar to be in accordance with that existing on sheep-van No. 220. Main draw-bar to be 13" diameter.

(Conditions Nos. 8, 9, 10, and 11 excised.)

13 .- The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No.	,	Where delivered.					Date of delivery.				
Four pairs Five do Five do Six do	On the rails, In Do. Do. Do. Do. Do. Do.	Redfern ya do. do. do. do.	rd, Sydney do. do. do. do.	•••	1884—in 12 n 1885—in 6 1886— do. 1887— do. 1888—i do.	nonths fro do. do. do. do.	m the date do. do. do. do.	e of the order do. do. do. do.			

Southern and Western Railway.

Specification No. 232, for a G. Wagon (on Bogies).

1.—Each vehicle is to be made precisely the same in all respects as G. wagon No. 7. 3.—The following materials are to be used:—

Under-frame—blue gum, tallow-wood, or black butt.

Sides and ends (boarding)—Kauri pine.

Stanchions and pillars—blue gum, or tallow-wood.

Flooring boards—do.

The scantlings or sizes of the various parts of the timber and iron work are to be altered and modified as directed by the Loco. Engineer.

6.- The painting, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.

—The following alterations from the sample vehicle are to be made, viz. :—
The brake-gear and main continuous draw-bar to be in accordance with that on the sample vehicle; main draw-bar to be 13 inch diameter.

The bogies are to be made according to plans to be supplied by the Locomotive Engineer. (Conditions

(Conditions Nos. 8, 9, 10, and 11 excised.) 13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:

No.		When del	ivered.		Date of	f delivery.	
Forty Fifty Fifty Fifty Sixty	On the rails, Do Do Do Do	Redfern do do do do do	Yard, Sydney do do do do	 1884—in tw 1885— 1886— 1887— 1888—	velve months do do do do	s from date do do do do	of the order. do. do. do. do.

Southern and Western Railway.

Specification No. 242, for a First-class Double-bogie American Carriage, with end entrances, &c.

1.—Each vehicle is to be made precisely the same in all respects as first-class double bogic carriage No. 68.

-The following materials are to be used:-

Under-frame-pitch pine, except headstocks, which are to be of blue gum, tallow-wood, or black butt.

Window pillars—blackwood or ash.

Corner and door pillars—cedar, best quality.

Longitudinal rails (top and middle)—pitch pine or Oregon.

Roof sticks—colonial beech.

Roof boards (T. & G.)—Oregon pine, in narrow strips. Floor-boards (T. & G.)—Oregon pine, 1\frac{1}{4} inch thick.

Panels—cedar.

Window frames -cedar.

Venetian blind frames—cedar (with white cedar laths).

Mouldings-cedar.

The following alterations from the sample vehicle are to be made, viz.:-

The compensating beam in buffer-rods of sample vehicle will be dispensed with, rubbers or volutes to be substituted, and the same to be supplied by the Department.

The bogies to be made to drawing No. 827.

The buffer-heads to measure 22 inches from face of headstock to front face of buffer.

Lamp-irons are to be fitted on sides and ends (six in all).

Door-locks to be to pattern lock No. 150 (American pattern).

Width of body to be same as pattern vehicle.

All axle-brasses to be nicely fitted to the journals, and the axle-boxes are to be trimmed with castor oil, to the satisfaction of the Inspector, before the vehicle will be passed.

Each vehicle to be fitted with one (standard) screw coupling to pattern or drawing.

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows :-

No.		Where delivere	d. '		Date	of delivery.	
Two Three Three Three Four	On the rails, Do Do Do Do	Redfern Yard, do do do do	Sydney do do do . do	 1884—in tv 1885— 1886— 1887— 1888—	velve month do do do do	ns from the do do do do	date of order. do. do. do. do.

Southern and Western Railway.

Specification No. 243, for a Second-class Double-bogie American Carriage, with end entrances.

- 1.—Each vehicle is to be made precisely the same in all respects as double-bogie carriage No. 123.
- 3.—The following materials are to used :-

Under-frame-pitch pine, except headstocks, which are to be of blue gum, tallow-wood, or black butt.

Window pillars—black-wood or ash.

Corner and door pillars—cedar (best quality).
Longitudinal rails (top and middle)—pitch pine or Oregon.

Roof-sticks—colonial beech.
Roof-boards (T. & G.)—Oregon, in narrow strips.
Floor-boards (T. & G.)—Oregon, 1\frac{1}{4} in. thick.

Panels—cedar.

Window-frames—cedar.

Venetian blind frames—cedar (with white cedar laths).

Mouldings--cedar. 7.—The following alterations from the sample vehicle are to be made, viz.:-

The compensating beam on buffer-rods of sample vehicle will be dispensed with; rubbers or volutes will be substituted, and the same to be supplied by the Department.

The bogies are to be made to drawing No. 827.

The buffer-heads to measure 22 inches from face of headstock to front face of buffer.

Lamp-irons are to be fitted on sides and ends (six in all).

Door locks to be to pattern No. 150 (American pattern).

Width of body to be the same as pattern vehicle

All axle-brasses to be nicely fitted to the journals, and the axle-boxes are to be trimmed with castor oil, to the satisfaction of the Inspector, before the vehicle will be passed. Each vehicle to be fitted with one (standard) screw coupling, to pattern or drawing.

The seats and upholstering to be of design and quality, similar to most recent practice on the N.S.W. Government Railways, for this class of vehicle.

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No.		Where deli	vered.		Date	of delivery.	
Two Three Three Four	Do	Redfern Y do do do do	Yard, Sydney do do do do	 1884—in 1885— 1886— 1887— 1888—	twelve mont do do do do	ths from the date do do do do	e of the order. do. do. do. do.

Southern and Western Railway.

Specification No. 244, for a Composite Double-bogie American Carriage, with end entrances, &c.

1.—Each vehicle is to be made precisely the same in all respects as composite double-bogie carriage No. 68.

—The following materials are to be used:—

Under-frame—pitch pine, except headstocks, which are to be blue gum, tallow-wood, or black

Window pillars—black-wood or ash.

Corner door pillars—cedar (best quality).

Longitudinal rails (top and middle)—pitch pine or Oregon.

Roof-sticks—colonial beech.

Roof-boards (T. & G.)—Oregon pine, in narrow strips. Floor-boards—Oregon pine, $1\frac{1}{4}$ in. thick.

Panels—cedar.

Window-frames—cedar. Venetian blinds—cedar (with white cedar laths).

Mouldings-

7.—The following alterations from the sample vehicle are to be made, viz. :-

The compensating beams on buffer-rods of sample vehicle will be dispensed with; rubbers or volutes to be substituted, and the same to be supplied by the Department.

The bogies to be made to drawing No. 827.

The buffer-heads to measure 22 inches from face of headstock to the front face of buffers.

Lamp-irons to be fitted on sides and ends (six in all). Door lock to be to pattern lock No. 150 (American pattern).

Width of body to be same as pattern vehicle.

All axle-brasses to be nicely fitted to the journals, and the axle-boxes to be trimmed with castor oil, to the satisfaction of the Inspector, before the vehicle will be passed.

Each vehicle to be fitted with one (standard) screw coupling, to pattern or drawing.

3.—The number of vehicles required under this specification, and the place and time of delivery

of the same, to be as follows:

No.		Where de	livered.		Date	of deliver y .	
One One One Two	On the rails, Do Do Do Do	Redfern do do do do	Yard, Sydney do do do do do	 1884—in 1885— 1886— 1887— 1888—,	twelve mont do do do do	ns from the dat do do do do	e of the order. do. do. do. do.

Southern and Western Railway.

Specification No. 267, for a First-class Bogie Carriage (Redfern type).

1.—Each vehicle is to be made precisely in accordance with drawings Nos. 827, 828, 830, Locomotive Engineer's Office, Redfern.

-The following materials are to be used:-

Under-frame—principal members as marked on plan—blue gum, tallow-wood, or black butt.

Do subordinate members—pitch pine or Oregon.

-side and end framing, pillars and rails—Tasmanian black-wood, ash, or other approved timber.

Do top side-rails and end sweeps—pitch pine or Oregon.

Do roof-sticks—ash or colonial beech.

Do floor-boards—Baltic pine, $1\frac{1}{4}$ in. thick (tongued and grooved).

Do floor-frame—pitch pine, $3\frac{1}{4}$ in. thick.

Do division and lining boards—Oregon pine (tongued and grooved).

Do seat-rails—Kauri pine (lined with cedar).

Do seat-boards—Oregon pine (tongued and grooved).

Do roof-boardsdo

Do window-frames—cedar.

Venetian blinds—cedar, with Huon pine louvres.

Outside panels—cedar. Inside panels—Huon pine.

Inside mouldings—cedar.

-Arrangement of body:

The body is to be divided into six first-class compartments, as indicated on plan or drawing No. 830.

All corner, door, and division pillars to have wrought-iron knees (top and bottom), secured by coach screws or bolts; and all principal floor-frame corners to be similarly secured.

The floor-frame to be secured to under-frame by strap bolts, vide drawing No. 837.

Under-frame to be constructed as indicated on plan or drawing No. 828.

The vehicle is to be carried on two bogies, which are to be constructed as indicated on plan or drawing No. 827.

Lamp-irons (six in number) to be fixed as directed by the Inspector.

One standard screw-coupling to be supplied with each vehicle. \(\frac{1}{4}\)-in. plate-glass to be used for windows.

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:

No.		Where del	livered.		Da	te of d	leliver y.		
One Two Three Three	On the rails, Do Do Do Do Do	Redfern do do do do do	Yard, Sydney do do do do	 1884—in 1885— 1886— 1887— 1888—	twelve modo do do do do	ntbs f	rom the do do do do	e date	of the order. do. do. do. do.

Southern and Western Railway.

Specification No. 270, for a Second-class Bogie Carriage (Redfern type).

1.—Each vehicle is to be made precisely in accordance with plans or drawings Nos. 846, 828, 827. Locomotive Engineer's Office, Redfern.

3.—The following materials are to be used:

Under-frame—principal members—blue gum, black butt, or tallow-wood (as marked on plan).

Do subordinate members—pitch pine or Oregon.

Body-side and end framing, pillars and rails-Tasmanian black-wood, ash, or other approved timber

Do top side-rails and arch-rails—pitch or Oregon pine.

Do roof-sticks—ash or colonial beech.

Do floor-boards—Baltic pine, $1\frac{1}{4}$ in. thick (tongued and grooved).

Do floor-frame—pitch pine or Oregon, $3\frac{1}{4}$ in. thick.

Do division and lining boards—Oregon pine (tongued and grooved).

Do seat-rails-Kauri pine.

Do seat-boards—Oregon pine (tongued and grooved).

Do roof-boards-D٥

window-frames—cedar.

Venetian blinds—cedar (with Huon pine louvres).

Do outside panels—cedar.

Do mouldings, internal—cedar.

-Arrangemement of body:-

The body is to be divided into seven second-class compartments, as indicated on plan or drawing No. 846.

All corner, door, and division pillars are to have wrought-iron knees top and bottom, secured by coach screws or bolts; and all principal floor-frame corners are to be similarly secured.

The floor-frame is to be attached to under-frame by means of suitable strap bolts, vide drawing No. 837.

The under-frame is to be constructed as shown on plan or drawing No. 828.

The vehicle is to be carried on two four-wheeled bogies, which are to be constructed as shown on plan or drawing No. 827.

Lamp-irons (six in all) to be fixed as directed by the Inspector,

One standard screw-coupling to be supplied with each vehicle.

1/4-in. plate-glass to be used for windows.

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No:		Where deliver	ed.			Date o	of delivery.	
Four Five Five Six	On the rails, Do Do Do Do	Redfern Yar do do do do	d, Sydney do do do do	•••	1884—in t 1885— 1886— 1887— 1888—	welve month do do do do	s from the dat do do do do	e of the order. do. do. do. do.

Southern and Western Railway.

Specification No. 272, for a Composite Break-van (Bogie-Redfern type).

1.—Each vehicle is to be made precisely in accordance with the drawings Nos. 841, 842, 843, 827, to be seen at the Locomotive Engineer's Office, Redfern, except where herein specified to the contrary.

3.—The following materials are to be used:—

Underframe—principal members as marked on plan—blue gum, black-butt, or tallow-wood.

subordinate do. do do -pitch pine or Oregon.

-side and end framing pillars and rails-Tasmanian blackwood, ash, or other approved

top-side rails and end sweeps-pitch pine or Oregon.

roof sticks—ash or colonial beech.
floor frame—pitch pine, $3\frac{1}{4}''$ thick.
do. boards—Baltic pine, $1\frac{1}{4}''$ thick (tongued and grooved).

division and lining boards—Oregon pine (tongued and grooved).

seat rails-Kauri pine.

do. boards—Oregon pine (tongued and grooved). roof do. do. do.

window frames—cedar. Venetian blinds—do. (with Huon pine louvres).

outside panels— do

internal mouldings in passenger compartments—cedar.

Arrangement of body.

The body of the vehicle is to be constructed as shown upon the drawings or plans, and is to be arranged at one end with two passenger coupés; each coupé to have a closet attached—the one to be for accommodation of ladies and the other for gentlemen. This is to be indicated in painting on the outside of the doors. The other end of the body is to be fitted up as a guards' compartment proper, with brake-wheel, sand-boxes, seats, and shelves, &c., as required, and is to be separated from the luggage compartment by a division or bulkhead, with a double swing door in middle.

The main or central portion of the body is to be arranged as a luggage compartment proper, containing two dog-boxes, and having, if so required by the Locomotive Engineer, a portion of the floor at one end set apart for accommodation of fish, and suitably flashed with lead, &c., for such purpose. Luggage compartment to have double folding or sliding doors, as directed by the Inspector, on either side. All corner, door, and division pillars to have wrought-iron knees, top and bottom, secured by coach screws or bolts, and all principal floor frame to be secured to under-frame by strap bolts, vide drawing No. 837.

Lamp irons (six in all) to be fixed as directed by the Inspector.

One standard screw coupling to be supplied with each vehicle.

plate-glass to be used for windows. The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No			Vhere deliver	ed.			Date of deliv	ery.
One Two Two Two Three	•••	On the rails, R Do. Do. Do. Do.	edfern yard do. do. do. do.	l, Sydney do. do. do. do.	•••	1884—in 12 1885— 1886— 1887— 1888—	2 months from t Do. Do. Do, Do,	the date of the order do. do. do. do.

Southern and Western Railway.

Specification No. 273, for a 6-wheeled Luggage Brake-van (passenger).

1.—Each vehicle is to be made precisely in all respects as the plans or drawings Nos. 847, 848, to be seen at the Locomotive Engineer's Office, Redfern, except where herein specified to the contrary.

-The following materials are to be used:

Under-frame—blue gum, tallow-wood, or black butt. Body bottom frame—blue gum, tallow-wood, or black butt.

side and end frame—do. do. do. inside lining boards—Oregon pine (tongued and grooved). roof and partition boards—do. do.

- roof sticks—colonial beech.
- window frames and doors—cedar. floor—Oregon or Kauri pine.

The main draw-bar to be $1\frac{3}{4}$ diameter continuous.

Cast-iron brake blocks to be provided similar to the most recent standard type in use by the Department.

Lamp-irons (six in all) to be fixed as directed by the Inspector. One standard screw coupling to be supplied with each vehicle.

(Conditions Nos. 8 and 10 excised.)

9.—The glass frames are to be completed in accordance with the most approved arrangement in

use at the present time on the Railways, and plate-glass 1 thick to be used.

11.—During the ordinary hours of labour, and at all other reasonable times, access is to be allowed to the servants of the Railway Department to enter the premises of the Contractor for the vehicles, for the purpose of fitting the Westinghouse brake apparatus to the said vehicles.

13.—The number of vehicles required under this specification, and the place and time of delivery of

the same, to be as follows:

No.		\mathbf{W} here	delivered.	Date of delivery.						
Two Three Three Three Four	Do Do Do	, on rails in I do do - do do	Redfern yard do do do do				1884—in 12 1885— 1886— 1887— 1888—	months from do do do do	date	of order. do do do do

Great Northern Railway.

Specification No. 213 for a Mail-van (4 wheels).

-Each vehicle is to be made precisely the same in all respects as mail-van No. 6.

The following materials are to be used:—
Under-frame—blue gum, tallow-wood, or black butt.

Body bottom, side and end frames—pitch pine or Baltic.

Intermediate frame-bars—blue gum, tallow-wood, or black butt. Side frames, pillars, &c.—cedar (best quality).

blue gum, tallow-wood, or black butt. End frames-

Panels-cedar.

Top side rails—pitch pine or Oregon. Roofs sticks—colonial beech.

Window frames—cedar.

Venetian blind frames—cedar (with laths of white cedar). Roof lining and flooring boards—Oregon pine.

Sides and ends of body to be made flat without any turn under. Flooring boards to be $1\frac{1}{4}$ thick, and run transversely or longitudinally as required.

5. The following standard dimensions must be worked to, and if necessary, modifications from the sample vehicle must be made in the under-frames to suit these dimensions, viz.:

		10.	. ш.
Buffers, C. to C		5	9
Do from rail to C. (empty)	•••	3	5
Axles, bearing, C. to C	•••	6	$4\frac{3}{4}$
Do do diameter			
Do do length	•••	•••	
Wheels (diameter on tread)		3	$6\frac{1}{2}$

-The following alterations from the sample vehicle are to be made, viz.:

Width of body to be same as pattern vehicle.

The brake gear to be as shown in drawing No. Cast-iron brake blocks to be used, and so hung as to gear with the Westinghouse continuous

brake apparatus.

The Contractor must fit the axle brasses and trim the boxes in accordance with the Inspector's views; they are to be passed by him before the vehicle is sent out on the rails. Wheatley's patent locks to be fixed to doors.

Each vehicle to be fitted with one standard screw-coupling to pattern or drawing.

Main draw-bar to be continuous, as per drawing No. — or pattern gear to be supplied.

Buffers to stand out 22 inches from face of headstock.

Lamp irons (six in all) to be fixed as directed by the Inspector.

Side pillars to be made to patterns which will be supplied.

Panels to run vertically from fence-rail as required.

1/4-in. plate-glass to be used for windows.

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

- No.	Where delivered.		Date of delivery.	
One	On the rails at Newcastle Do do	•••	1884—in twelve months from date o 1885—in six months from do	f the order.

Great Northern Railway.

Specification No. 215 for a Hearse.

Each vehicle is to be made precisely the same in all respects as hearse No. 4.

The following materials are to be used:—
Under-frame—blue gum, tallow-wood, or black butt.

doBody—bottom frame—do

side and end frames—cedar (best quality).

panels and doors-cedar.

roofs—Oregon pine (tongued and grooved). top side rails—Pitch pine or Oregon.

5.—The following standard dimensions must be worked to, and if necessary, modifications from the sample vehicle must be made in the under-frames to suit these dimensions, viz.:-

				Lυ.	ш.
 				5	9
 	•••	• • •		3	5
 `	•••	•••		6	$4\frac{3}{4}$
 :					
 		•••	• • •		
 	`			3	$6\frac{1}{2}$
•••					5 3 6

6.—The painting and varnishing, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.

7.—The following alterations from the sample vehicle are to be made, viz.:-

The main draw-bar to be $1\frac{3}{4}$ diameter and continuous.

No brake gear required.
(Conditions Nos. 9, 10, and 11 excised.)
Double roofs must be fixed in accordance with the most recent practice of the Department.

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No.	Where delivered.	Date of delivery.	
One	On the rails at Newcastle	1884—in nine months from the date of the order	er.

Great Northern Railway.

Specification No. 216, for a Horse-box.

-Each vehicle is to be made precisely the same in all respects as horse-box No. 54.

-The following materials are to be used:

Under-frame—blue gum, tallow-wood, or black butt.

Body bottom frame— Side and end frames—

ďο do

do

do

End and side-panels and flaps—Oregon pine (tongued and grooved).

Roof and flooring boards—

do

do

Doors (framing)—cedar. Internal fittings—Oregon pine (tongued and grooved).

5.—The following standard dimensions must be worked to, and if necessary, modifications from the sample vehicle must be made in the under-frames, to suit these dimensions, viz.:-

					Ĭt.	ın.
Buffers, C. to C					 5	9
Do. from rail to C. (empt	y)			•••	 3	5
Axles, bearing, C. to C	• • • •	• • •			 6	4/3
Do do diameter		•••	•••			
Do do length				•••		
Wheels (diameter on tread)		•••	•••	• • •	 3	$6\frac{1}{2}$

6.—The painting and varnishing, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.
7.—The following alterations from the sample vehicle are to be made, viz.:-

The main draw-bar to be 1\frac{3}{4} in diameter, and continuous, and this as well as the brake gear to be in accordance otherwise with that existing on sheep-van No. 220.

The internal fittings generally to be of similar description and quality to those of the sample vehicle.

One standard screw coupling to be supplied with each vehicle.

(Conditions Nos. 8, 9, and 10 excised.)

11.—During the ordinary hours of labour, and at all other reasonable times, access is to be allowed to the servants of the Railway Department to enter the premises of the Contractor for the vehicles, for the purpose of fitting the through connections for the Westinghouse brake apparatus to the said vehicles.

13.—The number of vehicles required under this specification, and the place and time of delivery

of the same, to be as follows:-

No.			Who	ere deliver	ed.		`	Da	te of delive	ery.	
Four Five Five Five	•••	On the do do do do	rails at N do do do do	Vewcastle do do do do	e	 •••	1884—in 1885—in 1886— 1887— 1888—				e order.

Great Northern Railway.

Specification No. 219 for a Cattle-wagon.

1.—Each vehicle is to be made precisely van state 3.—The following materials are to be used:—
Under-frame—blue gum, tallow-wood, or black butt.
Body framing (complete)—do do do.
Panels and roof-boards—Oregon pine.
Poof sticks—colonial beech. -Each vehicle is to be made precisely the same in all respects as cattle-wagon No. 217.

Flooring-boards-Kauri.

6.—The painting, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.
7.—The following alterations from the sample vehicle are to be made, viz.:-

The main draw-bar to be 13in. diameter, continuous, and this, as well as the brake gear to be in accordance otherwise with that existing on sheep-van No. 220.

One standard screw-coupling to be be suppled with each vehicle.

(Conditions Nos. 8, 9, 10, and 11 excised.)

The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No.			Who	ere deliver	ed.			Date of delivery.
Seven Seven Seven	•	On the ra Do Do	ils at No do do	ewcastle do do	•••	•••	•	1884—in 9 months from date of the order 1885—in 6 months from date of the order 1886— do do do
even en	•••	Do Do	do do	do do	•••	•••		1887— do do do

Great Northern Railway.

Specification No. 220, for a Sheep-van.

-Each vehicle is to be made precisely the same in all respects as sheep-van No. 220.

1.—Each vehicle is to be made ;
3.—The following materials are to be used:

Under-frame—blue gum, tallow-wood, or black butt.

Body bottom framedo

Side and end framesdo

Roof and end boards-Oregon pine (tongue and grooved).

Upper floor-blue gum, tallow-wood, or black butt.

Bottom floordo

Roof sticks—colonial beech.

6.—The painting, inside and out, shall be carried out as directed by the Engineer, in the most

approved and complete manner.

7.—The following alterations from the sample vehicle are to be made, viz.:—

The main draw-bar to be 1\frac{1}{4}" diameter and continuous, and this, as well as the brake gear, to be in accordance otherwise with that existing on sheep-van No. 220.

One standard screw coupling to be supplied with each vehicle. (Conditions Nos. 8, 9, 10, and 11 excised.)

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No	٠.	V	There delivered.		Date of delivery.					
Five Six Six Six Eight		On the rails at Do Do Do Do	t Newcastle do do do do	 •••	1884—in 12 1885—in 6 1886— 1887— 1888—in 8	months from date do do do do	of the order. do do do do do			

Great Northern Railway.

Specification No. 221, for a Powder-van.

1.—Each vehicle is to be made precisely the same in all respects as powder-van No. 10.

3.—The following materials are to be used :—
Under-frame—blue gum, tallow-wood, or black butt.

Body framingdo

Roof sticks—colonial beech.
Roofing and lining boards—Oregon pine (tongued and grooved).

Flooring boards—Kauri (tongued and grooved).

Floor to be covered with sheet-lead not less than 16" thick.

All inside boards to be fastened with brass screws and copper nails, and heads of iron bolts or nuts to be covered with brass cups.

6.—The painting, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.

—The following alterations from the sample vehicle are to be made, viz.:—Outside boards to be fixed vertically.

The diagonal struts on sides and ends to be fitted as directed by the Inspector.

To have double roof same as "C" vans, and the height of roof to be the same as on sample "C" van.

The main draw-bar to be 13" diameter and continuous, and this, as well as the brake gear, to be in accordance otherwise with that existing on sheep van No. 220.

(Conditions Nos. 8, 9, 10, and 11 excised.)

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:

No.	Where delivered.	. Date of delivery.
One	On the rails at Newcastle Do do	1884—in 8 months from date of the order. 1885— do do do

Great Northern Railway.

Specification No. 223, for a Low-sided Wagon "A."

1.—Each vehicle is to be made precisely the same in all respects as "A" truck Nos. 119 and 120.

3.—The following materials are to be used:

Under-frame—blue gum, tallow-wood, or black butt.

Floor-boards-Body—Sides and ends, Kauri pine.

6.—The painting, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.

7.—The following alterations from the sample vehicle are to be made, viz.:—

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8. **The following alteration of the sample vehicle are to be made, viz.:—

8. **The following alteration of the sample vehicle are to be made, viz.:—

8. **The following alteratio

do.

The main draw-bar to be 13 in. diameter and continuous, and this as well as the brake gear to be in accordance otherwise with that existing on sheep-van No. 220. (Conditions Nos. 8, 9, 10, and 11 excised.)

13.—The number of vehicles required under this specification, and the place and time of delivery of same, to be as follows:

No.			Where deliver	ed.		Date of delivery.			
x ight ight ight en	•••	, .	s at Newcastle Do Do Do Do	•••	 	1884—in 9 1885—in 8 1886—in 6 1887— 1888—	do	date of the order do do do do	

Great Northern Railway.

Specification No. 224, for a High-sided Wagon "B."

-Each vehicle is to be made precisely-the same in all respects as "B" wagon No. 156.

The following materials are to be used:—
Under-frame—blue gum, tallow-wood, or black butt.
Body—sides and ends— do do.

flooring-blue gum.

panelling, Oregon pine.

6.—The painting, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner,

—The following alterations from the sample vehicle are to be made, viz.:—

The main draw-bar to be 13/4 in. diameter and continuous, and this as well as the brake gear to be in accordance otherwise with that existing on sheep-van No. 220.

(Conditions Nos. 8, 9, 10, and 11 excised.)

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No.			Where deliver	ed.	-	Date of delivery.			
Eight Ten Ten Ten Twelve	•••	On the rails Do Do Do Do	at Newcastle do do do do			•••	1887— do do '		

Great Northern Railway.

Specification No. 225, for a Covered Goods Van "C."

1.—Each vehicle is to be made precisely the same in all respects as "C" van No. 192.
3.—The following materials are to be used :—
Under-frame—blue gum, tallow-wood, or black butt.

Body framing— do. do. Panels and roof boards—Oregon pine.

Flooring boards-Kauri.

6.—The painting, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.

7.—The following alterations from the sample vehicle are to be made, viz.:—

Outside boards to be fixed vertically.

Diagonal struts to be fitted on sides and ends as directed by the Inspector.

The main draw-bar to be $1\frac{3}{4}$ diameter, and continuous, and this, as well as the brake gear, to be in accordance otherwise with that existing on sheep van No. 220.

(Conditions Nos. 8, 9, 10, and 11 excised.)

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No.	. W	here delivered.		Date of delivery.				
Ten Twelve Twelve Twelve Fourteen	On the rails a Do Do Do Do	t Newcastle do do do do	 	1884—in 1885— 1886— 1887— 1888—	ten month do do do do	s from the do do do do	. d	he order. lo lo lo lo

Great Northern Railway.

Specification No. 226, for a Medium-sided Wagon "D."

1.—Each vehicle is to be made precisely the same in all respects as "D" wagon No. 3,421.

3.—The following materials are to be used:—
Under frame—blue gum, tallow-wood, or black butt.

Body, sides and ends-Kauri pine.

End stanchions—blue gum or black butt.

Floor boardsdo.

-The painting, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.

The following alterations from the sample vehicle are to be made, viz.:-The main draw to be 13" diameter, and continuous, and this, as well as the brake gear, to be in accordance otherwise with that existing on sheep van No. 220.

(Conditions

(Conditions Nos. 8, 9, 10, and 11 excised.)

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No.		W	here delivered.	•	Date of delivery.				
Sixty Seventy Seventy Seventy Eighty		On the rails a Do Do Do Do	t Newcastle do do do do	 •••	1884—in twelve months from date 1885—in six months from date of 1886— do do 1887— do do 1888— do do	of the order. the order. do do do			

Great Northern Railway.

Specification No. 227, for a pair of Timber Trucks ("E").

1.—Each pair of vehicles is to be made precisely the same in all respects as pair of "E" trucks Nos. 189 and 190.

3.—The following materials are to be used:-

-blue gum, tallow-wood, or black butt.

do do Flooring do do do

6.—The painting, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.

7.—The following alterations from the sample vehicle are to be made, viz.:—

The general arrangement of brake gear and the main draw-bar to be in accordance with that existing on sheep van No. 220. Main draw-bar to be 1\frac{3}{4} in diameter.

(Conditions Nos. 8, 9, 10, and 11 excised.)

13.—The number of vehicles required under this specification, and the place and time of delivery

of the same, to be as follows:-

	No. Where delivered.						1	Date of delivery.	
Five Five Five Six	pairs		On the	rails at Newcástle Do Do Do Do	•••		twelve month do do do		date of the order. do do do do do

Great Northern Railway.

Specification No. 256, for a Meat-van.

-Each vehicle is to be made precisely the same in all respects as meat-van No. 19.

2.—The following materials are to be used :—
Under-frame—blue gum, tallow-wood, or black butt.
Body side-frames— do do do end-frames-- do do do

side and end panelling—Oregon pine (tongued and grooved).

roof—Oregon pine (tongued and grooved). flooring—Kauri pine.

-The painting, inside and out, shall be carried out as directed by the Engineer, in the most approved and complete manner.

7.—The following alterations from the sample vehicle are to be made, viz.:—

The main draw-bar to be 1\frac{3}{4}-inch diameter and continuous, and this, as well as the brake gear, to be in accordance otherwise with that existing on sheep-van No. 220.

(Conditions Nos. 8, 9, 10, and 11 excised.)

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:

No.	Where delivered.	Date of delivery.				
One One	D ₀		 1884—in 1885— 1866—	six month do do	s from the date do do	e of the order. do do

Great Northern Railway.

Specification No. 267, for a First Class Bogie Carriage (Redfern type).

1.—Each vehicle is to be made precisely in accordance with the drawing Nos. 827, 828, and 830, to be seen at the Locomotive Engineer's Office, Redfern.
3.—The following materials are to be used:

-principal members, as marked on plan—blue gum, tallow-wood, or black butt. Under-frame-

subordinate members-pitch pine or Oregon.

Body—side and end framing, pillars and rails—Tasmanian blackwood or ash, or other approved

top side rails and end sweeps-pitch pine or Oregon.

roof sticks—ash or colonial beech.

thick (tongued and grooved).

floor-boards—Baltic pine, $1\frac{1}{4}$ " thick (tongued and grooved). do. frame—pitch pine, $3\frac{1}{4}$ " thick (tongued and grooved). division and lining boards—Oregon pine (tongued and grooved).

seat rails—Kauri pine (lined with cedar).

do. boards—Oregon pine (tongued and grooved).

roof do. window frames-cedar.

venetian blindsdo

(with Huon pine louvres).

outside panels— do. inside panels-Huon pine. do. mouldings-cedar.

-Arrangement of body: The body is to be divided into six first class compartments, as indicated on plan or drawing, No. 830

All corner door and division pillars to have wrought iron knees (top and bottom), secured by coach screws or bolts, and all principal floor frame corners to be similarly secured.

The floor-frame to be secured to under-frame by strap bolts, vide drawing No. 837.

Under-frame to be constructed as indicated on plan or drawing No. 828

The vehicle is to be carried on two bogies, which are to be constructed as indicated on plan or drawing No. 827.

Lamp irons (six in all) to be fixed as directed by the Inspector. One standard screw coupling to be supplied with each vehicle.

1" plate glass to be used for windows.

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No.	Where delivered.	Date of delivery.
One One Oue	Do do do	 1884—in 12 months from date of the order. 1885— do do do do 1886— do do do

Great Northern Railway.

Specification No. 268, for a Composite Bogie Carriage (Redfern type).

-Each vehicle is to be made precisely in accordance with the plans or drawings Nos. 827, 828, and 829, to be seen at the Locomotive Engineer's Office, Redfern, except where herein specified to the contrary.

The following materials are to be used:-Under-frame—principal members, as marked on plan-blue gum, black butt, or tallow-wood.

subordinate members—pitch pine or Oregon.

-side and end framing, pillars and rails—Tasmanian black-wood, ash, or other approved timber.

top side rails and arch rails—pitch or Oregon pine. roof sticks—ash or colonial beech.

floor boards—Baltic pine, $1\frac{1}{4}$ " thick (tongued and grooved).

Do. frame—pitch do. or Oregon, $3\frac{1}{4}$ " thick.

division and lining boards—Oregon pine (tongued and grooved).

seat rails—Kauri pine (lined with cedar for first class compartments).

do boards-Oregon pine (tongued and grooved).

window frames-cedar. do. (with Huon pine louvres).

Venetian blinds— do outside panels— do.

mouldings, internal-cedar.

The body is to be divided into two first and four second class compartments, as indicated on plan or drawing No. 829. -Arrangement of body:

All corner door and division pillars to have wrought iron knees (top and bottom), secured by coach screws or bolts, and all principal floor frame corners are to be similarly secured.

The

The floor-frame is to be attached to the under-frame by means of suitable strap bolts, vide drawing No. 837.

Under-frame—The under-frame is to be constructed as shown on drawing No. 828.

The vehicle is to be carried on two 4-wheeled bogies, which are to be constructed as indicated on plan or drawing No. 827.

Lamp irons (six in all) to be fixed as directed by the Inspector. One standard screw coupling to be supplied with each vehicle. $\frac{1}{4}$ -inch plate glass to be used for windows.

Westinghouse patent air brake apparatus, pipes, and couplings provided and fixed by the Department.

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No.		W	iere deliv	ered.			Date	of delivery.	
One One One	 On the r Do Do Do	ails at I do do do	Vewcast do do do	le 	 	1884—in 1885— 1886— 1887—	12 month do do do	s from the da do do do	te of order. do do do

Great Northern Railway.

Specification No. 270, for a Second-class Bogie Carriage (Redfern type).

1.—Each vehicle is to be made precisely in accordance with the plan or drawing Nos. 846, 827, and 828, to be seen at the Locomotive Engineer's Office, Redfern, except where herein specified to the contrary. -The following materials are to be used :-

Under-frame—principal members as marked on plan—blue gum, tallow-wood or black butt.

Do subordinate members—pitch pine or Oregon.

do.

Body-side and end framing, pillars and rails—Tasmanian blackwood or ash, or other approved

top side rails and arch rails--pitch pine or Oregon. $\mathbf{D}_{\mathbf{0}}$

roof sticks—ash or colonial beech.

floor-boards—Baltic pine, $1\frac{1}{4}$ inch thick (tongued and grooved). frame—pitch pine or Oregon, $3\frac{1}{4}$ inches thick. \mathbf{D}_{o}

 \mathbf{D}_{0}

division and lining boards—Oregon pine (tongued and grooved). D_0 Dο

seat rails—Kauri pine.

seat boards-Oregon pine (tongued and grooved). \mathbf{D}_{0}

 \mathbf{D}_{0} roof do- $\mathbf{D}_{\mathbf{0}}$ window frames—cedar.

Venetian blinds—do. with Huon pine (louvres). Dο

Ðο outside panels-do.

mouldings, internal-do.

-Arrangement of body :-

The body is to be divided into seven second-class compartments, as indicated on plan or drawing

All corner door and division pillars are to have wrought-iron knees top and bottom, securéd by coach-screws or bolts, and all principal floor-frame corners are to be similarly secured. The floor-frame is to be attached to under-frame by means of suitable strap-bolts, vide drawing

The under-frame is to be constructed as shown on plan or drawing No. 828.

The vehicle is to be carried on two four-wheeled bogies, which are to be constructed as shown on plan or drawing No. 827.

Lamp-irons (six in all) to be fixed as directed by Inspector. One standard screw coupling to be supplied with each vehicle. \frac{1}{4}-in. plate glass to be used for windows.

10.—The upholstering to be of similar quality and description to that at present used by the Department for this class of vehicle.

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:-

No.	Where delivered.					•	Date of	f delivery.	
One Two Two Three	On the rails Do Do Do Do Do	in Newcastle do do do do	•••	•••		1884—in 1885— 1886— 1887— 1888—	twelve months do do do do	from date do do do do	of the order. do do do do

Great Northern Railway.

Specification No. 272, for a Composite Brake-van (Bogie, Redfern type).

1—Each vehicle is to be precisely in accordance with the drawings Nos. 841, 842, 843, and 827, to be seen at the Locomotive Engineer's Office, Redfern, except where herein specified to the contrary.

-The following materials are to be used: Under-frame—principal members as marked on plan—blue gum, black butt, or tallow-wood.

pitch pine or Oregon. subordinate do do

Body—side and end framing, pillars, and rails—Tasmanian blackwood, ash, or other approved

top side rails and end sweeps-pitch pine or Oregon. Dο

roof sticks—ash or colonial beech. Dο

 \mathbf{D}_{o}

floor-frame—pitch pine, $3\frac{1}{4}$ inches thick.
floor-boards—Baltic pine, $1\frac{1}{4}$ inch thick (tongued and grooved).
division and lining boards—Oregon pine (tongued and grooved).

seat-rails—Kauri pine. \mathbf{D} o

seat-boards—Oregon pine (tongued and grooved). roof-boards—do do. Do

Do

window-frames—cedar. \mathbf{D} o

Venetian blinds—do (with Huon pine louvres).

outside panels-do.

Do internal mouldings in passenger compartments—cedar.

-Arrangement of body:

The body of the vehicle is to be constructed as shown upon the drawings or plans, and is to be arranged at one end with two passenger coupés; each coupé to have a closet attached, the one to be for the accommodation of ladies, and the other for gentlemen. (This is to be

indicated in painting on the outside of the doors.)

The other end of the body to be fitted up as a guard's compartment proper, with brake-wheel, sand-boxes, seats, and shelves, &c. as required, and is to be separated from the luggage com-

partment by a division or bulkhead, with a double swing-door in middle.

The main or central portion of the body is to be arranged as a luggage compartment proper, containing two dog-boxes, and having (if so required by the Locomotive Engineer) a portion of the floor at one end set apart for accommodation of fish, and suitably flashed with lead, &c. for such purpose.

Luggage compartment to have double folding or sliding doors, as directed by the Inspector, on either side. All corner, door, and division pillars to have wrought-iron knees (top and hottom) good by cooks are to have a side of the cooks are to have a side bottom) secured by coach-screws or bolts, and all principal floor-frame corners to be similarly secured.

The floor-frame to be secured to under-frame by strap-bolts—vide drawing No. 837.

Lamp-irons (six in all) to fixed as directed by the Inspector.

One standard screw coupling to be supplied with each vehicle.

4-inch plate-glass to be used for windows.

10.—The upholstering to be of similar quality, description, and method of fixing to that at present used by the Department for this class of vehicle.

13.—The number of vehicles required under this specification, and the place and time of delivery of the same, to be as follows:

No.	•	Where deliver	ed.		-	Date of delivery.					
One Two Two Two	On the rails Do Do Do Do Do	at Newcastle do do do do		•••	•••	1884—in 1885— 1886— 1887— 1888—	twelve months do do do do	from date do do do do	of the orde do. do. do. do.	r:	

1883-4.

LEGISLATIVE ASSEMBLY.

SOUTH WALES.

RAILWAYS.

(PERMANENT-WAY.)

Ordered by the Legislative Assembly to be printed, 20 May, 1884.

RETURN to an Order of the Honorable the Legislative Assembly of New South Wales, dated 22nd January, 1884, That there be laid upon the Table of this

- "Copies of all correspondence, minutes, papers, &c., between the Secretary for Works and any official of the Works Department, and Hudson
- "Brothers, or any other person, in reference to leasing to the firm known as 'Hudson Brothers,' or any person, the right to keep the Permanent-
- "way of the Railways of this Colony in repair or working order for a "number of years."

(Mr. McElhone.)

NO.	SCHEDULE.	1	. PA	AGE
1. Letter from Messrs. Munford, Neson, and Ban from Mount Victoria to Eskbank Station,	aks, offering to maintain and supervise and minutes thereon. 10 August, 18	e portion of 81	the Western Line	1
2. Reply from Commissioner, declining the offer.	31 August, 1881	t ,		2

No. 1.

Messrs. Munford, Neson, and Banks to The Commissioner for Railways.

Mount Edgcombe, Clarence Siding P.O.,
Sir,
Great Western Railway, 10 August, 1881.
The order of the day being retrenchment in the various Departments of the Government of New South Wales, we have the honor to say, being residents on the Great Western Railway, and platelayers for several years engaged and working on this particular portion, as hereinafter named, to make an offer for the maintenance and supervision of that portion of the line leading from the Mount Victoria Platform and Station to the Eskbank (new station), a distance, including the double line, of 20 miles, for the sum of (£2,100) two thousand one hundred pounds per annum, for five years. We base our calculations upon the men at work, and of the present expense for maintenance and supervision at £2,500 per annum, to say nothing of extras, between Mount Victoria and Lithgow.

We are thoroughly acquainted, from practical experience extending over many years, of what the duties are and we shall have to perform without at present going into details.

[777 copies—Approximate Cost of Printing (labour and material), £1 11s. 8d.]

The men we shall employ will be old and experienced hands on the railways, and their whole time will be devoted to the requirements and improvements as they shall be demanded by the Engineer-in-Chief, or may occur daily through traffic; and divided into three sections or squads of five men each—one section or body of men of five to be stationed at each end, and five men about the centre of the proposed contract—making with the contractors a total of eighteen men. We are perfectly aware of the duties and the works to be performed, and if £400 a year can be saved in 20 miles, where there is so much extra work in running of trains as there is between Lithgow and Mount Victoria, we presume it may lead to future retrenchment along the whole of the lines in New South Wales.

We presume to make this offer for your consideration, and if you thought it advisable you might communicate with the Engineer-in-Chief of the line in question, and obtain that gentleman's views upon the subject.

The supervision and maintenance of this portion of the railway, we flatter ourselves we can give the Government every satisfaction if our project is successful.

We have, &c., MUNFORD, NESON, & BANKS.

P.S.—We presume to say that we are prepared to take the whole line through to Bathurst, for and at the rate of £100 a mile on an average, being a saving to the Department of £1,500 per annum; we should also require that our men should be conveyed free from point to point, that we could be able to concentrate the whole number, if required, at any given place for repairs, &c.—M. N. & Co.

Mr. Cowdery, for report.—G.B., B.C., 20/8/81. I cannot recommend this idea in any way.—G.C., 24/8/81. Commissioner. Cannot be sanctioned.—Ch. A. G., 28/8/81.

No. 2.

The Commissioner for Railways to Messrs. Munford, Neson, and Banks.

Sirs, Department of Public Works, Railway Branch, Sydney, 31 August, 1881.

In reply to your letter of the 10th instant, offering to maintain and supervise that portion of the Great Western Line which extends from Mount Victoria Station to the Eskbank Station, a distance of 20 miles, for the sum of £2,100 per annum, for five years, I have the honor to inform you that your offer is declined.

I have, &c.,

CHAS. A. GOODCHAP, Commissioner for Railways. 1883.

(THIRD SESSION.)

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

ELECTRIC LIGHT AT REDFERN RAILWAY STATION.

(COST, AND OTHER PARTICULARS.)

Ordered by the Legislative Assembly to be printed, 29 November, 1883.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 30th April, 1883, That there be laid upon the Table of this House a Return showing,—

- "(1.) The cost to the Department of the plant, *i.e.*, electric and motive power, and the price of each, used in connection with the electric "light at Redfern Station.
- "(2.) The cost of fixing and arranging the same for use.
- "(3.) The expenditure incurred by either the Electric Telegraph Department or the Railway Department, or both, for labour or services in con"nection with the electric light at Redfern Station.
- "(4.) The names of the employes who have been or are now engaged in connection with the electric light at Redfern Station, and what amount has been paid to each for such service.
- "(5.) The cost of maintenance, *i.e.*, fuel, &c., since the electric light has been in use.
- " (6.) The length of time the electric light has been used at Redfern, and "the number of lights used when it is in operation.
- "(7.) The number of times it became inoperative, or failed to produce "light during the month of March last.
- "(8.) The saving the Department effected in the gas account since the electric light has been in use.
- " (9.) The total cost of the experiment."

(Mr. Sydney Smith.)

ELECTRIC LIGHT AT REDFERN RAILWAY STATION.

- (1.) The cost to the Department of the plant, i.e., electric and motive power, and the price of each, used in connection with the electric light at Redfern Station?—The cost of the electric plant was £2,075.
- (2.) The cost of fixing and arranging the same for use \(-\mathcal{L} 50. \)
- (3.) The expenditure incurred by either the Electric Telegraph Department or the Railway Department, or both, for labour or services in connection with the electric light at Redfern Station?—From the time the light was first brought into use—15th June, 1882—till the 14th March, 1883, the expenditure was borne by the Electric Telegraph Department and by Mr. Kingsbury, who introduced the apparatus. No extra expenditure was incurred by the Electric Telegraph Department in attending to the lights, as the work was performed by the staff as a part of their duties. If, however, the work had not been performed in this way, the cost to the Department during the period named would have been about £120, being a man's wages at the rate of 10s. per night. From the 14th March till the 30th April (the date of the question) the machine attendant was paid £24 in wages by this Department.

 This Department paid the engine-driver's wages from the 15th June till the 30th April, amounting to £168 15s. 3d.
- (4.) The names of the employes who have been or are now engaged in connection with the electric light at Redfern Station, and what amount has been paid to each for such service?—Up to the 14th March the lights, as stated in reply to Question No. 3, were attended to by the Electric Telegraph Staff, whose names are Mr. Kopsch, Mr. Metcalfe, Mr. Venn, and by Mr. Kingsbury, who introduced the light, and Mr. Inspector Watson. From the 14th March till the 30th April the machine attendant was Mr. C. F. Krantzcki, whose wages during that period amounted to £24. From the 15th June, 1882, till the 30th April, 1883, the engine-driver was P. George, and his wages, as stated above, amounted to £168 15s. 3d.
- (5.) The cost of maintenance, i.e., fuel, &c., since the electric light has been in use?—£22 14s. 7d. as far as this Department is concerned, up to 30th April. An amount of £28 1s. 6d. was also incurred by Mr. Kingsbury.
- (6.) The length of time the electric light has been used at Redfern, and the number of lights used when it is in operation?—Since the 15th June, 1882, ten lights.
- (7.) The number of times it became inoperative, or failed to produce light during the month of March last?—Four times—twice through belts breaking, when interruption only lasted 5 minutes on one occasion, and 10 on the other; once through wire breaking (interruption lasted one hour); and once through engine-pump being out of repair (interruption lasted the whole night.)
- (8.) The saving the Department effected in the gas account since the electric light has been in use?—
 Nothing, because the contract provides for the contractor being paid by the burner, and as the electric light was being tried experimentally it was not deemed advisable to dispense with the gas lights.

(9.) The total cost of the experiment:—		${\mathfrak L}$	s.	d.
Fixing lights. &c		50		
Wages of machine attendant from 14th March till 30th April		24	0	0
Wages of engine-driver		168	15	3
Fuel and stores paid by Department	٠	22	14	7
•	٠	265		10
•	£	200	9	ΙŪ

It should be mentioned, however, that so far the Department has not reaped the full benefit of the electric plant, because up to the present time only ten lights have been in use, but in a short time twenty-five lights will be used, and then gas will be dispensed with to a very large extent.

1883.

(THIRD SESSION.)

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY PASSES GRANTED TO PERSONS OTHER THAN ASSISTED IMMIGRANTS.

(CORRESPONDENCE AND REPORTS.)

Ordered by the Legislative Assembly to be printed, 16 November, 1883.

RETURN to an Order made by the Honorable the Legislative Assembly of New South Wales, dated 7th November, 1883, That there be laid upon the Table of this House,-

"Copies of the Reports and Returns of the Agent for Immigration in

"reference to the Railway Passes granted by him to persons other than

"Assisted Immigrants, from the 1st January to 30th September, 1883,

"omitting therefrom the names of the receivers of such passes."

(Mr. Burns.)

The Commissioner for Railways to The Immigration Agent.

Sir,

Department of Public Works, Railway Branch, Sydney, 26 June, 1883.

The attention of the Secretary for Public Works having been called to the large number of free passes issued to the unemployed, I have the honor to request that you will be good enough to distinguish in the Returns sent in between those who are entitled, under the Immigration Regulations, to free passes, and the ordinary unemployed; and shall be glad if you will endeavour to limit the issue of the latter passes as much as possible. There is reason to believe that sometimes, through misrepresentation made to your Board, passes are issued to persons not in any way entitled to them, viz., to men who are not wholly destitute, and have employment or are promised employment in the country. The passages of these men could and would be deducted by their employers from their after earnings if free passes were not granted by the Board. The difficulty of discriminating in all cases is admitted to be very great; and the present representation is not made in any spirit of fault-finding, but for the purpose very great; and the present representation is not made in any spirit of fault-finding, but for the purpose of putting the Board upon their guard against persons who may be imposing upon them. I have to add that the thanks of the Department are due to the Board for the trouble they have for so many years taken in this matter. I have, &c.

C. A. GOODCHAP, Commissioner for Railways, per D.V.

The Immigration Agent to The Commissioner for Railways.

Sir,

I have the honor to acknowledge receipt of your communication, dated the 26th ultimo, stating that the "attention of the Secretary for Public Works has been called to the large number of free passes issued to the unemployed," and asking for some information thereon. Sir,

The free passes that I issue to immigrants are quite distinct from those issued to the unemployed; thus the nominal list of free passes forwarded by me to your Department each month relates solely to the unemployed.

I have now the honor to transmit the list of free passes issued to the unemployed during the months of May and June, and would specially invite the attention of the Minister to the summary for each month; it is there noted that in May I refused to grant passes to thirty-six individuals, and in June I month; it is there noted that in May I retused to grant passes to thirty-six individuals, and in June I refused twenty-five individuals, no less than sixty-one refused in two months, thus showing that I exercise some discretion. I must add, however, that in so doing I receive the greatest abuse; and it has even been stated in the Assembly that rather than grant free passes I would allow a man to starve. My refusal to grant passes has been most seriously animadverted upon. I am constantly in receipt of letters from clergymen, from Members of Parliament, and from other gentlemen requesting passes for men whom, nevertheless, I have refused. I have noted the reason of each refusal in the record book, a reference to which I think would satisfy the Minister that in all cases I have had good and sufficient grounds for not which I think would satisfy the Minister that in all cases I have had good and sufficient grounds for not

I require each applicant to produce a written certificate, showing the date of his arrival in the Colony, in addition to which I personally examine each one as to his previous occupation; thus when I find, although a man may have only recently arrived from Victoria or elsewhere, that he has previously been at work on the railway in this Colony for months, or has been years in this Colony, I decline to give a pass to such an applicant, notwithstanding that he may produce a letter of recommendation, such as I

have previously alluded to.

I do not give a second pass to a man, although he may be recommended, or may, as he states, have

lost his pass.

I have satisfied myself that in some instances passes have been transferred, probably have been sold. I always give passes to those aged and infirm persons who have lately left either the Liverpool or Parramatta Asylum, or have been discharged from Sydney Hospital. Occasionally, but under exceptional

circumstances, I give a pass to a woman.

There is no doubt that the granting of free passes to proceed to the railway works in various parts

There is no doubt that the granting of free passes to proceed to the railway works in various parts of the country is not only a great boon to the labourers but is also most advantageous to the railway contractors; for instance during the past two months I have forwarded to Dubbo, Nevertire, and Nyngan, no less than 393 labouring men.

I am pleased to note that you consider that I have faithfully fulfilled my duty, and am deserving of the thanks of your Department; at the same time I would respectfully urge that I should be glad to be relieved from the very onerous occupation of granting free passes to the "unemployed," because of the large amount of time consumed, which would be far better spent in the special business of my Immigra-I have, &c., G. F. WISE, tion Department.

Agent for Immigration.

The Commissioner for Railways to The Immigration Agent.

Department of Public Works, Railway Branch, Sydney, 16 July, 1883. With reference to your letter of the 7th instant, enclosing a list of free passes issued by you to the unemployed during the months of May and June, and also detailing the circumstances under which passes are refused by you,

I am directed by Mr. Secretary Wright to inform you that he considers your explanation very

satisfactory.

I have, &c., C. A. GOODCHAP, Commissioner for Railways, per D.V.

RETURN of Railway Passes applied for by persons other than Assisted Immigrants from the 1st January to the 31st October, 1883.

				Applic wh	ants o					1	Applica	nts arri	ved fror	n ,				
1883. Month.	Number of Applicants.	Passes refused.	Passes granted.	Can write.	Cannot write.	Great Britain.	Victoria.	Queensland.	South Australia.	Tasmania.	New Zealand.	America.	Africa.	India.	Germany.	Italy.	Other Countries.	Residents of N.S. Wales.
January February March April May June July August September October	136 148 181 314 416 382 328 309 402 384 3000	30 34 17 28 36 25 45 30 34 26	106 114 164 286 380 357 283 279 368 358	94 102 150 257 355 326 263 261 347 332	12 12 14 29 25 31 20 18 21 26	18 22 39 36 54 46 51 98 81	29 28 48 109 202 150 146 61 84 96	14 11 9 18 18 18 16 17 26 86	4 17 21 21 27 29 15 23 19 12	2 9 5 11 2 3 11 12 6	5 11 6 22 34 31 20 33 19 10	6 3 2 1 4 10 4 	 2 3 2 21 7 9 13 16	2 4 3 12 1 6 	1 2 1 5 8 2 	6 6 16 30 6 3 9 	2 4 5 1 11 6 9 11 15	19 8 4 38 13 16 9 50 86 36

MEMORANDUM.—Of the above number 151 railway passes were given to Mr. Bruce, Inspector of Stock, for men, forwarded by him to Hay, for the destruction of rabbits. GEORGE F. WISE,

Immigration Office, Sydney, 8 November, 1883.

Agent for Immigration.

Sydney: Thomas Richards, Government Printer.—1883

1883.

(THIRD SESSION.)

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

MR. JOHN FOWLER, C.E.

(AMOUNT OF COMMISSION PAID TO, ON ENGINEERING WORKS.)

Ordered by the Legislative Assembly to be printed, 9 October, 1883.

RETURN to an *Order* of the Legislative Assembly, dated 14 February, 1883, That there be laid upon the Table of this House, a Return showing,—

- "(1.) The amount of money paid or owing to Mr. John Fowler, C.E.,
- "England, as his commission on engineering works for this Colony, from
- "his first appointment up to present date, showing each work and the
- "commission paid on it separately."
- "(2.) The same as regards any other Engineers who may have been employed."

(Mr. Murray.)

MR. JOHN FOWLER, C.E.

AMOUNT of Money paid or owing to Mr. John Fowler, C.E., England, as his commission on engineering works for this Colony, from his first appointment up to present date, showing each work and the commission paid on it separately.

Name.	. Work.	Amount.						
Messrs. J. Fowler, C.E	Rolling stock and renewals	£ 16,028 14,982 790 726	11 10 17 •4	d. 7 0 9 6	£	s.	d.,	
	Hunter River	264 308 329 124 73 962 199	17 18 6 5 7	6 1 7 9 5 2				
	Telegraph instruments Bridge, South Creek, Windsor	43 73	15 11	$\begin{bmatrix} 0 \\ \hline 6 \end{bmatrix}$	34,834	14	1	
	Balranald Peel River, at Tamworth Bundarra Parramatta and Iron Cove Lismore, Richmond River Oxley	76 8 201 1,171 57 34	$\begin{array}{c} 17 \\ 6 \\ 2 \\ 15 \end{array}$	$\frac{4}{1}$ $\frac{1}{6}$ $\frac{1}{1}$				
	Appliances discharging ballast, Newcastle, wheels and axles	12		2	1,623	16	5	
	Wharf and shipping appliances, Newcastle, hydraulic machinery	311	7	3	323	8	5	
	Sewer from Glebe to Blackwattle Swamp, pipes Southern breakwater, Newcastle, rails and fishplates, &c		16	3 8 0	920	0	J	
	Improving entrance to Lake Macquarie, rails Erection of three steam cranes and sidings Wollongong, rails and wheels Erection of cranes and wharf, Darling Harbour	, 8 10 7 385	$\begin{matrix} 7 \\ 14 \end{matrix}$	6 6 4				
	Landing silt and forming ground, Priestman crane	25	2	6	459	4	9	
•				£	38,241	3	8	

AMOUNT of Money paid to other Engineers who may have been employed on engineering works for this Colony.

Name.	Works.	Amounts.						
Ta . Ta . Ca . 11	D. 1	,	£	8.	d:	· £	s.	d.
F. W. Shields	Railway stock and renewals	·· ···	430		6			
. ~	Permanent way materials	ľ	3,576		11		٠.	
	Machinery, tools, &c		. 30		4			
	Stores		23	16	3	4.07.0	10	_
Mossas Camaran & Ca	Marine Duiler				_	4,016	16	0
Messrs. Cameron & Co	Nowra Bridge		245	H	6	045	^	•
R. C. Bagot	Darling Pivon at Davels					245	9,	6
R. C. Bagot	Darling River, at Bourke		92	0	- 1			
	Balranald	• •••	39	Э	. 0	101		^
E. Woods	Hadronlin machine m Namostle		7.07	10	3	131	Э	,0
E. Woods	Hydraulic machinery, Newcastle		167	10	3	107	10	
		l			-	167	10	3
`					- 1	4 501		·
•						4,561	0	9
ļ	Commission to Messrs. J. 1	Faurlan 6	ומד וי			20 041	3	0
				•		38,241	-	8
	Do. other Engin	icers		٠.		4,561	0	9
€	Total	•			£	49 909	1	
	, 100at	•••		•	2	42,802	4	5

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY DEPARTMENT.

(MR. R. H. BURNETT, LATE LOCOMOTIVE ENGINEER.)

Ordered by the Legislative Assembly to be printed, 30 January, 1884.

RETURN to an Address of the Honorable the Legislative Assembly of New South Wales, dated 29th January, 1884, That an Address be presented to the Governor, praying that His Excellency will be pleased to cause to be laid upon the Table of this House,—

"Copies of all correspondence, letters, minutes, &c., between the late "Secretary for Works (Mr. Lackey); Mr. Goodchap, Commissioner for "Railways; and Mr. R. H. Burnett, late Locomotive Engineer, which led "to the dismissal of Mr. Burnett."

(Mr. McElhone.)

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RAILWAY DEPARTMENT.

No. 1.

Inspector Turton reporting suspension of Driver Frost, and Minutes thereon.

Memorandum to The Locomotive Overseer.

Government Railways, Locomotive Engineer's Branch,

Bathurst Station, 19 January, 1881. I have to report that this evening, at about 5.35 p.m., fuel-man Antonio Gannoni came to the office and complained that Driver John Frost, with engine No. 88, was impeding the work at coal stage. I went out and spoke to Frost, telling him to go over the turn-table whilst engine No. 49 was turned. He (Frost) got off his engine, came to me, and said he went on the table as the coal-road was clear. I told him he should not have done so, and had no business there until engine No. 49 had turned, as she had "after coaling, &c.," to leave at 6:30 p.m., but should have gone on to the new coal stage road with his

had "after coaling, &c.," to leave at 6:30 p.m., but should have gone on to the new coal stage road with his engine. He told me he would go on to the turn-table road whenever he liked. I said, in reply, I would have none of his impertanence. He then came close up to me with his hand clenched and at his side, and said in a threatening manner, "I will give you something else in a minute." I replied, "If you speak to me in that manner I will suspend you." He repeated the words, and also said, "I will punch your head." I then told him I suspended him for his conduct. He then, still being close up to me, said in a vindictive manner, twice over, "I will stick a knife through your heart." He (Frost) then in defiance of me went on his engine No. 88, and would not come off her when ordered until I sent fuel-men Antonio Gannoni, Andrew Smith, and driver William Green to remove him.

This is the most gross case of insubordination that I have met with, and I would recommend that he be dismissed the service.

he be dismissed the service.

Frost denies the whole of the above statements seriatim, and while claiming that the whole of his statements were to be accepted as absolutely true and without question, did not hesitate, in my presence and in that of Messrs. Scott and Cobb, to assert (pointing to Mr. Turton), "It is all untrue; that man (Turton) has deliberately invented these statements to take away my character."—R.H.B., 9/2/81.

Driver J. Frost to The Locomotive Overseer.

*Should be 19th

Sir,

I was suspended by Mr. Turton after my arrival at Bathurst, on the *18th instant, under the following circumstances, which I most respectfully beg to place before you:—The shunter had just done with me and put me on the turn table and table done with me and put me on the turn-table, and told me to go there, as he wanted another engine out of the shed. The fuel-man ordered me back again, as he said it was Mr. Turton's clerk's orders. In the absence of proper authority I decided to go where the shunter sent me, as I knew he would not have sent me there if he wanted the Rydal engine turned on the table, which engine it is usual for us to make way for, if late, but she was not ready to come on the table, and I could see I could turn and then set back out of the way. I had just got turned half way, when the fuel-man left me and went after Mr. Turton, and he came to me in a most violent manner, and ordered me back off the table, which I did, and the came to me in a most violent manner, and ordered me back off the table, which I did, and the came to me in a most violent manner, and ordered me back off the table, which I did, and the came to me in a most violent manner, and ordered me back off the table, which I did, and the came to me in a most violent manner, and ordered me back off the table, which I did, and the came to me in a most violent manner, and ordered me back off the table, which I did, the came to me in a most violent manner, and ordered me back off the table, which I did, the came to me in a most violent manner, and ordered me back off the table, which I did, the came to me in a most violent manner, and ordered me back off the table, which I did not the came to me in a most violent manner, and ordered me back off the table, which I did not the came to me in a most violent manner, and ordered me back off the table, which I did not the came to me in a most violent manner, and ordered me back off the table, which I did not the came to me in a most violent manner, and ordered me back off the table, which I did not the came to me in a most violent manner, and ordered me back off the table, which I did not the came to me in a most violent manner, and ordered me back off the table, which I did not the came to me in a most violent manner, and ordered me back off the came to me in a most violent manner, and ordered me back off the came to me in a most violent manner, and ordered me back off the came to me in a most violent manner, and ordered me back off the came to me in a most violent manner, and ordered me back off the came to me in a most vi intended doing without Mr. Turton's orders. He then went away in company with his clerk, and after, I suppose, consulting that officer he came back and told me I was under the influence of drink, and that I was suspended, and in a furious manner ordered me off the engine. I told him I would as soon as I put the engine in the shed, thinking by that time he would be cooled down, and that he would allow me to speak to him; but his temper was so violent that he ordered the fuel-men to pull me off at once, which they proceeded to do, and would have done had I shown any opposition. I think this is very harsh treatment, as I was not under the influence of drink, nor had I tasted any for three days previously; treatment, as I was not under the influence of drink, nor had I tasted any for times ways providing, if Mr. Turton had only listened to what I had to say, instead of allowing himself to be earwigged by his clerk, he would have seen that what I was doing was for the best; but as I cannot explain myself properly in writing, I earnestly request that you will grant me an investigation, and oblige Your obedient servant,

JOHN FROST.

J. Frost asks that Traffic Inspector Hornidge, Station-master Bonamy, and Shunters Thomas Wills and John Emmett be asked to give evidence.-J.C.

Driver Frost says: -Mr. Turton left the coal stage after he (Frost) had come off his engine to speak to him, and disappeared in the direction of the office, and then returned in a few minutes and suspended

him, saying "Come off that engine—you are the worse for liquor—you are drunk."

When he (Frost) got off the engine in the first instance, driver Frost says he pointed out the place from which he had moved his engine when the shunter left him; Mr. Turton would not listen to him; he (Mr. Turton) ordered him on his engine and to go to the other side of the turn-table.

Statements made by driver Frost to me on 19/2/81.—R.H.B., 19/2/81.

Thomas Wilson states:—When you first came out and spoke to Frost last night we were on the turn-table. You said, "John, you must get over the table and let this engine get turned to get away." He (Frost) did not go over the turn-table, but came back towards the coal stage, disobeying your instructions. He then got off the engine and walked up to you. I saw him put his face up to you in an offensive manner, but could not hear the conversation, the distance was too great; he (Frost) afterwards got on the engine and I heard you tell him to get off the engine 88; he replied, "What have I to come off for?—what have I done?

and refused to come down.—I heard you telling two men to get up and put him off; on their getting up for that purpose, he (Frost) told them the first man that put a hand on him he would make it a dear day's work for him, or words to that effect; when you told Frost to come off the engine as it was leaving the turntable for the coal stage pit I saw him look down in a scowling manner at you. Frost would not leave the engine until Green got up and took charge.

> THOMAS WILSON. 20/1/81.

Thomas Wilson, J. Frost's fireman, states that the remarks crossed out above were inserted by you and he refuses to acknowledge them, although he cannot explain to me how it was he signed the above statement.—J.C., 24/1/81. Mr. Turton.

Thomas Wilson's corrected Statement.

Thomas Wilson states: - When you first came out and spoke to Frost last night we were on the turn-table. You said, "John, you must get over the table and let this engine get turned to get away." He did not go over the turn-table but came back towards the coal-stage, disobeying your instructions. He then got off the engine and walked up to you. I saw him put his face up to you in an offensive manner, then got off the engine and walked up to you. I saw nim put his race up to you in an offensive manner, but could not hear the conversation, the distance was too great. He afterwards got on the engine, and I heard you tell him to get off the engine 88. He replied, "What have I to come off for—what have I done?" and refused to come down; I heard you telling two men to get up and put him off; on their getting up for that purpose he (Frost) told them the first man that put a hand on him he would make it a dear day's work for him, or words to that effect; when you tell Frost to come off his engine, as it was leaving the turn-table for the coal-stage pit, I saw him look down in a scowling manner at you. Frost would not leave the engine till Green got up and took charge.

THOMAS WILSON,

20/1/81.

Fireman Wilson to The Locomotive Overseer.

Dear Sir, January 21, 1881. I believe John Frost's statement of 19th instant to be correct, and I may add that I heard Mr. Turton order him (Frost) off his engine, and he said, "What have I done, or what have I said?" Mr. Turton said, "Come off at once, or I will have you put off"; then he sent two fuel-men on the engine for that purpose, but he did not get off until Mr. Turton sent for driver Green to take charge; then he (Frost) got down, and driver Green and I put the engine in the shed. The second time that Mr. Turton came he seemed very violent, and Frost told him that if he waited till he had filled up his boiler he would come down and talk to him, but Mr. Turton ordered him off at once. After we had turned our engine we waited for fully 5 minutes before the Rydal engine came on the pit, as it was shunting on the main line as we saw them go off the main line for water.

THOMAS WILSON, Fireman.

Handed to me by John Frost.—J.C., 21/2/82.

No. 2.

Memo. to Locomotive Overseer.

Sir, Sydney, 25 January, 1881. In accordance with your instructions I proceeded to Bathurst to inquire into Mr. Turton's

report, charging driver John Frost with gross insubordination on the evening of the above date. I have also examined and taken the evidence of all the persons who have any knowledge of the case. It is quite clear that Frost is to blame for not obeying Mr. Turton's orders (given through fuelman Gannoni) not to go on the turn-table until after the Rydal engine had turned; and although it appears that Mr. Turton had not given direct orders about the proper times of the Rydal and Sydney engines turning, &c., it has been the custom for some time (as Frost admits) for the Sydney engine to give place to the Rydal engine, and Frost should have waited, and if the Rydal engine was not ready, could easily have pointed it out to Mr. Turton (whose office is only a few yards off), and got his permission to turn his engine.

turn his engine.

Frost no doubt thought he would have had sufficient time to have turned his engine, and got clear before the Rydal engine was ready; he had just come from Sydney (145 miles). The Rydal engine does not leave until 6:30 p.m., the squabble occurring at 5:35 p.m.; Frost appears to have made another mistake; he states he was sent on to the turn-table by the shunter, he obeyed the shunter, but when told by the fuel-man not to go on the table he refused to obey him.

Mr. Turton denies charging Frost with being drunk, and stated to me that Frost was perfectly

sober.

The evidence does not corroborate the statement made by Mr. Turton that Frost used the very improper language and threats named, as none of the witnesses were near enough to hear what was said by Mr. Turton or Frost to each other, and whether Frost did use the language complained of, or not, must,

I think, remain an open question.

There is no proof that Mr. Turton was violent in his language or behaviour to Frost; no doubt he was excited, and was justified in suspending Frost for insubordination and for making use of some expressions which Frost, who was, I expect, as much excited as Mr. Turton, perhaps now feels sorry for; but it is very questionable whether Mr. Turton acted rightly or judiciously in ordering the fuel-man to pull Frost off his engine.

John Frost has been a first-class driver for upwards of seventeen years; he is rather a shorttempered man, but I have never heard of his making use of any bad or threatening language to any one.

I think that taking all the circumstances of the case, if Frost be reprimanded and allowed to

resume duty it will meet the case.

I would also suggest that Mr. Turton be instructed to give his orders direct, or through his day and night shed inspectors, and that Mr. Clark, his timekeeper, confine himself strictly to his office duties. JOHN COBB.

After reading the evidence carefully through I think John Frost is to blame in disregarding orders, and I think that if he is kept suspended without pay until the 28th instant it will be sufficient punishment. No doubt both Mr. Turton and John Frost were excited at the time, and I think Mr. Turton should have allowed John Frost to have put his engine away in the shed, and then sent for him to come to his office for any instructions he had to give him. It is also necessary for the working of the Department that Mr. Cobb's suggestion with respect to Mr. Clark be carried out.-W. Scott, 26/1/81. Locomotive Engineer.

Minute of Locomotive Engineer.

Having given full consideration to this case, and having carefully compared and weighed the evidence, I am quite satisfied that Driver Frost's version of the affair is wholly and absolutely disproved, and in view of Mr. Turton's report, and of the position taken up by Driver Frost at the interview with him (on the 9th inst.) as recorded in my minute of 9/2/81, I direct that he be dismissed the service.—

B.H.B. 29/2/21 Mr. Scott R.H.B., 22/2/81. Mr. Scott.

Noted and driver J. Frost informed.—J.C., 23/2/81.

As I could not concur in these recommendations, I directed, on the 28/1/81, a meeting of Inspector

Turton and Driver Frost to take place at my office on the earliest opportunity.

The opening of the extensions to Wellington and Albury and the subsequent work involved by them, prevented a day being fixed before the 9th inst. I then fully considered the evidence and the personal explanations of both Driver Frost and Mr. Turton, and was satisfied that Frost's statements could not be accepted as true.

I informed him thereof, and that he would have to remain suspended until I had had time to weigh

the case in the hope of seeing my way to allow him to remain in the service.

Further consideration, and his reiteration to me on Saturday, the 19th inst., of the truthfulness of his version of the case, and of the charge he made against Mr. Turton as recorded in my minute of 9/2/81, and which he has up to the last not thought fit to withdraw, left me no course open, I regret to say, but to direct his dismissal as per my minute of 22/2/81.—R.H.B., 23/2/81.

[Enclosure.]

Enclosure.]

By Mr. Cobb: Thomas Wilson, fireman to John Frost (No. 88) on the 19th instant:—On arrival at Bathurst our engine was turned into the turn-table siding; the fuel-man, Gannoni, told driver John Frost that he would have to get out of the road, and let the Rydal engine turn first, as that engine had the preference. Frost said to Gannoni, "What have you got to do with it, and by whose orders is it?" I think he replied, "By Mr. Clark's orders"; we went on to the turn-table, and Gannoni went to the office, and then Mr. Turton came up to us and said, "John, you will have to set back over the table, and allow the Rydal engine to turn." Frost got off the engine and went to speak to Mr. Turton, but I could not hear what was said, but saw Frost pointing out which road he wanted to go on. I did not hear Frost make use of any threat or improper language to Mr. Turton, neither did I hear Mr. Turton use any improper language to him; after they had spoken together a few minutes, Mr. Turton went away and then came back again and told Frost that he would have to get off the engine at once, or else he would have some men sent to put him off. Frost did not reply immediately, but subsequently asked Mr. Turton "What have I done or said"; Mr. Turton kept repeating—"You will have to come off"; Frost said, "I will come off when I have filled the boiler"; he then ordered the two fuel-men to pull him off, and sent for driver Green to take charge of his engine; when the fuel-men got on our engine Frost said to them, "The first man that lays a hand on me I will make it a dear day's work for him," or words to that effect, and then got off his engine of his own accord. Frost was perfectly sober at the time; the time which elapsed between Mr. Turton's first coming to the engine, and when he went away and returned again would be about 5 minutes; the Rydal engine had turned and there was no delay caused by our engine.

THOMAS WILSON.

Bathurst, 22 January, 1881. Bathurst, 22 January, 1881.

By Mr. Cobb: Mr. Wm. Clark (clerk to Mr. Turton, Locomotive Inspector, Bathurst), examined:—I gave no instructions to the fuel-man respecting John Frost or his engine, neither did I see Frost at all that evening. I know nothing whatever about the altercation between Mr. Turton and Frost; the statement that I went away in company with Mr. Turton is incorrect, and that he consulted with me is also incorrect. I knew nothing about Frost being ordered off his engine by Mr. Turton until after Mr. Turton came to the office at 6·10 p.m.; I had not seen Mr. Turton for half an hour previously to this; this is all I know of the matter.

By John Frost: I was in the bath-room when this occurred.

By Mr. Cobb: Andrew Smith, fuel-man at Bathurst, examined:—I heard Mr. Turton order Frost off his engine. I heard Frost say, "What is your motive for putting me off my engine?" Mr. Turton then told me to get up and put him off; I got on the engine and told Frost he had better get down; he said he would get down as soon as he had done his work; he (Frost) made use of no threat to Mr. Turton in my presence, but he said when I was getting on the step of the engine to put him off, that the first man that put his hands on him he would knock his brains out; he did not get off his engine until driver Green got on, then Frost got off of his own accord; Frost's fireman was standing between me and Frost, and must have heard the threat which Frost made—that he would knock the brains out of the first man who touched him; Frost was not under the influence of drink as far as I could see or judge. Wilson says "A driver Green got on, then Frost got off of his own accord; dearday's work," have heard the threat which Frost made—that he would knock or words to that not under the influence of drink as far as I could see or judge. effect.

A. SMITH.

By Mr. Cobb: Autonio Gamoni, head fuel-man at Bathurst: The passenger engine No. 88, driver J. Frost, was standing on the loop road when I first saw it; he then moved his engine back to get on the turn-table. I told Frost to stop so that the Rydal engine could come in, get turned, and coaled first; Frost told me in reply to mind my own business. The first instructions I had respecting the Rydal engine coaling and having the preference over the passenger engine, were from Mr. Clark about a month ago. I went and complained to Mr. Turton that Frost had taken his engine on to the turn-table, and asked which engine was to have the preference. Mr. Turton informed me that the Rydal engine was to have the preference; I never received any instructions from Mr. Turton before this that the Rydal engine was to have the preference; while I have been employed here (five months) the Rydal engine has invariably had the preference, except on one occasion when the passenger engine was turned first. I did not hear Frost make use of any threat to Mr. Turton. Mr. Turton ordered me and Smith (the fuel-man) to go on the engine and put Frost off; when I got on Frost's engine he said, "The first man that lays hands on me," and this is all I heard; when Mr. Turton ordered Frost to come off the engine I heard Frost say, "I want to put water in the boiler first;" Green then got on by Mr. Turton's orders and Frost got down of his own accord. Frost appeared to be quite sober at the time.

By Mr. Frost: I had my hand on J. Frost's shoulder when I heard him make use of the words, "The first man that lays hands on me;" this is all I heard; I have received a rule book from Mr. Clark, instructed by Mr. Turton, since this occurrence.

ANTONIO GANNONI says the fireman was between him and Frost, and the preference and the preference over the man at Rethard. The contract of the man at Rethard. The contract of the man at Rethard. The contract of the man at Rethard. The contract of the man at Rethard. The contract of the man at Rethard. The

says the fireman was between him and Frost, whereas Gannoni tell Frost not to go on to the turn-table; I heard Frost say, "By whose orders?" Gannoni replied, "By Mr. Turton's and whereas Gannoni then said, "I will go and see Mr. Turton about it;" Frost said, "All right, you can please yourself about had his hands on mine." Gannoni then said, "I will go above the points and go on to the turn-table and clear my smoke-box and Frost's shoulder: that;" Frost said to me and Gannoni, "I will go above the points and go on to the turn-table and clear my smoke-box and turn, by that time the Rydal engine (No. 49) will have taken water, and the work will be forwarded;" he went on to the

table and turned his engine, and while doing this Gannoni brought the Rydal engine on to the pit, and thus blocked Frost's engine in; the Rydal engine stopped in the pit; the men got coal and raked out the ash-pan; Frost moved his engine off the turn-table up towards the Rydal engine; after Frost had turned his engine I heard Mr. Turton order him to move his engine over to the other side of the table, to allow the Rydal engine to get turned; Frost moved his engine as he was ordered about a minute afterwards; I did not hear Frost make use of any threat to Mr. Turton, but he got off his engine and walked towards Mr. Turton, when he charged Frost with being under the influence of drink; Frost replied, "I am not drunk, neither do I drink;" I was then sent by Mr. Turton to tell driver Green to come and take charge of Frost's engine, both Mr. Turton and Frost appeared to me to be out of temper. I heard Mr. Turton order Frost off his engine, and he replied that the time

By Mr. Turton: I heard you tell Frost not to go on No. 88 engine, but he did so in defiance of your orders. I heard you again tell him to come off the engine, which he refused to do, as he said he had charge of that engine.

GEO. WILSON.

By Mr. Cobb: William Green, night driver in charge of Bathurst-shed, examined: I was sent for by Mr. Turton at five minutes to 6 on Wednesday night, the 19th instant, to come to the coal-stage; I then received instructions from Mr. Turton to take charge of engine No. 88, and to put driver J. Frost off; when I got on to the engine driver Frost got off; this is all I know of the matter; when I got on Frost's engine he was there with his fireman and fuel-man, Smith; the other two fuel-men, Gannoni and Wilson, were standing on the coal-stage beside the engine; as far as I could observe I do not think either Mr. Turton or Frost were out of temper. I consider Frost was quite sober.

By Mr. Cobb: Thomas Wills, head night-shunter at Bathurst, examined:—I remember the evening of the 19th instant, when J. Frost arrived with passenger train from Sydney. I cut off the engine from the train and rode on it to the points leading off the main line to the locomotive siding, and turned the engine in for the turn-table road, after this a few minutes elapsed, and then shunter Trives let the Rydal engine on to the turn-table road. I heard Mr. Turton instruct driver Green to take charge of No. 88 engine and put Frost off. I did not hear Frost make use of any threat to Mr. Turton. I consider Mr. Turton was excited. Frost was in his usual temper, as far as I could see, before and after the occurrence. I did not speak to Mr. Turton. I consider Frost was quite sober.

THOS. WILLS.

By Mr. Cobb: John Emmett, night-shunter at Bathurst, examined:—I remember the evening of the 19th instant, when J. Frost arrived from Sydney with the passenger train; I was present at the time, when I heard Mr. Turton order the fuel-men to get on the engine and put driver J. Frost off. I did not hear Frost make use of any threat; I thought Mr. Turton was excited, but I did not think Frost was yehen Frost was on the turn-table he did not block the Rydal engine or cause delay, as that engine was standing taking in water and afterwards coal, and if any delay was caused it was through the altercation between Frost, Mr. Turton, and the fuel-men. Frost, I consider, was perfectly sober. I did not hear Mr. Turton charge Frost with being in liquor. Frost with being in liquor.

JOHN EMMETT.

Mr. Turton, Locomotive Inspector at Bathurst:—I have heard the whole of the foregoing evidence taken, and beg to state that Mr. Clark's evidence is perfecely correct, and that also given by Smith. With reference to Gannoni's evidence, which is all correct except his statements about having his instructions from me respecting the coaling and turning of the Rydal engine; but I believe I have given him instructions, and the custom has been to operate on the Rydal engine first. With reference to the statement made by Wilson, that Frost replied to Mr. Turton' in these words, "I am not drunk, nor do I drink," it is quite correct, but I emphatically deny having accused Frost of being drunk or in liquor. I have read the evidence given by Wilson, and in the main it is quite true, with the above exception. The evidence given by Green is also correct. In reply to the statement made by Thomas Wills that I was excited—I was not excited at all, except that I moved about perhaps a little quicker than usual, but made no expressions to indicate extreme excitement. As driver Frost stood on the turn-table against my orders, and blocked the Rydal engine, he therefore caused delay, and the engine ought to have been out earlier; some of the delay was caused by the altercation. I wish to add that G. Wilson's statement that Frost moved his engine, when ordered, about a minute afterwards is incorrect. The facts are, that after I ordered him to move mention as I ordered him, in the opposite direction. It was then he got off his engine and came to me, and the altercation took place, upon which I suspended him. The paragraphs in statement of fireman Thomas Wilson, taken by me on the 20th instant, and erased by you as having afterwards been insorted by me, were not so, as stated by Wilson, but were his own words in reply to questions put to him by me. His statement was then read over to him in my presence and signed by him as correct. I instructed my clerk, Mr. Clark, to re-write it word for word, and this was done. It was again read over

J. TURTON, 25/1/81.

Bathurst, January 25, 1881. With reference to the statement of Thomas Wilson, fireman to John Frost, in which he says some of the evidence (erased) given by him on the morning of the 20th instant was inserted by you, I beg to state that at the time he (Wilson) signed that statement you were not present, and as he was waiting in the office to sign it before joining his train "No. 8 up," he read over part of his original statement (of which the one referred to is a perfect copy) to me in order to facilitate his getting away, while I wrote out the one sent up. I then read it to him and he signed it; you were present when he gave the Sir

statement at first, and the replies to your questions were put down precisely as given by Wilson to you; this second statement was made out on account of first being interlined.

WILLIAM A. CLARK.

Mr. J. Turton.

By Mr. Cobb: Driver J. Frost: I have heard read the statements made in Mr. Turton's report. I heard the evidence given by all the witnesses and have also had an opportunity of asking each of them questions. In reply I totally deny all the charges brought against me by Mr. Turton, except being ordered off my engine until I had filled my boiler. The statement of fuel-man Smith that I would knock the first man's brains out, &c., &c., is totally incorrect. I deny the statement made by Gannoni that I used the words "the first man that laid hands on me, &c." The evidence given by G. Wilson is correct. The evidence given by W. Green and shunter Thos. Wills is correct. The evidence given by J. Emmett is correct, except that his statement "if any delay was caused it was through the altercation, &c.," but I state that there was no delay caused. I deny that I was told not to go on No. 88 by Mr. Turton, and also that I did not refuse to come off after I had got, on to fill my boiler.

JOHN FROST.

Bathurst, 22 January, 1881. I know nothing of the circumstances which led to the suspension of driver John Frost. He called at my residence as I am informed about 8 p.m. I was out. Shortly after my return, about 9 o'clock, I saw him. He was perfectly sober, and from his appearance and demeanour I had no hesitation in arriving at the conclusion that he had not been drinking; there was not a trace of liquor about him.

M. A. HORNIDGE. Memorandum

Memorandum to Mr. Cobb.

Bathurst Station, 22 January, 1881.
On arrival of down passenger, No. 5, on the 19th instant, the driver (Frost) handed me the staff in the usual way; I am quite positive he was not intoxicated or had the slightest appearance of his having been drinking.

GEO. BONAMY,

Station-master.

February 22, 1881.

Mr. Turton states with reference to driver Frost's statement that he (Mr. Turton) "then went away (in company with his clerk) and after, I suppose, consulting that officer, he came back and told me I was under the influence of drink and that I was suspended." After telling Frost that he was suspended and that he was not to go again on his engine, he doing so in opposition to my orders, I walked to the end and that he was not to go again on his engine, he doing so in opposition to my orders, I walked to the end of the coal stage (a distance of 20 or 30 yards). I then turned round and walked back to him, he having in the meantime moved his engine over the turn-table. I then told him to come off his engine, being determined to have my orders carried out. He then scowled down at me and asked me, two or three times over, why he should come off the engine; I replied, "Come off that engine." While this was going on he was moving his engine over the table towards the coal stage, I accompanying him on foot, and on his stanning. I told him to some off the engine or I would have him not off. As he still refused and on his stopping, I told him to come off the engine, or I would have him put off. As he still refused to come off, it was then I ordered the fuel-men to put him off his engine as reported by me.

No. 3.

Minutes and Reports having reference to further Inquiry made.

WILL the Locomotive Engineer be good enough to let me see the papers in Frost the engine driver's case. I asked to see the papers before anything final was determined, but I hear that Frost has been dismissed. CHAS. A. G., 23/2/81.

Papers herewith. The records do not show any minute from the Commissioner asking to see the papers before anything final was determined.—R.H.B., 23/2/81.—Commissioner.

Driver John Frost to The Commissioner for Railways.

Sir, Sydney, 25 February, 1881 Feeling myself aggrieved, and not being satisfied with the result of the inquiry lately held in my case, I beg therefore, in pursuance of rule 26, to respectfully submit my case for your investigation. Yours, &c.

JÓHN FROST.

Locomotive Engineer.—W. Scott, 25/2/81. The Commissioner.—R.H.B., 25/2/81. I have read the evidence taken in Frost's case, and would like to see Mr. Turton. Will the Locomotive Engineer direct him to call upon me?—Chas. A. G., B.C., 2/3/81. Write, instructing Mr. Turton to report himself here as early as possible.—R.H.B., 3/3/81.

I called at the Commissioner's Office with Mr. Turton at 11.5 to-day. About 11.45* the Commissioner admitted me to his office. I informed him I had brought Mr. Turton in reply to Commissioner's minute of 2/3/81. On my bringing Mr. Turton in, the Commissioner stated that he wanted to ask him some questions in the case of Frost (dismissed the Service), but that there was (about 1145) not sufficient time to do so to-day. After some conversation as to when Inspector Turton could call again, the Commissioner fixed 11 a.m. on Monday, the 7th, for an interview with Mr. Turton.—R.H.B., 5/3/82.

* Mr. Burnett seems to attach importance to small and immaterial circumstances, but he has not quite gathered the facts. I thought Mr. Burnett was aware that I was not at the office at 11 5, when he called. I admitted Mr. Burnett immediately on my arrival. I had been, and was then, engaged on a most important and urgent matter, and as Mr. Burnett had given me no previous intimation of his coming, I informed him "not that there was not time," &c., but that I had not time to go into the matter that day.—Chas. A. G., 15/3/81.

I called at the Commissioner's Office to-day, March 7th, '81, at 11 a.m., as appointed, with Mr. Turton. The Commissioner requested me to see him alone, and the interview lasted about an hour, during which I indicated to the Commissioner the points in the evidence which proved the untruthfulness of which I indicated to the Commissioner the points in the evidence which proved the untruthfulness of Frost's version of the case. The Commissioner having then raised a point in connection with Frost's exclamation "I am not drunk," &c., Mr. Turton was, on my suggestion, called in to give his own explanation to the Commissioner's inquiry, why he (Turton) had not questioned G. Wilson on the 22/1/81 as to the words which, as is *implied* by G. Wilson's evidence, were used by Mr. Turton when he (G. Wilson) states "I did not hear Frost make use of any threat to Mr. Turton, but he got off his engine and walked towards Mr. Turton, when he charged Frost with being under the influence of drink."

Mr. Turton replied in substance that it did not occur to him to ask the question, as he had already stated distinctly that he had never accused Frost of being drunk, or the worse for drink, and that he (Turton) did not anticipate so much importance would be attached to the statement. Mr. Turton then explained that the remark from Frost, "I am not drunk, and don't drink," was an after thought on his (Frost's) part, and was made after the conversation between Frost and himself, on which he (Turton) had suspended him, was completed, and after Frost had walked away several paces, when he (Frost) stopped to Wilson over the distribution of the corridor, and the interview between the Commissioner and myself was brought to a close retired to the corridor, and the interview between the commissioner and myself has brought to about 1.30 by the Commissioner requesting to have additional evidence on the point, as to whether G. Wilson actually heard Mr. Turton accuse Frost of being under the influence of drink, or whether Wilson

heard him.-Сназ. А. G.

Wilson had merely (as I contended was the case) inferred the accusation from the exclamation of Frost "I am not drunk, neither do I drink," for which purpose the Commissioner said he would at once return the papers to me, for me to obtain the additional evidence. I then took occasion to point out to the Commissioner that, as it seemed to me, the evidence was on other points, as well as on this, amply conclusive against Frost without any further evidence, and that to call G. Wilson again, after Frost and others had had time to see the effect of evidence on the point in question, was giving an opportunity, if he were so minded, for G. Wilson to affect the case prejudicially and unfairly to Mr. Turton, by telling a lie on a point on which he could not be refuted (if Mr. Turton's evidence were questioned) except by cross-examination. As the Commissioner still expressed his wish to have further evidence on this point, I stated I would of course, at once, obtain it on the written order of the Commissioner.

R.H.B.

I have given a good deal of consideration to this case, but before arriving finally at a decision on its merits think it desirable that Geo. Wilson, fuel-man, should be asked to say whether he heard Mr. Turton say to Frost, "You are under the influence of drink," and at what time or in what place or position Frost said "I am not drunk, nor do I drink." I shall be glad if the Locomotive Engineer will obtain this information for me.—Chas. A. G., B.C., 7/3/81.

For further evidence and report see my minute of 12/3/81.—R.H.B., 14/3/81.

[Enclosure.]

Further evidence taken before Locomotive Engineer.

Present:

Messrs. Cobb and Turton.

Bathurst, 8 March, 1881.

Messrs. Cobb and Tueton.

Bathurst, 8 March, 1881.

George Wilson called: I have compared the plan marked A with the ground; I saw the engine No. 88 driven by Frost on the evening of the 19th January come in off the main line over the points marked B and C; the shunter (Wills) was with it, and brought the engine from the main line over points C, and placed it on the old coal siding road at D, opposite the ash-pit, between which and the engine I was standing; the driver (Frost) waited there a few minutes until engine No. 93 (pilot engine of Rydal train, No. 1 down goods) moved off the pit towards the engine-shed, clear of point C, when Frost moved his engine over points E, and went on to the turn-table; in the meantime the train engine of the Rydal train (engine No. 49) came from the water-tank and stood over the ash-pit in front of the old coal-stage, and was raked out and coaled gwhile 49 engine was being raked out and coaled Mr. Turton arrived, having been appealed to by Gannoni; I had just completed cleaning out the smoke-box of engine No. 88 when Mr. Turton came close to that engine; I jumped from the end of the tender on to the ground on the coal-stage side; I believe the tender was then partly off the table towards the coal-stage, but I cannot speak positively as to that; after I jumped off the tender of engine S8 I walked to the Rydal engine No. 49, which was still on the pit opposite the coal-stage; I got up and threw some water on the coal on the coal-stage to lay the dust; I then helped to finish coaling that engine; I remained on the coal-stage after that near lamp F, until a few minutes past 6 o'clock, when I went home; I was standing at G when I heard Mr. Turton order Frost "to move his engine over the other side of the table to allow the engine (Rydal, No. 49) to get turned." as stated in my evidence on 22/1/81, If. Turton was standing opposite me on the other side of the rails, at H, and Frost was then on his engine; I was on mine from G (where I jumped off engine 89) to the coal-stage to help to exclamation was made by Frost.

Cross-examined by Mr. Turton:

Are you positive Frost and I were at H when the conversation you have just spoken to took place? Yes.

Are you sure we were not opposite the centre of the ash-pit? .I won't swear you and he were not opposite the ash-pit.

At the time you say you heard myself and Frost making use of the expressions referring to drink were we standing close together? Yes; you were standing close together.

Did you see Frost walk away from me towards his engine at the time his exclamation was made use of? I could not positively swear that he did not walk away.

Re-examined by Locomotive Engineer:

If Mr. Turton and Frost were opposite the ash-pit at the old coal-stage when the conversation took place about the drink how did you hear it when you were at K? I say they did not have the conversation at the pit.

Where had they the conversation about the drink? Between the Rydal engine and engine 88.

What was the charge made by Mr. Turton? When Mr. Turton came to the turn-table and spoke to Frost, his first words were:—"You had better go over the table and let the Rydal engine turn," or words to that effect.

What was the next remark of Mr. Turton? They (that is Mr. Turton and Frost) stopped about a minute. (After a pause) I have nothing more to say on it.

What was the next remark of Mr. Turton? They (that is Mr. Turton and Frost) stopped about a minute. (After a pause.) I have nothing more to say on it.

You did not hear any further conversation? I did not hear any further conversation than what I have stated.

Then I understand you to say that after Mr. Turton had remarked to Frost "You had better go over the table and let the Rydal engine turn," there was a pause in the conversation for about a minute, when Mr. Turton exclaimed :—"I charge you under the influence of drink"? That is right.

Why did you pause in your way from the engine (88) to your work on the coal-stage, while this pause in the conversation between Mr. Turton and Frost took place? I cannot say; there is many a thing stops us there.

What stopped you on this occasion? I cannot say what stopped me.

How long did you stand there? I don't know how long it was.

How long do you think? About half a minute, or perhaps less or more.

What happened then? I have not got any more to say.

What did you see Mr. Turton and Frost do after the exclamation from Frost:—"I am not drunk, neither do I drink"? I did not see any more.

drink ?? I did not see any more.

What did you do then? I walked away towards the Rydal engine No. 49, and began watering the coal as decribed in the beginning of my evidence.

You have stated that you went straight from the place where you stood at K during the conversation between Mr. Turton and Frost, to the coal stage and watered some coal, and then helped to coal the Rydal engine, and that you remained after that near lamp F until you went home soon after 6? That is so.

In your evidence of 22/1/81, you state that after you heard Frost exclaim "I am not drunk, neither do I drink,' I was then sent by Mr. Turton to tell driver Green to come and take charge of Frost's engine."? I was sent off the coal stage

by Mr. Turton. When? After all the conversation was passed. But when-before or after the watering of the coal? But you have stated you remained on the coal stage all the time after you had got upon it, the first time after removing the ashes from engine No. 88? I remember now Mr. Turton telling me to go for driver Green after I had watered and coaled engine No. 49.

Did you see nothing of Frost in the meantime after you had left the spot K? No, not till I came back with Green. got on the stage again, and remained until a few minutes past 6.

GEORGE WILSON.

March 8, 1881.

David King Broderick, fuelman, called by Locomotive Engineer:—I remember engine No. 88, driven by Frost on the evening of January 19th, /81; I remember that engine coming down towards the turn-table; I was waiting to turn her or any engine that came; I believe I had partially turned her when Mr. Turton arrived, and came close up to the turn-table; I had partially completed turning No. 88, when I went to the Rydal engine which was then standing on the pit opposite the coal stage; I got into the pit and raked her out; as I was getting into the pit Mr. Turton, I believe, spoke to me, and told me to make haste and get the engine raked out, so that she could get away; the blower of the engine was on, and made a great noise, so that I could not hear anything that was going on; this engine, No. 49, had moved in on to the pit opposite the coal stage immediately after Frost's engine had gone on to the turn-table.

DAVID K. BRODERICK.

March 8, 1881.

Andrew Smith, fuelman, called by Locomotive Engineer:—I was helping to coal engine No. 49 when she stood on the pit opposite the coal stage; I then heard Mr. Turton's voice in conversation with some one on the other side of the tender, but I could not recognise the voice; it was not the voice of any of the fuelmen—that I am positive of; I could not hear what was said on account of the noise made by the shovelling of the coal, and by the blower which is always on when the ashes are being raked out; the chimney was towards the water-tank; Wilson was assisting me and Gannoni to coal the engine No. 49 when I heard Mr. Turton's voice in conversation with some one; Wilson was at the trailing end of the

ANDREW SMITH.

March 8, 1881.

Antonio Gannoni, fuelman, called by Locomotive Engineer:—I assisted in coaling engine 49 on the pit on the evening of the 19th January; Wilson assisted Smith and me; he (Wilson) worked at the trailing end of the tender, which was towards the turn-table; when I commenced to coal I happened to knock a can (a tea-can) off the side of the tender on to the foot-plate, and I stooped to pick it up, when I saw Mr. Turton on the other side of the tender; it was a mere glance of him between the fire-box and the front of the tender, as I stooped forward to pick up the can; I did not hear any conversation on account of the poise of the shovels and the blower account of the noise of the shovels and the blower.

ANTONIO GANNONI.

Bathurst, 8 March, 1881.

HAVING heard the evidence of fuelman George Wilson, taken by the Locomotive Engineer to-day, I have to state that from his manner of giving his evidence, his hesitation, and the way he contradicted himself on so many points, I consider it was most unsatisfactory; and there is no doubt in my mind that he has made several misstatements, and he appeared to me to be determined to stick to them.

JOHN COBB.

Bathurst, 8 March, 1881.

I HAVE to state that the spot marked + is that on which the conversation between myself and driver, John Frost—when he exclaimed "I am not drunk, nor I don't drink,"—took place, and the engine No. 49 at that time stood with the funnel towards the water-tank, with the ash-pan about its full length over the end of ash-pit, and the trailing end of tender at about the middle of the pit; the exclamation, "I am not drunk, nor I don't drink," was made by driver Frost after I had suspended him for the language he had used to me, and after he had walked 4 or 5 yards away from me in the direction of his engine, No. 88; he then turned round and made use of the exclamation without the slightest grounds for making use of the words, from anything I said to him, as previously stated by me.

J. TURTON.

Thomas Wilson, fireman to Frost, called by Locomotive Engineer, on his arrival from Sydney by the 9 a.m. down passenger train, arriving at Bathurst at 5.27 p.m.:—Mr. Turton was standing close to the turn-table on the side near H when he told driver Frost that he would have to set back over the table; when Frost got off to speak to Mr. Turton he went to Mr. Turton, who was standing, to the best of my belief, opposite the engine pit at the coal stage, at the mark +; I was then standing on the foot-plate of the engine, waiting for Frost to return to the engine, these are the facts to the best of my belief; to the best of my belief the engine was standing on the turn-table, and the tender just off towards the coal stage when Mr. Turton returned (after the conversation between him and Frost) and ordered Frost to come off his engine, but I would not be positive the engine was not at the other side of the table. not be positive the engine was not at the other side of the table.

THOMAS WILSON.

In accordance with the request of the Locomotive Engineer I here state the facts before referred to by me, in the order in which they occurred:—When I first spoke to Frost, and told him to go over the turn-table, I stood at H, and his engine 88, stood on the turn-table as marked in red on sketch. I immediately afterwards walked towards engine 49, which was standing on the ash-pit in front of old coal stage, to expedite the work, and seeing fuelman David Broderick in the act of getting under engine 49 to rake out the ashes, I told him to look sharp and get her done, so that she could get away; I then stepped back from the side of the engine and stood at +, and on looking towards the turn-table saw that driver Frost had disobeyed my order and had brought engine 88 towards the coal-stage, the tender being off and clear of the table; he got off his engine, leaving her in that position, and walked to me at +; it was then and there he made use of the expressions to me for which I suspended him; he then walked a few paces from me in the direction of engine 88, and turning round exclaimed, "I am not drunk, nor I don't drink"; he then turned and went towards his engine; I then, thinking that he intended to disregard my suspension of him, called after him from where I was standing at +, and ordered him not to get on his engine, as he still continued going to her and got on the step, while I still remained at +; being now convinced he intended to disregard my suspension of him, and being for the moment uncertain what further steps to take, I walked round the coal stage to J, and immediately retraced my steps and walked up to Frost's engine, which I found he had moved in the meantime over the table to the dead road at M; in the meantime engine 49, that had been standing on the ash-pit, was moved on to the turn-table, and after being turned was taken right away; being determined to have my orders obeyed, I there and then told him (Frost) to get off the engine; he then, after a slight pause, asked

asked what he should get off for, at the same time moving his engine over the turn-table towards the coal stage; I then followed up alongside the engine; as Frost continued to move along the front of the coal stage to the ash-pit I followed on foot, repeating my order and telling him I would have him put off if he did not come; as he still refused to come off, saying he had charge of the engine, I ordered fuelmen Andrew Smith and Antonio Gannoni to get on the engine and put him off, the engine being then standing on the ash-pit; as he (Frost) still refused to get off the engine after Smith and Gannoni got up to put him off, I sent fuelman Geo. Wilson, who appeared to come from the coal stage, for driver Wm. Green, who came and was told by me to take charge of the engine No. 88, which he did; Frost then got off.

J. TURTON 8/3/81.

Mr. Turton to state why no reference is made in his report of 19/1/81 to the exclamation of Frost, "I am not drunk,

9/3/81.

I made no reference to Frost's exclamation, "I am not drunk, nor I don't drink," as I attached no importance to the words; I did not even condescend to reply to him when he made use of them. It was not until next morning, and after I had sent in my report, that I was informed by inspector Hornidge, on my mentioning having suspended Frost, that Frost had been to him on the previous night, about 9 p.m., or about three hours after I had suspended him, and asked for his (Mr. Hornidge's opinion as to whether he (Frost) was drunk or in liquor; and stated I had charged him with being so. I expressed my surprise that Frost should make such a statement as I had not so charged him, he being, in my opinion, perfectly sober when suspended by me.

J. TURTON, 9/3/81.

Minute of Locomotive Engineer on evidence taken.

With reference to the further evidence asked for in the Commissioner's Minute of 7/3/81, in the matter of Frost's appeal of 25/2/81, against his dismissal from the Service, I have to report that I proceeded the same evening to Bathurst, and took further evidence from G. Wilson, in the presence of Messrs. Cobb and Turton, and now forward the same to the Commissioner, together with that of D. K. Broderick, Andrew Smith, Antonio Gannoni, and Thomas Wilson, as well as that of Inspector Turton, all bearing on the points in question.

I also forward Mr. Cobb's report on the behaviour of G. Wilson under cross-examination, together with a detailed statement by Mr. Turton, giving, at my request, each incident from the moment of his first

speaking to Frost up to the time of Frost's removal from his engine.

In forwarding G. Wilson's evidence, I may remark that although he has stated that he heard Mr. Turton accuse Frost of being under the influence (in these words, as he states, "I charge you under the influence of drink"), I regard his evidence on this point as utterly worthless, as will be at once seen by his contradictions of himself under cross-examination. At the same time his evidence on the main supports that of Mr. Turton on several important points, and notably on that one as to when the reference to drink was made, thus confirming the previous proof of Frost having told a lie which he says (as he does in his report of 20/1/81), "He (Mr. Turton) then," i.e., after ordering him (Frost) to set back off the turntable, "went away in company with sclerk, and after, I suppose, consulting that officer" (a gratuitous of importance on Frost's part as the clerk, and are proceed that he had no know piece of impertinence on Frost's part, as the clerk was not present, and has proved that he had no know-ledge of the events until after they were past) "he (Mr. Turton) came back and told me I was under the

ledge of the events until after they were past) "he (Mr. Turton) came back and told me I was under the influence of drink, and that I was suspended, and in a furious manner ordered me off my engine."

G. Wilson, on the other hand, distinctly affirms that the exclamation of Frost, "I am not drunk, neither do I drink," was made when Mr. Turton had arrived for the first time on the ground, where he remained, as G. Wilson says, in his (Wilson's) sight all the time, and had just told Frost to move his engine over the other side of the table to allow the Rydal Engine (No. 49) to get turned, thus confirming, as I have said before, Mr. Turton's statement that Frost's exclamation was prior to his (Mr. Turton) coming the second time—after his short absence in his walk past the end of the coal stage and back—to insist on his

already given order of suspension of Frost being obeyed.

The justice of my decision in this case, in dismissing Frost, not only for gross insubordination but for lying and making a baseless charge against his superior officer, in his (Frost's) endeavour to screen himself from the consequences of his disgraceful conduct, remaining unshaken, I feel compelled, in justice to myself, and from a sense of the responsibility connected with the carrying on of the work of a department in which the lives of the public are involved, to invite, with all respect, the Commissioner's attention to what appears to me to be a matter of grave importance, viz., the serious diversion of my time and attention from technical and other matters pressing for my consideration, and on which the efficiency and safety of the railway depends, in consequence of Frost's appeal having been entertained, notwithstanding the careful consideration I had already given to the matter, and the abundance and force of the evidence against him when I arrived at my decision in the case, and I do so the more especially as it seems to me that the prompt dismissal of appeals in all such cases is absolutely necessary to ensure that prompt obedience of orders, and that respect for authority, without which the traffic of a railway cannot be safely conducted.—R.H.B., 12/3/81.

I regret that owing to my having to deal with several pressing matters which had accumulated during my absence at Bathurst, I have been prevented returning these papers sooner.—R.H.B., 14/3/81.

Commissioner.

Minute of Commissioner.

I understand that this objection was raised to Thomas Wilson's re-examination, not to Geo. Wilson's. I assented to the representation that Thomas Wilson—being Frost's fireman and also with him—might be disposed to favour Frost, but the Locomotive Engineer agreed with me that Geo. Wilson was an impartial witness. I pointed out that his evidence supported Frost's statement of the case, and also Mr. Turton's. Mr. Burnett seemed to agree with me, that it was to be regretted that the point raised whether G. Wilson really did hear Mr. Turton use the words, or had inferred that he used them, from the answer made by Frost, had not been cleared up at the inquiry. The Locomotive Engineer expressed his conviction that further inquiry would elicit the fact, and show the soundness of his belief that G. Wilson did not hear Mr. Turton make the charge, but had inferred he had made it.

The impression left on my mind was that the Locomotive Engineer was in favour of the point being cleared up. Mr. Vernon, who was present at that particular time (he had entered my room for a moment with papers) stated that in all probability Frost's papers would be published, and Mr. Burnett at once said, "I admit that if the papers are to be published and the evidence considered by those who will not said, "I admit that if the papers are to be published and the evidence considered by those who will not minutely examine into it, and weigh it piece by piece, as he had done, the conclusion might be formed that Frost's evidence was supported by Wilson's, and it was important that the point in doubt should be made clear. I mention this because I am rather taken by surprise that Mr. Burnett now urges that he had resisted the examination of G. Wilson. Mr. Burnett expresses himself as quite satisfied that G. Wilson would substantiate his (Mr. Burnett's) belief, that he had not actually heard Mr. Turton charge Frost with being drunk, but had only inferred he had done so from the character of the words used by Frost, apparently, in reply. It is at all times more agreeable to me if any course of action which I propose is concurred in by the officer who is consulted in the matter, and who has to give effect to it, and I was not aware that Mr. Burnett was so greatly opposed, as he now states he was, to the re-examination of Geo. Wilson, but I take occasion to say that if I had been aware of it I should not have felt myself at liberty to concede the point: The evidence of G. Wilson, as then taken, was the most important of any; it would have been conclusive if he had been examined as to when and where Frost made the answer to it would have been conclusive if he had been examined as to when and where Frost made the answer to Turton, in the words "I am not drunk, nor do I drink," and I may now say that this re-examination (which, however, has not resulted as Mr. Burnett anticipated it would result) has resolved the one doubt that was in my mind on the subject, and has enabled me unhesitatingly to arrive at a decision in the case. Chas. A. G., 15/3/81.

Minute of Commissioner.

Driver Frost's appeal from the decision of the Locomotive Engineer.

I have carefully considered this case, and having had before me the additional evidence, which I deemed necessary, must now dismiss the appeal, and sustain the Locomotive Engineer's action in dismissing Frost.

The evidence supports Mr. Turton's statement that when Frost left his engine to speak to him he suspended him, and ordered him not to return to his engine. Mr. Turton's statement of the reason he suspended Frost must be accepted as true, notwithstanding that Frost denies having used the threats of

personal violence which Mr. Turton charges him with having used.

It is unnecessary that I should reply to the concluding portion of Mr. Burnett's minute of 12/3/81, except to say that I do not concur with his views as to what should constitute my action in cases of appeal, nor do I think it necessary to the maintenance of discipline that appeals made to me should

be promptly dismissed. I will dismiss no appeal without inquiring into the merits of the case, if I think inquiry necessary, as I certainly did in the case of Frost.—Chas. A. G., 17/3/81.

I think it right to state here, with I trust the Minister's concurrence, that should Frost at some subsequent time apply to be re-employed in the Locomorphic Branch, I shall feel disposed to favourably entering his application in consideration of his right to the following the same subsequent time apply to be re-employed. entertain his application, in consideration of his nineteen years of, hitherto, faithful service in the Railway Department, but I do not wish this to be communicated to Frost at the present time, nor would I ask the Minister to concur with my recommendation for Frost's re-employment until after the lapse of a considerable time, say from six to twelve months from the date of his dismissal.—Chas. A. G., 17/3/81.

Minute of Secretary for Public Works.

I regret that it becomes necessary in the interests of the Railway Service that I should have to approve of the dismissal of a railway servant who has for so many years performed his work efficiently and satisfactorily. I quite concur in the recommendation of the Commissioner that Frost after a time may be re-employed in the Department.-J.L., 18/3/81.

Write letter to Frost communicating decision, which will be forwarded to Frost through the Then forward these papers to the Locomotive Engineer.—B.C., 18/3/81. Locomotive Engineer.

CHAS. A. G

Mr. Burnett with letter for J. Frost.—D.V., 19/3/81.

Department of Public Works, Railway Branch, Sydney, 11 March, 1881. I am directed to inform you that the Commissioner has had under his consideration the appeal made by you against your dismissal by the Locomotive Engineer, and after causing additional evidence to be taken and giving the whole of the case his best consideration, he has directed me to state that he must dismiss your appeal, and uphold the decision of the Locomotive Engineer in your case.

I am desired to add that the Commissioner regrets that it has become necessary for him, in the

interest of the Railway Service to adopt this course in the case of an old servant of the Department who has for many years performed his work efficiently and satisfactorily.

I have, &c.,
D. VERNON,

No. 4.

Locomotive Engineer, returning Commissioner's Letter addressed to John Frost, and Minutes thereon.

Memorandum to Commissioner.

Locomotive Engineer's Office, Regent-street, Redfern, Sydney, 21 March, 1881. I VENTURE to return the letter addressed to John Frost, accompanying my 81-1,684 (Commissioner's 81-3,682), with the suggestion that that part of it referring to the additional evidence be omitted, it having been, I think, inadvertently inserted in drafting the letter, because, even supposing the Commissioner to be of onining that additional evidence was respected to the supposing the Commissioner to be of onining that additional evidence was respected to the supposing the Commissioner to be of onining that additional evidence was respected to the supposing the Commissioner to be of onining that additional evidence was respected to the supposing the commissioner to be of onining that additional evidence was respected to the supposing the commissioner to be of onining that additional evidence was respected to the supposing the commissioner to be of onining that the supposing the commissioner to be of onining that the supposing the commissioner to be of onining that the supposing the commissioner to be of onining that the supposing the commissioner to be of onining that the supposing the commissioner to be of onining that the supposing the commissioner to be of onining the commissioner to be of onining that the supposing the commissioner to be of onining the commissioner to be of onining that the supposing the commissioner to be of onining the commissioner to be of onining the commissioner to be of onining the commissioner to be of onining the commissioner to be of onining the commissioner to be only the commissioner to be of onining the commissioner to be of onining the commissioner to be of onining the commissioner to be of onining the commissioner to be of onining the commissioner to be of onining the commissioner to be of onining the commissioner to be of onining the commissioner to be of onining the commissioner to be only the commissioner to be only the commissioner that the commissioner to be only the commissioner to be only the sioner to be of opinion that additional evidence was necessary (which I understood from the Commissioner's

remarks to me on the subject, was not, in his opinion, the case, excepting to satisfy, possibly, the judgment of anyone or other of the public who might take a very superficial glance of the evidence as a whole), I venture to express the opinion, that any official statement which might be construed as evidence of their being (even if it did exist) a want of harmony in the judgment of the various officers responsible for the safety and efficiency of the Department, would not tend to increase the respect of the employes of the Department as a whole, or tend to the maintenance of authority and discipline.

On that ground I respectfully venture to suggest the omission of the words I refer to, viz. :-R.H.B.,

"Causing additional evidence to be taken and."

22/3/81.

I wish the letter, as written, to go to Frost, and will ask the Locomotive Engineer to send it to him

without further delay.

I regret to be constantly at variance with Mr. Burnett, but I cannot agree with him in the views he expresses in his minute of the 22nd March. It was my clear opinion that further inquiry was necessary in regard to the intent and meaning of Geo. Wilson's evidence. I attached great importance to that evidence, as I considered him to be an absolutely impartial witness, and I have seen since no reason to doubt either his veracity or impartiality.

It was mainly on Geo. Wilson's evidence that I decided the case against Frost; the second enquiry was, however, extended to a greater length than my reference warranted. If I had known that it was to have been conducted in the way it was, I should have directed that in fairness to Frost he should have been

allowed an opportunity of being present.—C.A.G., 22/3/81.

I shall be glad if Mr. Burnett will return me the papers at once, as the Minister wishes to see them

_C.A.G., 22/3/81.

I return the papers at once, as requested, but as I have not had time in the pressure of important matters to read many of the Commissioner's comments on my minutes, I shall feel obliged by the Commissioner's kindly returning the papers for my perusal as soon as the Minister has done with them.—R.H.B., 22/3/81.

I shall be glad if Mr. Burnett will make time to read my minutes, and return papers with as little

delay as possible, in order that they may be resubmitted to the Minister.—C.A.G., 23/2/81.

Having now read the minutes on this lengthy and vexatious case, I regret to have to record, with all respect to the Commissioner, my dissent from the Commissioner's impressions in regard not only to the matters of fact referred to by the Commissioner, but as to much that relates to my action in the case. being, however, now settled, I need merely say that I shall be glad, in the event of any similar case occurring, if the Commissioner will do me the justice in his minutes—not only sub judice but when I have finally arrived at a decision—of giving me credit for acting, as I have done in this case, in the best interests of the service in the discharge of the responsible duties entrusted to me. Assuring him that after my sixteen years administrative experience in the management of as large bodies of men as the aggregate of the employés in the two engineering branches of these railways taken together, every matter relating not only

to the conduct, but to the rights of the employés in my branch, can be safely left in my hands.

I will merely add that I am satisfied, on ample evidence, that George Wilson bears false witness in saying he heard Mr. Turton accuse Frost of being under the influence of drink.—R.H.B., 25/3/81.

Commissioner.

No. 5.

Mr. J. Frost to The Commissioner for Railways.

3, Holden-street, Redfern, Sydney, March 25, 1881. Sir, I have the honor to acknowledge the receipt of your letter of the 18th inst., intimating that after consideration you must dismiss my appeal against the decision of the Locomotive Engineer in my case. I am deeply sensible of the high compliment paid me by your expressions of regret at being compelled to adopt the above course, after my many years service, and the performance of my work satisfactorily and efficiently, and beg to tender you my most sincere thanks for the same.

I hope these long and meritorious services may be taken into consideration with my earnest appeal to you for re-employment as an engine-driver, which I now most respectfully and earnestly make.

It must be evident that this long service in this work must have incapacitated me for any other work, and I may add that, if I am taken into the railway service again I will take care that no circumstances I have, &c., JOHN FROST. shall arise to cause you to regret my re-employment.

May be re-submitted in six months from the date of Frost's suspension; he was suspended in January Сназ. А. G., 31/3/81. Re-submitted.

Inform Frost that in consideration of his length of service, and good conduct previous to the commission of the offence, which he has now expiated by being deprived of his employment for six months, I have consented to his being reinstated in his position as a first-class engine-driver. Request him to report himself to Locomotive Overseer.—Chas. A. G., 20/7/81.

The Secretary, Railway Department, to Mr. J. Frost.
Department of Public Works, Railway Branch, Sydney, 21 July, 1881. I am directed by the Commissioner to inform you that, in consideration of your length of service, and general good conduct previous to the commission of the offence for which you were removed from the Service, and which has been expiated by being deprived of your employment for six months, he has been pleased to restore you to the position of first-class engine-driver, and I have therefore to request that you will report yourself to the Locomotive Overseer.

I have, &c.,
D. VERNON, Secretary. Forward Forward papers to Locomotive Engineer, who will be good enough to give directions for Frost's tement.—Chas. A. G., 21/7/81. The Loco. Engineer.—D.V., 21/7/81.

In view of the fact that Frost was dismissed the Service, not merely for insubordination in disobeying orders, but for lying, and for bringing a base and groundless charge against his superior officer, unfitting him (Frost) for employment in the Service, and in view also of the fact that his re-employment, without a distinct retraction on his part of, and apology for, the charge, would be fatal to the authority of every officer in this Department, and prejudicial to the efficiency of the Service, and to the safety of the public, I would respectfully submit to the Commissioner the need of Frost being called upon to withdraw in writing the charge he made and for his being directed by the Commissioner to report himself draw, in writing, the charge he made, and for his being directed by the Commissioner to report himself to me as head of this (the Locomotive) Department, as being a first and necessary step prior to any application from him for re-employment being determined.—R.H.B., 25/7/81. Commissioner.

Frost was referred to Locomotive Overseer as his more immediate superior. It was expected that the Locomotive Engineer would give directions to Mr. Scott to re-employ Frost. I must request that he will do so without further delay. I do not concur with Mr. Burnett's views in the matter.—Chas. A. G.,

Locomotive Engineer.

The main facts of the case, briefly stated, are as follows:—
Frost's insubordination, as regards the disobeyment of orders, consisted in telling Inspector Turton, his superior officer, that "he would," contrary to Mr. Turton's orders, "go on the turn-table road whenever he liked," and in his refusing, after his suspension, to come off his engine when ordered to do so by Mr. Turton.

In his (Frost's) version of the case, as given in his written statement of 20/1/81, Frost grossly mis-stated important facts, misrepresenting, amongst other things, that Mr. Turton had been "ear-wigged," as he expressed it, in the matter by his clerk, a gross piece of impertinence without foundation in fact, which has never been applicated to show orders with restanted threats of personal violence, saving to

which has never been apologised for nor withdrawn by Frost.

He accompanied his refusal to obey orders with reiterated threats of personal violence, saying to Mr. Turton, amongst other things of a like nature, and twice over, "I will stick a knife through your heart," and when asked by me, seriatim, as to each of the threats which he undoubtedly made, he (Frost) did not hesitate to assert, in presence of Messrs. Scott and Cobb, and pointing to Mr. Turton, "It is all untrue; that man (Turton) has deliberately invented these statements to take away my character." This charge, which is tantamount to an accusation against his superior officer (Mr. Turton) of untruthfulness and misconduct of the grossest kind, which, if true, would render him (Inspector Turton) utterly unfit for his situation or indeed for any position of trust, has never been, as yet, retracted in any shape by Frost, and situation, or indeed for any position of trust, has never been, as yet, retracted in any shape by Frost, and was officially re-stated by him to me, in my office, a few days before I dismissed him.

In the absence of a distinct retraction of, and apology for, the foregoing on Frost's part, he remains thereby disqualified, as it seems to me, for employment, and his re-employment, without such retraction and apology, would be, as I have said before, fatal to the authority of every officer in the Department, thereby endangering the public safety, and in view of the responsible duty put upon me, as Locomotive Engineer, by the Minister's minute of 10/5/81, deciding that, "The fullest power of appointing, promoting, suspending, and dismissing, should rest in the hands of the Locomotive Engineer." I beg to inform the Commissioner, with much regret, that in the present position of the matter I feel compelled in the meantime to suspend further action in re-appointing Frost until I have had an opportunity of representing the whole case with all the attending consequences, to the Minister by personal tunity of representing the whole case, with all the attending consequences, to the Minister by personal

interview.—R.H.B., 27/7/81. Commissioner.

Minute of the Commissioner for Railways.

Refusal of the Locomotive Engineer to observe the directions of the Commissioner. See minute of $\frac{27}{7}81$ —Frost's re-instatement.

A somewhat similar minute to this, refusing (constructively at all events) to observe my directions, was addressed to me by Mr. Burnett in driver Main's case. On that occasion I requested that he would either observe my instruction or place Mr. Scott in temporary charge of the Department. Mr. Burnett replied that he had not refused to carry out my decision, but on the contrary had observed it. This minute in Frost's case is a positive refusal to observe my instruction, which I have had already to repeat. If Mr. Burnett fails to observe my direction to reinstate Frost, I shall have no alternative but to direct Mr. Scott to reinstate him. The man must be reinstated in accordance with my decision.—Chas. A. G., 28/7/81

In reply I beg to inform the Commissioner that I have nothing to add or withdraw from my minute of 27/7/81.—R.H.B., 29/7/81. Commissioner.

I brought this matter to the Minister's knowledge yesterday, who concurred in the action I proposed to instruct Mr. South to reinstance Front I have instructed Mr. South accordingly. Charles posed, to instruct Mr. Scott to reinstate Frost. I have instructed Mr. Scott accordingly.—Chas. A. G., 29/7/81. I may add that I feel very reluctant to take this step. I do so with great regret; but there is no alternative course, unless I consent to have my directions disobeyed and my authority as Commissioner for Railways set at naught.—Chas. A. G., 29/7/81. The following will be the directions to Mr. Scott:—"It having been decided that Frost, engine-driver, is to be reinstated, the Locomotive Overseer (Mr. Scott) is instructed to reinstate him accordingly.—Chas. A. G., 29/7/81."

Locomotive Engineer to see, B.C., 1/8/81.—Chas. A. G. Seen.—R.H.B., 2/8/81. Commissioner.

No. 6.

Minute Paper from The Locomotive Engineer to The Commissioner for Railways.

Subject-Papers in the case of Driver Frost, dismissed. Department of Public Works, Railway Branch,

Locomotive Engineer's Office, Sydney, July 23, 1881. I SHALL be glad if the Commissioner will be good enough to let me have the papers in the above case. R.H.B.

I require these papers myself. The Locomotive Engineer has, I believe, copies of them, and the originals in that case cannot be required by him.--C.A.G., 26/7/81.

No. 7.

The Locomotive Engineer to The Commissioner for Railways.

Suspension of Mr. Scott.

HAVING been informed by Mr. Scott that he had, contrary to my written instructions to him on 25/7/81, directed John Frost (lately dismissed the service) to resume work, and had sent him out with the 9.45 a.m. train this day to Goulburn, I have to inform the Commissioner that I have suspended Mr. Scott from his position and duties, and will cease to certify for his pay from this date, and recommend that he be called upon to show cause why he should not be dismissed for disobeying my orders.

ROBT. H. BURNETT

[Urgent.]

1/8/81.

Mr. Burnett has not the power to suspend Mr. Scott, who, in reinstating Frost, acted upon my instructions. My intention to give these instructions was previously intimated to Mr. Burnett in my minute of 28/7/81.—Chas. A. G.

Minute of Secretary for Finance and Trade.

The course taken by Mr. Burnett in this case is most irregular. Mr. Scott is an officer appointed by the Governor and Executive Council, and his suspension can only be authorised by the Minister. the absence of Mr. Lackey, and pending his decision, Mr. Scott's suspension (irregularly made) will be removed, and he will resume his duties.—J.W., for the Minister, 1/8/81.

Mr. Burnett is informed that Mr. Scott has been made acquainted with the decision of the

Minister, and has been directed by me to resume his duties at once.—Chas. A. G., 1/8/81.

I have been informed that Mr. Burnett has telegraphed to Goulburn to the officer in charge there (Mr. Proctor) to suspend Frost on his arrival with the 9.45 train. I am at a loss to understand such extraordinary conduct, and can scarcely credit the accuracy of the statement made. If Mr. Burnett, however, has given such a direction he will be good enough to at once withdraw or countermand it. I shall be glad to know, by bearer, the course Mr. Burnett intends to pursue. I trust Mr. Burnett will pause before he brings any further discredit upon the Department by his unseemly conduct.—Chas.

A. G., 1/8/81.

Mr. Scott having—by his being reinstated, on the action of the Commissioner, while he was under suspension by me for disobeying my orders—been virtually placed, as I understand it, in a position of independent authority between me and the locomotive staff, pending the decision of Mr. Secretary Lackey, I beg to inform the Commissioner, with much regret, that, as I feel compelled—for the reasons already given in my minute of 27/7/81—to withhold in the meantime further action on my part in re-employing Frost until I have had an opportunity of representing the whole case, with all the attending consequences, to the Minister by personal interview, I beg to leave it to the Commissioner to give Mr. Scott, direct, any instructions in the matter which the Commissioner may see fit to give in the meantime.—Robt. H.

BURNETT. Commissioner.

With the Minister's concurrence I gave Mr. Scott directions to reinstate Frost. The Locomotive Engineer has taken upon himself the responsibility of reversing my action, and has again suspended Frost.

It will be seen that he treats the Hon. the Treasurer's action in directing Mr. Scott to resume his duties as tantamount to placing him in a position independent of himself, as Locomotive Engineer, and he adds that he leaves it to the Commissioner to give Mr. Scott, direct, any directions in the matter which he may think fit. I must decline to give instructions to Mr. Scott at the risk of their being reversed by the Locomotive Engineer. I consider that, in the interests of the discipline of the department, and of public life and safety (imperilled by the action which Mr. Burnett has taken in this and other cases, and which demonstrated his incapacity for the proper discharge of the duties of his office), he should cease to have control of the Locomotive Branch, and that Mr. Scott should be temporarily placed in charge pending the decision of the Government.—Chas. A. G., 1/8/81.

Minute of Commissioner re reinstatement of Frost.

It is perfectly useless to enter again into the merits of the case against Frost. There would be no finality to these matters if, upon the occurrence of any incident connected with them, the whole question

was required to be rediscussed.

It is sufficient to say that the case against Frost was not in degree, either in the offence itself or its consequences, of the character which Mr. Burnett strives so earnestly to attach to it. There were besides many mitigating circumstances. The man was punished by being dismissed the Service. I have already stated that, had not the Locomotive Engineer taken this course in the first instance, I would not, in view of the provocation Frost received from Mr. Turton, and in consideration of his previous faithful service in the department for nineteen years, have consented to the extreme sentence of dismissal. The case, however, only came before me on appeal. In dealing with it I was actuated by a desire to uphold, in the interests of the discipline of the Service, the decision of the Locomotive Engineer, and I found myself in a position to uphold it, although I could not acquit Mr. Turton of serious blame in the matter, nor Mr. Burnett bigself of injudicious action in the conduct of the inquiry in connection with it. nor Mr. Burnett himself of injudicious action in the conduct of the inquiry in connection with it.

At the same time I expressed my intention to reinstate Frost at the expiration of some interval of time, and the Minister, upon a careful consideration of the whole case, concurred with me in that

resolution.

ion. The Locomotive Engineer was so apprised at the time.

At the expiration of six months I gave directions for Frost's reinstatement. Mr. Burnett declined state him. With the Minister's concurrence I directed Mr. Scott, the locomotive overseer, to to reinstate him. reinstate him. This step was taken as a temporary measure till the Minister could find time to deal with the action of Mr. Burnett in refusing to obey my instruction. Mr. Burnett was informed that this course would be pursued unless he himself gave directions for Frost's reinstatement.

Upon ascertaining that Frost had been, in pursuance of my directions, reinstated by Mr. Scott, the Locomotive Engineer took upon himself the responsibility of suspending Mr. Scott, and recommended his

dismissal.

In this emergency, in the absence of Mr. Lackey, I laid the matter before the Colonial Treasurer, who, after pointing out the irregularity of Mr. Burnett's proceedings, directed that Mr. Scott (who holds his appointment by the authority of the Governor and Executive Council, and can be suspended only by the Minister) should at once resume duty.

It then came to my knowledge that Mr. Burnett had telegraphed to the Locomotive Foreman, at Goulburn, to suspend Frost upon his arrival there with his train. I at once wrote the accompanying minute, asking Mr. Burnett if the statement were true, and directing him, if it were true, to countermand

his instructions for Frost's suspension.

It will be seen that Mr. Burnett does not reply directly to the question put to him, but leaves me to infer that the statement made is correct (I have since ascertained it is correct). He declines to take action for the re-employment of Frost until he has had an interview with the Minister, and treats the Colonial Treasurer's action in reinstating Mr. Scott as tantamount to placing him in a position independent of himself as Locomotive Engineer. Mr. Burnett adds that he leaves me to give Mr. Scott, direct, any instruction which I may deem fit.

I must decline to give instructions to Mr. Scott at the risk of their being reversed by the Locomotive

Engineer.—Chas. A.G., 3/8/81.

The Locomotive Engineer will be good enough to let me know at once whether engine-driver Frost is at work in accordance with my instructions?—Chas. A. G., B.C., 4/8/81.

He is not at work, so far as I am aware, and for the reasons given in my minute of 27/7/81, to which I beg to refer the Commissioner.

The following is a copy of the minute referred to:-

The main facts of this case, briefly stated, are as follows:—

"Frost's insubordination, as regards the disobeyment of orders, consisted in his telling Inspector Turton, his superior officer, that 'he would,' contrary to Mr. Turton's orders, 'go on the turn-table road whenever he liked,' and in his refusing, after his suspension, to come off his engine when ordered to do so by Mr. Turton.

In his (Frost's) version of the case, as given in his written statement of 20/1/81, Frost grossly misstated important facts, misrepresenting amongst other things that Mr. Turton had been 'ear-wigged,' as he expressed it, in the matter by his clerk—a gross piece of impertinence, without foundation in fact, which has never been apologised for, nor withdrawn by Frost.

He accompanied his refusal to obey orders with reiterated threats of personal violence, saying to Mr. Turton, amongst other things of a like nature, and twice over, 'I will stick a knife through your heart'; and when asked by me, seriatim, as to each of the threats which he undoubtedly made, he (Frost) did not hesitate to assert, in presence of Messrs. Scott and Cobb, and pointing to Mr. Turton, 'It is all untrue; that man (Turton) has deliberately invented these statements to take away my character.'

This charge, which is tantamount to an accusation against his superior officer (Mr. Turton) of untruthfulness and misconduct of the grossest kind, which, if true, would render him (Inspector Turton) utterly unfit for his situation, or indeed any position of trust, has never been, as yet, retracted in any shape by Frost, and was officially restated by him to me in my office a few days before I dismissed him.

In the absence of a distinct retraction of, and apology for, the foregoing on Frost's part, he remains thereby disqualified, as it seems to me, for employment; and his re-employment without such retraction and apology would be, as I have said before, fatal to the authority of every officer in the Department, thereby endangering the public safety; and in view of the responsible duty put upon me as Locomotive Engineer by the Minister's minute of 10/5/81, deciding that 'The fullest power of appointing, promoting, suspending, and dismissing should rest in the hands of the Locomotive Engineer,' I beg to inform the Commissioner, with much regret, that in the present position of the matter I feel compelled in the meantime to suspend further action in re-appointing Frost, until I have had an opportunity of representing the whole case, with all the attending consequences, to the Minister by personal interview.—R.H.B., 27/7/81."

Commissioner.—R.H.B., 1.5 p.m., 5/8/81.

Minute of Commissioner.

Notwithstanding the Minister's direction that, pending the settlement of certain questions affecting Mr. Burnett's position, he was to carry out my instructions, he still refuses to do so. Frost is unemployed. I request respectfully that the Minister will let me know at once what I am to do. I recommend that Mr. Burnett be suspended, pending the settlement of the case by the Government. It is impossible to carry on the duties of the Department in the face of this insubordination; and in the interests of public life and safety I recommend the above course.—Chas. A. G., 5/8/81.

Case of Driver Frost. From Locomotive Engineer to The Commissioner.

I have to report that in accordance with the verbal instructions given to me at my personal interview with the Minister yesterday, I have given directions for driver Frost to resume work.—R.H.B.

No. 8.

Memorandum from Locomotive Overseer to Locomotive Engineer.

Government Railways, Locomotive Engineer's Branch,

Redfern Station, August 12, 1881. With respect to the payment of John Frost would you kindly inform me for what time he should be entered on the pay-sheets. I may state that he reported himself to me on the 23rd July ult., as I informed you at the time, and he also reported himself here on each of the following days, 25th, 26th, 27th, 28th, 29th, and 30th July. On 1st inst. he was employed taking a train to Goulburn, but he returned on 2nd inst. as a passenger. He reported himself at my office on 3rd, 4th, and 5th inst., and resumed work as a driver on 6th instant.

W. SCOTT.

Will the Commissioner please say.—R.H.B., 15/8/81. Frost will be paid from the date he first reported himself to Mr. Scott, viz., on the 23rd.—C.A.G., 16/8/81. Mr. Scott to enter on separate sheet.—R.H.B., 22/8/81. Noted.—J.C. (pro W. Scott.)

No. 9.

No. 9.

·Memo. of Locomotive Engineer.

Case of Driver Frost.

Department of Public Works, Railway Branch, Sydney, 19 August, 1881 As I observe by the notice papers that Mr. Abigail has given notice of motion to lay on the table of the House copies of all minutes, papers, or other documents having reference to the case of driver Frost, I shall feel obliged by the Commissioner returning all these papers to me, so that I may have the opportunity of making such further comments upon the annotation and reports of the Commissioner as may seem to me to be necessary, and which I was prevented completing in consequence of the Commissioner requesting me to return these papers to him at once,* before I had been enabled to complete my remarks, as stated in my minutes of 13/5/81 and 25/6/81.—R.H.B.

* I think there must be some mistake here. Mr. Burnett returned Frost's papers in a minute (which I could not but regard as very disrespectful to me) dated 25/3/81. The papers he refers to are the papers in Geo. Wilson's case I think. As far as I am personally concerned I am indifferent to the amount of latitude which Mr. Burnett may take commenting upon my minutes. The courtesies of official intercourse are, however, outraged by Mr. Burnett's insolent minutes, and the time of the public wasted by his senseless contentions. Be good enough to let me have a list of the papers, or the papers themselves, which Mr. Burnett refers to.—C.A.G.

As Mr. Burnett has since been suspended no further time need be wasted—public business can now go on uninterrupted by these vexatious obstructions.—Chas. A. G.

No. 10.

Mr. R. H. Burnett to The Secretary for Public Works.

Sydney, 18 August, 1881. I respectfully beg to ask your attention to the replies reported in the Votes and Proceedings of Parliament (just to hand) as having been given last night in answer to questions relating to my action in driver Frost's case, which answers I respectfully desire to point out are not in full accordance with the facts of the case, and which, in so far as they are not in accordance with the facts, unfairly represent my conduct in the matter.

I therefore feel compelled, in justice to myself, to respectfully address to you this appeal.

The questions and answers, as reported, are as follows:—
Engine-driver Frost:—Mr. Fitzpatrick, for Mr. William Forster, asked the Secretary for Public

(1.) Was John Frost, engine-driver, lately or at any time dismissed by the Locomotive Engineer

or Superintendent, Mr. Burnett?

(2.) Was the dismissal afterwards approved of by the Minister for Works, or by the Government?

(3.) Was Mr. Burnett afterwards ordered to reinstate the person so dismissed?

(4.) Was the same person aftewards reinstated by the Minister, or the Government, against Mr. Burnett's remonstrance?

(5.) If so, under what circumstances and upon what grounds?
(6.) Has Mr. Burnett been, or will he be, called to account for disobedience in the matter?

Mr. Lackey answered, (1.) Yes, in January last. Frost appealed against the decision; but the action of the Locomotive Engineer was upheld by the Commissioner, who, however, decided that in consideration of Frost's previous good character during a period of nineteen years' service he should be restored to his

position after an interval of six months.

(2.) The Secretary for Public Works approved of the action taken by the Commissioner.

(3.) Yes, at the expiration of six months, in accordance with the decision referred to. (4 and 5.) Mr. Burnett at first refused to carry out the direction given to him by the Commissioner, but was informed by the Minister for Works that unless he did so he would be suspended.

(6.) He has been informed that he must observe the instructions given to him, or the Government would have no alternative but to dispense with his services.

The statements in answers 4, 5, and 6, as follows:—"But he was informed by the Minister for Works that unless he did so he would be suspended," and "he has been informed that he must observe the instructions given to him, or the Government would have no alternative but to dispense with his services "—are, $\check{\mathbf{I}}$ must respectfully state, wholly and absolutely untrue.

I am not conscious of ever having refused to carry out any instructions which have been given me

I am not conscious of ever having refused to carry out any instructions which have been given me by competent authority.

The papers show clearly the grounds upon which I delayed to carry out the instructions of the Commissioner in this (driver Frost's) case; but I may here briefly state that I did not consider the From Commissioner's orders in this instance as being of any binding effect, in view of the fact that (1st) the Minister had in his minute of 10/5/81, in reply to my appeal to him in George Wilson's case, decided that "the fullest power of appointing, promoting, suspending, and dismissing should rest in the hands of the approval of driver Frost being re-employed was, as will be seen by the minutes, clearly to take effect to approval of driver Frost being re-employed was, as will be seen by the minutes, clearly to take effect to approval of a considerable time, from (say) six to twelve months from the date of his dismissal."

Frost was dismissed on February 22nd, 1881, and six months from that date would be the 22nd instant, or four days hence. The Commissioner directed Frost's re-employment on July 21st, 1881, or only five months from the date of his dismissal. In view of the fact of the Commissioner having directed his (Frost's) re-employment at the end of only five months from the date of his dismissal, taken in

his (Frost's) re-employment at the end of only five months from the date of his dismissal, taken in conjunction with the authority given to me, on appeal, by the above quoted minute of the Minister, I considered myself fully warranted, and still respectfully submit that I was fully warranted in postponing

action in the matter until (as I stated in my minute to the Commissioner of 27/7/81) I had "had an opportunity of representing the whole case, with all the attending consequences, to the Minister by personal

Having, however, been informed verbally by the Minister, on the occasion of my personal interview with him on the 5th instant, that it was his desire that Frost should be at once re-employed, and it being the duty of every officer to obey the instructions of his Minister as being the ultimate authority in the

Department, I wrote instructions the same day, carrying out the Minister's directions.

No occasion, therefore, has arisen to require the threats which are represented to have been made to me in this case, and neither on the occasion of my interview with the Minister, nor at any time since then has any verbal or written communication been made to me to justify the statements I have above

quoted from yesterday's Votes and Proceedings.

I do not suppose for a moment that the Minister is personally answerable for the mis-statements which those answers contain, owing to his not having had the time or opportunity for comparing them with the facts as recorded in the papers; but as an injustice has been done me, both personally and as Locomotive Engineer, by the statements as they appear in the Votes and Proceedings, and by their having been circulated in the public Press, I respectfully ask the Minister to cause such steps to be taken as are necessary to remove the injustice under which I am placed.

I have, &c., ROBT. H. BURNETT.

Extract from Votes and Proceedings of Legislative Assembly, No. 22.

WEDNESDAY, 10 AUGUST, 1881.

Suspension of Engine-driver: -Mr. Cameron, for Mr. Abigail, asked the Secretary for Public Works,

(1.) Is it true that instructions were given by the Commissioner for Railways to the Locomotive Engineer to reinstate one of the engine-drivers who had been under suspension, and that the Locomotive Engineer refused to carry out the Commissioner's order?

(2.) Is it true that instructions were then given to the Locomotive Overseer to reinstate the driver

referred to?

(3.) Was the Locomotive Overseer suspended from duty by the Locomotive Engineer for obeying the Commissioner's order; if so, what steps do the Government propose taking in the matter? Mr. Lackey answered,

(1.) Yes.(2.) Yes.

(3.) Yes; but as the power of suspending an officer in Mr. Scott's position is not given to the Locomotive Engineer the action taken by him was of no effect, and Mr. Scott at once resumed duty. Subsequent action has been taken which will, it is thought, prevent a similar occurrence in

I PREPARED the reply to the above questions, except as regards the one in *italics*. I did not at that time know what had transpired at the interview which Mr. Burnett had had with the Minister. Mr. Lackey himself wrote the words commencing "subsequent action had been taken, &c.," and he informed me on the following day that Mr. Burnett had been informed that unless he reinstand Frost he would be suspended, and that he must observe the instructions given to him on the Government would have no alternative and that he must observe the instructions given to him, or the Government would have no alternative but to dispense with his services.

Mr. Burnett asserts, in his letter to the Minister of 18th August, 1881, that nothing of this kind transpired at the interview; that, as Mr. Burnett mildly puts it, the Minister only said it was his desire that Frost should be at once re-employed, and therefore he wrote instructions the same day carrying out

The question submitted to the Minister was, whether Mr. Burnett was to observe my instructions, and it is hardly credible that the Minister lost sight of this question, and merely asked as a personal favour to himself (as Mr. Burnett would almost endeavour to imply) that Frost might be re-employed.

There is the statement of the Minister to the contrary, and, in addition thereto, there is Mr.

Burnett's minute to me, written on the day following his interview with the Minister-stating that he was

now prepared to carry out my instructions.

This last would seem to be proof that the Minister had told him that unless he did so the Government would have no alternative but to dispense with his services, and besides what other intimation could be made to Mr. Burnett; no subordinate refusing to obey the instructions of the head of his Department could be allowed to continue in the service.

No. 11.

Minute of Secretary for Public Works directing Mr. Burnett's suspension.

I HAVE only now had time to examine the paper submitted by Mr. Burnett, Locomotive Engineer, in which I find that he designates the answers given by me to questions asked in the Legislative Assembly as wholly and absolutely untrue. In the interview between Mr. Burnett and myself on the 5th instant, I distinctly informed that gentleman that he would have to carry out at all times such directions and instructions as should be given by the Commissioner for Railways, or of course submit to the consequences. The exact words I used may not have been those contained in the Parliamentary reply, but were certainly intended to convey the same meaning. Under any circumstances the language used by Mr. Burnett is such that, for obvious reasons, ought not to be for one moment tolerated. In addition to this, Mr. Burnett's career during his tenure of office has been marked by such unsatisfactory results that I feel the only course open to me is to direct his suspension from the duties of Locomotive Engineer until I shall be enabled to bring his case before the Cabinet. J.L., 24/8/81.

Mr. Burnett to see, and to hand over to Mr. Scott all documents and papers, &c., belonging to the ment. Mr. Scott has been placed in charge of the Locomotive Branch temporarily. I shall be glad if Mr. Burnett will return this paper to me when read.—C.A.G., 25/8/81.

No. 12.

Minute for Executive Council.

Department of Public Works, Sydney, 30 August, 1881. I have the honor to inform His Excellency the Governor and the Executive Council that on the 25th instant I felt it to be my duty to suspend from office Mr. R. H. Burnett, the Locomotive Engineer, under the following circumstances:

A driver of the name of Frost had been dismissed from his employment by Mr. Burnett, and the

Commissioner for Railways, on appeal, sustained Mr. Burnett's action.

The papers were submitted to me, and I concurred in the decision of the Commissioner that, in consideration of Frost's previous good character and long service in the Department, he should be re-employed after some interval of time. It was afterwards decided that this interval should be six months from date of Frost's suspension for the offence for which he was afterwards dismissed.

At the expiration of the period named the Commissioner directed the Locomotive Engineer to reinstate Frost; Mr. Burnett refused to do so until he had an interview with me, and rediscussed the whole case.

With my consent the Commissioner then directed Mr. Scott, the Locomotive Overseer, to reinstate Frost, till I could find time to determine the course to be pursued in consequence of the refusal of the

Locomotive Engineer to observe the Commissioner's directions.

Mr. Burnett was duly advised that Mr. Scott would be directed to reinstate Frost, if he neglected to do so; but upon learning that Mr. Scott had carried out the directions given him, Mr. Burnett took upon himself the responsibility of suspending that officer, and telegraphed to the Inspector at Goulburn—to which place Frost had taken his train—to order him off his engine, and not to employ him again except by his directions.

I was absent from Sydney at the time, and the Commissioner referred the matter to the Colonial Treasurer, who decided that Mr. Scott, who had been improperly suspended, was at once to resume duty,

pending my action.

On my return to Sydney the papers were laid before me, with the recommendation of the see minute of Commissioner, that Mr. Burnett for his conduct in this and other matters should be suspended from office. 5/8/81 on page 14.

While I was considering the matter the Locomotive Engineer solicited an interview, which I granted him, and after he had fully represented his view of the case to me, I informed him that unless he reinstated Frost he would be suspended, and further, that the Government would have no alternative, if he did not carry out the directions he received, but to dispense with his services.

This was on Friday afternoon, the 5th instant; on the following day Mr. Burnett informed the Commissioner for Railways by minute that he was "now" prepared to carry out his instructions.

In reply to a question asked in the House by Mr. Abigail on the 10th instant, I said "that it was true the Locomotive Overseer had been suspended by Mr. Burnett, but that subsequent action had been taken which would it was thought proposed a similar accommence in future.

taken which would, it was thought, prevent a similar occurrence in future.

I was then alluding to the intimation I had made to Mr. Burnett at the interview he had with me, and which I trusted would have the effect of bringing Mr. Burnett to a sense of his duty.

On the 17th instant Mr. W. Forster asked some questions in the matter, to which I replied, giving the particulars of the intimation which I had made to Mr. Burnett at the interview referred to. On the following day, the 18th August Mr. Burnett addressed to me, the accompanying letters in which he gave following day, the 18th August, Mr. Burnett addressed to me the accompanying letter, in which he says see No. 10. that the statements made by me in answer to Mr. Forster's questions, 4, 5, and 6, "were wholly and abso-

Although Mr. Burnett has added that he does not suppose for a moment that the Minister is personally answerable for these replies, I am unable to accept his view of the case.

No one but the Minister could be personally answerable for the replies made in this case, as they conveyed what transpired at an interview which Mr. Burnett had with me alone.

So far as the matter is a directly personal one, I refrain from making any recommendation; but I may say that I am dissatisfied with Mr. Burnett's conduct in several matters affecting the administration of the business of this Branch, and I do not consider that the public interests will be served by his being retained in the position of Locomotive Engineer.

JOHN LACKEY. After careful consideration of the subject herein set forth, on the subject of Mr. Burnett's insubordinate conduct, the Executive Council advise that he be suspended from official duty, and called upon to show cause why he should not be removed from office.—Alex. C. Budge, Clerk of the Council.

Approved.—A.L. Mr. Burnett informed.—A.C.B., 31/8/81.

No. 13.

Mr. R. H. Burnett to The Clerk of Executive Council.

Sir,

Ardross, Fitzroy-street, North Shore, 9 September, 1881.

I have the honor to acknowledge the receipt of your letter of the 31st ultimo, informing me that His Excellency the Governor, with the advice of the Executive Council, had approved of my suspension from official duty, and reconstitute that I would of the Executive Council, had approved of my suspension from official duty, and reconstitute that I would of the Executive Council, had approved of my suspension from official duty, and reconstitute that I would not be adviced from the council of the Executive Council, had approved of my suspension from official duty, and reconstitute that I would not be adviced from the council of the Executive Council of the council of the Executive Council of the council of the council of the Executive Council of the council of the Executive Council of the sion from official duty, and requesting that I would show cause in writing, addressed to you, why I should not be removed from the Public Service for the insubordination referred to in the minute paper laid before the Council by the Honorable the Secretary for Public Works, of which a copy was enclosed to me. In reply, I do myself the honor to state the following circumstances for the consideration of the Executive Council:

1. The appointment for which I was engaged in England, and brought out to fill three years ago, and which I held up to the date of my suspension, is, as I regard it, one of great responsibility, requiring, for the effectual performance of its duties, anxious and incessant care, and the free exercise of extensive powers over those in subordinate positions.

The positions and duties attaching to the office are defined in the letter from the then Honorable Secretary for Public Works (dated February 14, 1878) to the Agent-General, on which letter I was

engaged, and which defines the position as follows:—

"The Cabinet having approved of my (the Minister's) recommendation to obtain from England the services of an engineer to take charge of the Locomotive Department, and to design and supervise the construction of the rolling stock required for the conduct of the traffic on our railways, I have the honor

to request that you will have the goodness to secure an engineer fully competent to undertake the duties and to urge upon you the necessity of securing the services of a first-class gentleman, who has had large practical experience of the special duties of the position."

2. During the whole of the time that I have held the appointment I have been actuated by one desire alone, namely, the strict and faithful performance of the duties which I regarded as devolving upon

desire alone, namely, the strict and faithful performance of the duties which I regarded as devolving upon the Locomotive Engineer, and upon which the safety of the travelling public so greatly depends.

3. Influenced by what I conceived to be so grave a responsibility (a responsibility referred to by the Commissioner for Railways in his Minute Paper to me of 14/2/79, entitled "The position of the Locomotive Engineer and his responsibilities," in the following words: "Mr. Burnett can be in no doubt as to the nature and extent of the services he is required to perform in his professional capacity of engineer, and does not need to be reminded of his responsibilities")—I may have at times unwittingly overstepped the authority pertaining to my office, but I unhesitatingly and respectfully assert that my conduct in such instances was dictated solely by an anxious desire for the safe and efficient conduct of the important branch of the Service over which I had charge.

4. With regard to the case of Driver Frost, referred to in the minute of the Honorable the

4. With regard to the case of Driver Frost, referred to in the minute of the Honorable the Minister, I do not desire—in view of the circumstances stated in that minute—to justify my action in Minister, I do not desire—in view of the circumstances stated in that minute—to justify my action in delaying to carry out the instructions of the Commissioner for Railways for Frost's reinstatement, or for my subsequent suspension of him, or for my suspension of Mr. Scott, because I am now conscious that I exceeded the authority of my office, being misled by my interpretation of the minute of the Honorable the Secretary for Public Works of May 5th last, to the effect that he thought it was desirable that "the fullest power of appointing, promoting, suspending, and dismissing should rest in the hands of the Locomotive Engineer," a minute which I regarded as not only confirming but fortifying the control which had been previously placed in my hands by the Commissioner of Railways in his (above queted) minute-naper been previously placed in my hands by the Commissioner of Railways in his (above quoted) minute-paper of 14/2/79, in reply to my minute to him of 4/2/79, in which (in acknowledging receipt of a minute-

paper) I wrote as follows:—

"As the minute-paper states that each engineer shall have control of his own branch, I shall feel

"As the minute-paper states that each engineer shall have control of his own branch, I shall feel obliged if the Commissioner will, in order to prevent any misunderstanding arising, and with a view to facilitate the despatch of business, favour me with a statement indicating the matters that are left to the control of the Locomotive Engineer to act upon, and settle on his discretion, and what are reserved for

the approval of the Commissioner before being put in force.
"Will the Commissioner be so good also as to define what engagements and positions among the employés of the Locomotive Branch are left to the Locomotive Engineer to make and terminate at his

discretion, and what are reserved for the Commissioner or Minister's approval.

"I need hardly say that while I personally should be glad to be relieved entirely of the duty of dealing with the engagement and removal of all employes in my Department, I believe the best results in the conduct of the business of the Department will be obtained by strengthening, as much as possible, the hands of the Locomotive Engineer, by placing in his control to the fullest extent the power of appointing and removing those under him, and that any weakening of his hands in this respect can only result in

delay in bringing the Department into a satisfactory condition."

5. I desire the Council's permission respectfully to state, in further explanation of my action in Frost's case, with reference to one or two points referred to in the minute of the Hon. the Secretary for Public Works, that I was not aware until after Mr. Scott's suspension, that the Minister had approved of Frost's being reinstated after six months from his suspension, or of his having approved of Mr. Scott's being directed to reinstate him; and I respectfully ask the Council's attention to the minutes and papers in connection with the case, as evidencing the motives by which alone I was actuated in my view of the action which I believed my duties and responsibilities forced upon me.

So far as I may have fallen into error on this point I am open to correction, and recognizing that the control in these matters is practically withdrawn by the reversal of my action, or by the rejection of my recommendations, I fully acknowledge that the control rests with the Commissioner in all matters affecting the Branch over which I had charge.

And I here beg to tender an expression of my regret for whatever I may have done, in pursuing a course which I believed my duties and responsibilities required of me, seemingly wanting in due respect for the Commissioner for Railways, or for anything I may have written, however unintentionally, in a style unbefitting the circumstances in my correspondence with the Commissioner.

6. I sincerely regret that I should have written to the Hon. the Secretary for Public Works my letter of the 18th ultimo. I attempt no justification of it, but I earnestly desire the Council and the Minister to accept my assurance that I wrote it under a complete misapprehension of the remarks of the Hon. the Minister to me on the occasion of my interview with him on the 5th ultimo, and under the strong feeling that my influence over my subordinates had been greatly weakened while my responsibilities still remained.

At the same time I can assure the Minister that I did not for a moment intend my letter to bear, in the slightest degree, the construction which, I sincerely regret to learn, the Hon. the Minister has attached to it, but desired solely to direct the Minister's attention to the papers and minutes in connection with the case, in the belief that their contents, and my motives and action in the matter, had not been fully understood by the Minister at the time when the answers in question were given; and I respectfully desire to state that I believed I had fully guarded myself in my letter from being misunderstood on this point.

I respectfully request the Council and the Hon. the Minister to permit of the letter being now and hereby withdrawn; but if the forms of official procedure render this now practically impossible I trust the letter may be regarded as virtually and to all intents and purposes wholly cancelled.

7. It gives me much regret to learn, from the concluding paragraph of the minute of the Hon. the Minister, that he is dissatisfied with my conduct in several matters affecting the administration of the business of my Branch, but I would fain hope that, having regard to the explanations which I have now given, and to the anxious nature of my duties, I may be exonerated from any wilful disregard, either for constituted authority or for the all important interests of the Public Service.

I have, &c., ROBT. H. BURNETT

M.I.C.E., M.I.M.E.

Laid before the Executive Council on the 13th September, 1881, and referred to the Honorable the Secretary for Public Works.—ALEX. C. BUDGE, Clerk of the Council.

No. 14.

Minute of Secretary for Public Works.

THE Commissioner for Railways will furnish particulars of the instances in which Mr. Burnett has failed to conduct satisfactorily the business of that branch of the Railway Department under his control.

Herewith.—Chas. A.G., 19/9/81. Executive Council.—J.L., 27/9/81. To be forwarded to Mr. Burnett through the Clerk of the Minute forwarded to Mr. Burnett by letter.—A. C. Budge, 28/9/81.

No. 15.

Commissioner's Minute re Mr. Burnett's conduct, &c.

I DESIRE to bring under the attention of the Secretary for Public Works the circumstances attending the appointment of Mr. Burnett as Locomotive Engineer, his conduct since his appointment to the present time, and the instances in which he has failed, in my opinion, to carry into effect the object of his engagement.

2. It is but just that I should state that this representation is not made in consequence of the position in which Mr. Burnett is placed at the present time. Some weeks prior to his suspension from office, and on more than one occasion, I had, the Minister is aware, expressed to him my belief that Mr. Burnett had shown himself to be unfitted for the position he held, and I had also informed Mr. Burnett that the property of the Covernment.

that it was my intention to bring his conduct under the attention of the Government.

3. In now stating the case against Mr. Burnett, it will be necessary, I regret to say, that I should do so at some considerable length. I shall, however, be as brief as the circumstances will admit of, referring the Minister, for this purpose, to the official papers on the various matters treated of, and which have

indeed already received some consideration at his hands.

4. I will first refer to the circumstances which led to the appointment of Mr. Burnett as Locomotive Engineer. Previous to 1878 the administration of the Locomotive Branch had been combined with the duties of the maintenance of the permanent way and works, both divisions being under the charge of the Engineer for Existing Lines, who received his instructions from the Commissioner. The increase of work, consequent upon the extension of the railway lines, required that the combined duties should be divided, and it was decided that the Engineer for Existing Lines should retain charge of the permanent way and works, and another engineer, responsible in like manner to the Commissioner, should be appointed to take charge of the rolling stock, &c. It was determined to obtain from England the services of an engineer for the latter office, and upon the recommendation of Mr. Fowler, C.E. (the Inspecting Engineer), the

Agent-General (Mr. Forster) appointed Mr. R. H. Burnett to the office.

5. The statement of Mr. Burnett's qualifications for the office is given in his application. This discloses that he acquired his knowledge of mechanics in the establishment of Messrs. Beyer, Peacock, & Co., locomotive manufacturers, and that his experience of railway management was gained as Locomotive Superintendent of the Metropolitan Railway. This railway, though it carries a large passenger traffic, is of limited extent, and necessarily could not afford such a wide scope for acquiring an extensive experience of railway management as an official connection with more extended lines, having a general traffic, conducted under varying circumstances and conditions, would give. I mention this because Mr. Burnett, in giving expression to views and opinions upon railway management which differed materially from those held by the old officers of the department, has implied—while denying to those opposed to him (viz., the Secretary, the Engineer for Existing Lines, and the Traffic Manager) the possession of any experience to support

their opinions—that his experience entitles his views to unquestioned acceptance. 6. Mr. Burnett commenced the duties of his office in September, 1878, and from that time to the present his conduct of the business has been marked by opposition to the setablished rules of the Department, impatience of proper control, delay and postponement of important works, and by general inefficiency and want of judgment. That he has been discourteous and offensive in his communications, and insubordinate, is evidenced by the fact that he is now under suspension for this misconduct, and by his admission I shall proceed to establish the other charges which, in the interests of that he has no defence to offer.

the Public Service, I have considered it to be my duty to prefer against him.

7. Mr. Burnett's first contention, shortly after his appointment, was that any recommendation which he might feel compelled to make, with the view of meeting the immediate requirements of the Department, should be carried out without question. This had reference to the action of the Secretary for Public Works (Mr. Sutherland), when he decided that he could not give to Messrs. Beyer, Peacock, & Co., without competition (as recommended by Mr. Burnett), an order for certain engines, and he decided that specifications should be prepared, and tenders invited for these supplies in the usual way. To the request that no time should be lost in preparing specifications for the rolling stock, Mr. Burnett contended that the manner in which he should proceed in the conduct of the business of his Branch should be left to himself, and stated that there were other matters of more pressing importance to engage his immediate attention; he pointed out that, in proportion as his opinions and views as to the mode of proceeding with the business were interfered with, so his responsibilities would be limited; in short, he displayed a combative and controversial spirit, refusing to fall in, without unnecessary discussion, with the views of the Minister, and claiming uncontrolled power over the administration of the business of his Branch

8. These peculiar views having been dispelled, Mr. Burnett was given to understand that he must

9. The next occasion upon which Mr. Burnett's action caused discussion was when it was found some such as inspectors, to positions in his Branch, that, contrary to precedent, he was appointing officers, such as inspectors, to positions in his Branch,

10. Upon being informed by me that I had always reserved these appointments for the approval of the Minister, Mr. Burnett, in a combative spirit, at once reviewed the circumstances under which he

was appointed, his duties and responsibilities, and in a paper, appealing to the Minister, insisted that he should have uncontrolled power in this respect, and questioned the right of the Commissioner to direct

11. Having been set right in this respect, Mr. Burnett then requested that his duties, responsibilities, and powers should be defined. This was done accordingly, by my minute of 14/2/79, and I refer the Minister to this document as evidencing my desire to give Mr. Burnett every reasonable facility for conducting effectively the duties of his office. Mr. Burnett, however, in more than one instance has disregarded these directions. In support of this statement I append the papers in the case of Mr. Husk's appointment, and also in the case of Mr. Churchward. In the former case the papers will, I think, establish that Mr. Burnett improperly dispensed with the services of a competent clerk, who was performing the duties on trusted to him satisfactorily for the numbers of giving applearment to Mr. Husk whom ing the duties entrusted to him satisfactorily, for the purpose of giving employment to Mr. Husk, whom he brought or induced to come from South Australia for this purpose.

12. I beg to draw the Minister's attention to the papers with reference to the American engines; they disclose that Mr. Burnett, at a time when the engine power was far from adequate for the proper conduct of the traffic, declined to accept the responsibility of running these engines (some twelve in number) because the weight on the bogies was less than in the engines of English design. The proposal to abandon these engines seemed to me so monstrous, in the face of the difficulties to be contended with in conducting the traffic, and the fact that they were being used in America and elsewhere, constructed precisely on the same principle, that I accepted the responsibility myself of running them, although I was aware that, if any accident happened which could be, distantly even, attributed to a defect in these engines, I should have the engineer in the witness-box against me for venturing to run them in opposition to his advice. The engines, however, were run, and have continued to run, without accident, from the cause stated, for over two years. They are, without doubt, the most powerful engines on our lines, and have done good service to the Department, and will continue to do good service; whereas if Mr. Burnett's recommendation had been accepted, great loss, inconvenience, and perhaps worse results would have followed in the conduct of the traffic.

13. Another instance of what seems to be either incapacity, or wilful disregard of instructions on the part of Mr. Burnett, is disclosed in the case of the tank engines for the suburban lines. I may premise by stating that, prior to Mr. Burnett taking charge, Mr. Mason had prepared a specification for a tank engine weighing about 29 tons, for working the suburban traffic; the engine was designed to this weight on the ground of economy, as it was considered that such an engine would be sufficiently heavy for the suburban traffic, and, while doing the work would cause much less wear and tear on the rails, &c., than the heavier

engines in use.

14. Shortly after Mr. Burnett's arrival he adopted Mr. Mason's specification, and by his advice Messrs. Beyer, Peacock, & Co. were asked to manufacture six of these engines. Very shortly after the despatch of the order, however, Mr. Burnett requested that action might be stayed by cablegram till the question whether these engines should not be of greater power and weight had been further considered. After considerable discussion between the officers of the Department it was, with some hesitation, agreed that the weight of the engine should be increased to 33 tons, in steam. The following cablegram, prepared by Mr. Burnett, was then forwarded to England:

15. "Six tank engines from Beyer. Substitute, leading dimensions of Isle of Wight engines, 3,450 class, for those in Mason's specification, to have 900 gallons of water and Westinghouse automatic acting on engine wheels in place of steam brake, also screw reversing gear, and sliding fire-doors."

16. Shortly after the arrival of the engines it came to my knowledge that their weight exceeded the maximum weight specified, and as Mr. Burnett had not brought the matter under my attention I called upon him for an explanation. In reply, he admitted that the engines weighed over 40 tons (11 tons in excess of Mr. Mason's engine, and over 7 tons in excess of the increased weight agreed upon). I consider that the interests of the Department have been disregarded in this matter, and that the transaction discloses either incapacity on the part of Mr. Burnett to design the dimensions of parts so that the weight of the whole should not exceed 33 tons, or that he has wilfully ignored the decision arrived at. His omission to make report of the increased weight till his attention was drawn to the metter effords evidence of his to make report of the increased weight till his attention was drawn to the matter affords evidence of his

disregard of his official obligations.

conclusions being challenged.

17. The papers in the case of the tender of engine No. 85 leaving the road at Katoomba affords yet another instance of Mr. Burnett's incapacity or culpable carelessness. In reporting the accident to me Mr. Burnett stated that it did not arise from any defect in the vehicle. I thereupon called upon Mr. Mason to say what defect there was in the road, for it must either have been a defect in the vehicle or some fault in the road that caused the accident. Mr. Mason assured me, however, that there was no fault whatever in the road, that it was absolutely perfect, and that any alteration would cause a defect in it. Mr. Mason fully understood the importance of the matter—the risk there was to the life and safety of the public—and did not report till he had made, personally, a careful inspection of the place. referring Mr. Mason's report to Mr. Burnett, that gentleman again confidently stated that the defect was not in the vehicle, and recommended that guard rails should be placed round the curve where the tender left the road. As this curve had been run over for some fifteen or sixteen years without guard rails, and hundreds of thousands of vehicles, at the lowest computation, had passed over it safely (no other vehicle, save this particular one, having left the road) I did not-in view of the fact also that if guard rails were placed round this curve there would be no justification for their not being placed round all other curves on the line—accept Mr. Burnett's recommendation. I stated that I was altogether dissatisfied with the result of the inquiry, and expressed my opinion that those immediately responsible should have left nothing until the discount of the curve of the c nothing untried to discover the cause of the accident.

18. Two or three months afterwards the same vehicle again left the road at the same spot. Directions were then given by me that the Board appointed to inquire into accidents should investigate the matter, and that, pending inquiry, all drivers should be instructed not to exceed 8 miles an hour in rounding the Mr. Mason again assured me that there was no defect in the road, and that he was quite certain that an examination would show that the accidents were caused by a defect in the working parts of the Mr. Burnett seemed to evince considerable indifference in the matter; he wished to be excused from giving his personal attention to the inquiry, and recommended that his place on the Board should be taken by Mr. Scott. This I declined to sanction; for although I had perfect confidence in Mr. Scott's ability, I felt convinced that the accidents were caused by a defect in the vehicle, and as Mr. Burnett had so confidently denied that this was so, I wished him to be present at the inquiry, to avoid thereafter it

19. Before, however, the Board met, Mr. Burnett wrote me a minute, in which he stated that he had at length discovered that the accidents did arise from a defect in the spring gear of the tender. It was a gross piece of carelessness that the discovery was not made before; life and safety were at stake, and might have been sacrificed, and I consider the circumstances afford no excuse whatever for Mr.

Burnett's neglect of his duties.

20. The papers on the subject of the causes which led to one of the carriages catching fire—resulting in a fatal accident to a passenger (Mr. Burgess)—afford another case against Mr. Burnett's administration. That gentleman, on his first taking charge, while objecting to give precedence to certain work, which the Minister wished carried out speedily, urged that his earliest attention should be given to the wheels and axles of the older engines and carriages; and on the 30th November, 1878, stated that after he had disposed of the specification for locomotives, that would be one of the first matters which would have his attention. When it was discovered that the firing of the carriage was caused by the overweight in the springs bringing the floor of the carriage in contact with the wheels, I put certain questions to Mr. Burnett, the replies to which showed that he had neglected his duty, as it was found that no less than nineteen carriages were subject to the same defect. Mr. Burnett sets up in justification of his claim to be held irresponsible, that these carriages were fitted before he took charge; but in view of the fact (apart from his clear obligation in the matter) that he himself pointed out, over $2\frac{1}{2}$ years previously, that one of his first duties would be to see that all old carriages were properly fitted, I fail to see how he can escape from the responsibility of his neglect. His attention, moreover, had been called by Mr. Scott (some little time previous to the accident) to another carriage which had the like defect, and he was asked by that officer, in writing, to come in and inspect it; he neglected to do so, and must be held, I respectfully submit, inexcusably indifferent to the danger involved. If Mr. Burnett had performed this duty the accident referred to would not have occurred. A perusal of the papers will show that Mr. Burnett strives to cast the blame of this accident on Mr. Scott, the overseer, and that in his communications with me on the subject he is discourteous and offensive.

21. If one or two only of the cases quoted had occurred they could not perhaps be accepted as conclusive proof of Mr. Burnett's unfitness for the office he holds; but I think that, taken together,

they cannot but be considered as affording strong evidence of his incapacity.

22. I must, before leaving this portion of my statement, draw attention to the mischievous results which would have followed my acceptance of the advice which Mr. Burnett, as Locomotive Engineer, offered me on the occasion of a coal-waggen axle breaking on the Great Northern Railway recently. offered me on the occasion of a coal-waggen axle breaking on the Great Northern Kailway recently. The waggen belonged to the Minmi Coal Company, and he advised me to prohibit the running of all waggens, the axles of which were made to the same specification as the one which broke. This practically amounted to my stopping the working of this Company's mine—one of the largest in the Newcastle district—and involved the throwing out of employment of scores of miners, the breaking of commercial engagements, and a serious interruption to the shipping trade of the port. The Law Courts would have held, I think, that this course was taken on wholly insufficient grounds, and the damages that would have been obtained by the aggrieved owners would have made a sensible impression upon the Railway revenue. I have no confidence in the advice which this centleman offers me: and notwithstanding his contention that his confidence in the advice which this gentleman offers me; and, notwithstanding his contention that his experience entitles his views and opinions to unquestioned acceptance, I shall venture to disregard them,

as I have felt it to be my duty in several cases to do.

23. The papers in the case of the workshops at Bathurst, Goulburn, and Penrith disclose the result of Mr. Burnett's unwise interference with the plans adopted for these buildings by the Engineer for Existing When these works were well advanced towards completion, Mr. Burnett stated that the accommodation proposed was inadequate, and the expenditure that had been incurred wasteful. In order to give Mr. Burnett an opportunity of explaining his views and providing better plans, I at once directed that the progress of the work in hand should be stayed. Mr. Burnett, however, although admitting the difficulties under which the Locomotive Department laboured, in consequence of the want of workshops and runningshed accommodation, declined to move in the matter of furnishing plans, until the Engineer for Existing Lines had made a survey of each yard, and furnished him with cross sections. It was pointed out to Mr. Burnett that this would delay the works, and was altogether unnecessary, as a personal visit to each place would show him at once the conformation of the ground, and what sites were available; he persisted in his request, however, and nothing could be done till the surveys, &c., had been made. After considerable and vexatious delay, Mr. Burnett at length furnished me with his plans of the running sheds. I at once forwarded them to Mr. Cowdery, and that officer declares that there is not a single improvement to recommend them. Mr. Burnett's proposal, he states, to run three roads in place of two, as now run, would crowd the sheds too much and make them insufferably hot in summer. He further adds that to effect the alterations proposed, an expenditure of £680, already incurred at Goulburn, and £800 at Bathurst, would be wasted. Mr. Cowdery's report reached me on the 20th ultimo, and as Mr. Burnett was suspended before I had time to forward the papers to him. I sent them on to Mr. Scatt where great experience of the before I had time to forward the papers to him, I sent them on to Mr. Scott, whose great experience of the requirements of workshop and running-shed accommodation would, I wrote, enable him to offer a valuable opinion in regard to the proposed alteration. Mr. Scott entirely agrees with Mr. Cowdery. He says, "Having examined the proposed alterations to the original plans for workshops and running-sheds at Bathurst and Goulburn, I beg to state that I fail to see in them any improvement sufficient to justify the pulling up of the brick foundations, and loss of the timber work already prepared. To crowd three roads into the sheds as proposed would not allow sufficient space for cleaning and washing out engines, and the result of the adoption of such a course would be danger to those employed there. I concur with Mr. Cowdery in that the original plans should be carried out without delay."

24. There has been a waste of most valuable time in the postponement of these works, which, but

for Mr. Burnett's unwise interference, might by this time have been completed and ready for use.

25. A great and unnecessary delay has also taken place in deciding upon the plans of the work-

shops at Eveleigh, for which Mr. Burnett is chiefly responsible.

26. Although Mr. Mason's plans for these shops have been in Mr. Burnett's possession for months, for suggested alterations, I fail to learn, from inquiries I have made, that anything whatever has been done in the matter. When the inconvenience and expense which have resulted from the absence of adequate workshop accommodation are considered, the delay in dealing with the matter is most incomprehensible

27. This paper has extended to such a length that I fear to trespass longer on the Minister's time and attention in further demonstrating the shortcomings and unsatisfactory conduct of Mr. Burnett. I must, however, make brief allusion to his actions in encouraging, on the part of the locomotive drivers, a disregard

disregard of the danger signals, and the rules laid down for the safe working of the traffic. These will be found to be clearly set forth in the papers—

1. In the Katoomba accident (Driver Main.)

2. The accident at Parramatta (Driver Bell.)

3. The Murrumburrah Station case (Driver Heiney.)

4. The Orange Station case (Driver Chicken.)

5. The Staff and Ticket Regulations.

28. In the Katoomba case Mr. Burnett exhausts every argument in endeavouring to exonerate the driver of the engine in running past, without heeding, the danger signals against him. An accident to

the passenger train was the result.

29. Even a summary of the case here would extend this paper to too great a length; but a perusal of the papers will show how injudicious and mischievous, in its results, Mr. Burnett's action in the matter might prove to be. One incident connected with the case may be given, as evidencing that gentleman's utter disregard of official propriety and fair conduct. The engine-driver in fault had been suspended at once by the Locomotive Inspector—the inquiry by the Board followed, and the driver (Main) was consequently on his trial before the Board. Without the authority of the Board, and without any communication with me, Mr. Burnett, in the midst of the investigation, took upon himself to reinstate the driver. The effect which such a procedure was calculated to have upon the discipline of the staff may well be understood. The Board subsequently decided—Mr. Burnett alone dissenting—that the driver was to blame for the accident, and it was my duty, rendered painful and complexing by Mr. Burnett's improper conduct in acquitting and reinstating the man, to reverse the action taken, and punish the man in proportion to his offence. Mr. Burnett, however, refused to give effect to the decision.

30. The views and principles which Mr. Burnett has advocated in the other cases quoted, have not been less mischievous in their tendency to bring about the disorganization of the staff, but I must allow the papers on the subject to speak for themselves. In the case of the staff and ticket regulations he has displayed, as the papers disclose, a singular inability to appreciate the essential merits of the system, and his proposed amendments in the regulations would, if accepted, have involved the sacrifice of the very

feature upon which the safety of the working depended.

There are a number of comparatively minor matters connected with Mr. Burnett's administration of his branch, which might be mentioned as affording additional evidence of his inability to properly conduct it—his treatment of the contractors, the involvement of the Department in actions at law to which, the Crown Law Officers have advised, we had no defence whatever, resulting in our having to pay

the claims in full with costs, &c., &c.

32. A reference to the continual changes which Mr. Burnett has made in his staff will show that he has failed to work amicably with his officers. Gentlemen, who have composed his staff have repeatedly complained to me of his discourteous treatment, and several have been driven to resign their positions owing to his hostile bearing towards them. The names of four of these gentlemen occur to me as I write, owing to his hostile bearing towards them. The names of four of these gentlemen occur to me as I write, viz., Mr. Chambers, Mr. Booth, Mr. King, and Mr. Sutcliffe. In his paper of the 9th September, Mr. Burnett pleads very earnestly for his reinstatement, but what consideration has he shown to the gentlemen I have named? Their desire was to earn their living in the positions which they occupied, and their claim to do so, so long as they performed their duties properly, could not be denied. If they were driven from their employment, undeservedly, by Mr. Burnett's hostility towards them, what claim, I respectfully ask, has Mr. Burnett, who has erred so greatly, to a lenient consideration of his case.

33. Mr. Burnett's relations to heads of branches have been marked by all absence of, and even desire for, apparently, harmonious working. To Mr. Mason, to Mr. Read, the Manager, and to Mr. Vernon he has behaved, the records show, with the greatest discourtesy, and he has written minutes reflecting upon these officers in most improper and offensive terms.

reflecting upon these officers in most improper and offensive terms.

34. Although I have received much provocation at the hands of Mr. Burnett, it has been with no feeling of hostility towards him, but solely from a sense of duty that I have endeavoured to demonstrate his unfitness for the office he holds. I have been careful to advance no case against him which cannot be established, and I can unhesitatingly say that I have coloured no representation which I have felt it to be my duty to make. I respectfully ask the Minister to allow this paper, after Mr. Burnett has been afforded an opportunity of replying to it, to accompany the minute which he may write to His Excellency the Governor and the Executive Council, on the subject.

CHAS. A. GOODCHAP, 19/9/81.

No. 16.

Mr. R. H. Burnett asking for Minute Papers.

Sir,

In acknowledging receipt of your letter of the 27th inst., which was not delivered by post until shortly before noon yesterday, the 29th inst., I have the honor to request that I may be furnished with (say) a couple of copies of the printed document it contains.

I ask this to enable me to reply thereto in the most convenient form for perusal by the Executive

Council. The copy enclosed in your letter is, I observe, required to be returned, I presume intact.

I will, in accordance with your suggestion at our interview to-day, send in as soon as possible a list of the papers which, as I explained, are necessary for me to have in enabling me to reply to the

document in question.

That reply I will prepare and submit with the least possible delay, but I beg to point out that the time allowed, viz., seven days from the date of your letter, the 27th, is, I fear, too short a time to enable me to reply to a document dealing with matters—many of which are stated in a very general way—extending over a period of three years, more especially so in the entire absence of the papers referred to in, and as submitted with, the printed document, as well as of the many others required in connection with . I have, &c.

ROBT. H. BURNETT. P.S.—No doubt the few copies required can be readily struck off from the type as set up, and I can fill in the interlineations which appear in the original.—R.H.B.

Mr.

Mr. R. H. Burnett to The Clerk of the Executive Council.

"Ardross," North Shore, September 30, 1881. With reference to my letter to you of to-day's date, saying I would furnish a list of the papers I require, I have now the honor to request to be furnished with the whole of the papers referred to in the printed document, accompanying your letter of the 27th inst., as having been submitted therewith to the Minister, together with all other papers on which the Commissioner for Railways bases the statements contained in the above document.

As regards the list referred to, I have the honor to request that I may be allowed access to the official records of my office, as well as to my late assistants, to enable me to prepare a list of such additional papers as I may require, in replying to the printed document in question.

I have, &c ROBT. H. BURNETT.

The papers asked for by Mr. Burnett were handed to me on the 5th, and duly forwarded to him. Two copies of the Commissioner's minute were also forwarded.—A.C.B., 6/10/81.

No. 17.

Mr. R. H. Burnett to The Clerk of the Executive Council.

"Ardross," Fitzroy-street, North Shore, 10 October, 1881. In accordance with the intimation contained in your letter of the 6th instant, I have now Sir. the honor to ask to be furnished with the following papers:-

Locomotive Engineer's 78/82 and all papers in connection therewith; Locomotive Engineer's report to the Commissioner of 4/9/78 re office staff;

Locomotive Engineer's 79/96 and all papers in connection;

Locomotive Engineer's 79/328 and all papers in connection;
All papers re the ordering of nine consolidation engines from Baldwin & Co.;
Locomotive Engineer's 79/3,642 and 79/3,933, and all papers in connection;
Minute from Commissioner, directing Locomotive Engineer to proceed to Newcastle re Meaden's complaints, and subsequent papers on subject;

All papers re Huby's transfer;

All papers re Huby's transfer;
Remainder of papers in the case of Mr. King (clerk), suspended;
All papers re application for additional office accommodation;
Also the report referred to in the 17th paragraph of the minute paper of the Commissioner of 19/9/81, in the following words:—"On referring Mr. Mason's report to Mr. Burnett that gentleman again confidently stated that the defect was not in the vehicle," &c.;
Also the paper in which (as is stated in the 18th paragraph) "Mr. Burnett had so confidently denied that this was so," viz., that the accidents were caused by a defect in the vehicle.

I beg again, respectfully, to ask to be allowed access to the records of my office, to enable me to name specifically papers, which I believe, if my memory serves me, bear materially on the subjects referred to in the Commissioner's minute. Amongst others, I refer to the report from the Locomotive Overseer (Mr. Scott) of the discovery of the error in the spring gear of tender No. 85, and the other papers between Mr. Scott and myself relative to this tender, the whole of which papers I have now the honor to apply for.

I beg at the same time to point out that from the day of receipt of the papers applied for in mine of the 30th ultimo, to the end of the 2nd, seven days from the date of your letter of the 27th ultimo, only four clear days, including Sunday, intervene and expire to-morrow.

I therefore respectfully ask the indulgence of the Council in granting me a further extension of time for sending in my reply.

I have, &c., ROBT. H. BURNETT.

Be good enough to have the papers collected as early as possible. If the references given by the Locomotive Engineer's record Nos. be not sufficient to identify papers communicate with Record Clerk in Engineer's Office.—C.A.G., 10/10/81.

The extension of time asked for has been granted.—A.C.B. Papers forwarded to Mr. Burnett,—

A.C.B., 13/10/81.

Mr. R. H. Burnett to The Clerk of the Executive Council.

Sir, Fitzroy-street, North Shore, 13 October, 1881 Referring to my letter of the 10th instant I find I therein quoted, in error, paper No. 79/96 and all papers in connection therewith. The papers I intended to refer to are the whole of the papers in connection with the case of Perry's application for a position at Rydal in 1878-79, for which papers I have now the honor to apply in place of the above. I have, &c ROBT. H. BURNETT.

No. 18.

Mr. R. H. Burnett to The Clerk of the Executive Council.

Fitzroy-street, North Shore, 17 October, 1881. I have the honor to apply for a further extension of time in preparing my reply, and beg at the same time to draw your kind attention to the fact that the papers accompanying your letter of the 13th instant do not include several named by me in mine of the 10th instant. The

The papers to which I refer are :-

(a) The report referred to in the 17th paragraph of the minute paper of the Commissioner of 19/9/81, in the following words:—"On referring Mr. Mason's report to Mr. Burnett that gentleman again confidently stated that the defect was not in the vehicle, &c.

(b) The paper in which (as stated in the 18th paragraph) "Mr. Burnett had so confidently

denied that this was so (viz., that the accidents were caused by a defect in the vehicle).

(c) The remainder of the papers in the case of Mr. King (clerk) suspended. (Whether the (Whether these papers are recorded in the Commissioner's office or otherwise.)

(d) The report from the Locomotive Overseer (Mr. Scott) of the discovery of the error in the

spring gear of tender No. 85. I have therefore the honor to make application again for the foregoing.

I shall be glad at the same time to be supplied with the following: (1.) Memorandum to Mr. Scott in July, 1880, re the sending in of his report for the half-year.

(2.) All papers relative to the appointment of the members of the Board of Inquiry for the South and West lines, together with all papers relating thereto, in connection with the inquiry into the Katoomba accident.

(3.) The remainder of the papers in connection with the re-suspension and subsequent employ-

ment of driver Main.

(4.) All papers re workshops at Penrith, Goulburn, and Bathurst, prior to the date of those forwarded with yours of the 6th instant, including my report to the Commissioner on workshops.

The remainder of the papers in G. Wilson's case.

(6.) The whole of the papers in G. Frost's case.

· I-have, &c ROBT. H. BURNETT.

No. 19.

Mr. R. H. Burnett to The Clerk of the Executive Council.

Sir,

I have the honor to inform you that on referring to the bundle of papers forwarded with your letter of the 6th instant, bearing on paragraphs 27, 28, 29, and 30 of the Commissioner's minute of 19/9/81, I find a large number of papers connected with the Katoomba accident case, including the transcript of proceedings, exhibits, &c., have been omitted.

I have the honor to request that the whole of the papers in the case may be furnished to me.

ROBT. H. BURNETT.

I may add that I have not yet received the papers referred to in my letter of the 17th instant.

No. 20.

Mr. R. H. Burnett to The Clerk of the Executive Council.

Sir,

I have the honor to inform you that I find, with much regret, that I am unable to complete my statement in time to hand it to you to-day as arranged, and therefore I beg the kind indulgence of the It shall be in your hands as early as possible to-morrow.

I have, &c.

ROBT. H. BURNETT.

No. 21.

Mr. R. H. Burnett's reply to Minute of Commissioner for Railways.

I HAVE now the honor to submit, for the consideration of His Excellency the Governor and the Executive Council, the following statement in reply to the minute of the Commissioner for Railways of 19/9/81, addressed to the Honorable the Secretary for Public Works.

I would respectfully ask the indulgence of the Executive Council while I trespass—as I fear I shall be compelled to do-at considerable length upon their time and attention, in replying to a document which traverses the whole period of my connection with the Railway Department, and which, as I think I shall be able to show, does not correctly represent my action in the several matters to which it refers.

As regards the opening statement, by the Commissioner, that the representation contained in his minute is not made, as expressed by the Commissioner, "in consequence of the position in which Mr. Burnett is placed at the present time," it is but just that I should state that it was never intimated to me that the Commissioner had expressed to the Minister some weeks prior to my suspension from office his belief that I had shown myself to be unfitted for the position I held, and I never understood the Combelief that I had shown myself to be unfitted for the position I held, and I never understood the Commissioner to inform me that it was his intention to bring my conduct under the attention of the Government. Moreover, the Commissioner himself certified up to the end of August, that being the end of the last pay period, and only some three weeks prior to my suspension—that my "services had been faithfully performed." I mention these circumstances because I cannot but regret that any complaints which it might have been the intention of the Commissioner to bring against me were not made at the time the events occurred, when I should have been enabled to reply to them with the facility arising from free access to the records of my office, and when the circumstances bearing on each case were fresh in the memory. memory

And here I may be permitted to remark, that the interval between the date of my suspension and the date of the Commissioner's minute was close upon a month, while the document was not submitted for my reply until some ten days later.

I will now proceed to deal with the statements contained in the Commissioner's minute. But in the first place I may perhaps be allowed to say, that whatever opinion the Commissioner may now give expression to in regard to the qualifications I possessed for the office, for which I was selected by the Agent-General, on the recommendation of Mr. John Fowler, C.E., it is evident that the statement of my qualifications, as given in my application for the office, and which, in the fullest and frankest manner, "discloses", (to use the Commissioner's language) my prior connection with Messrs. Beyer, Peacock, and Co., was satisfactory to the Minister for Public Works (the Hon. Mr. Sutherland), for on that gentleman's recommendation my appointment was submitted to and confirmed by the Executive Council.

As regards the Metropolitan Railway, to which the Commissioner refers, it is true that in respect of the length of line actually award by the Company it is of limited extent.

the length of line actually owned by the Company it is of limited extent, but during the greater portion of the eight years I was connected with it it leased and worked other lines in conjunction therewith, amounting to a total of 20 miles. It is not, however, by the mere length of a railway that its importance as a field for experience in railway management and working is to be considered. The traffic developed by the Metropolitan Railway, during my connection with it, was so enormous that its train mileage amounted to no less than 1,600,000 miles per annum, which represents the train service of a line of 420 miles, estimated on the basis of the train miles run on the railways of this Colony in the year 1878, the year in which I took charge—the train miles run on the N.S. Wales railways in that year being only 2,600,000 for a total of 690 miles then in operation.

To conduct the train mileage of 1,600,000, as in the case of the Metropolitan Railway, safely over so limited an extent as 20 miles, requires no little vigilance and knowledge of the most approved principles and appliances in railway working. But in addition to its own local and suburban traffic it was run over by the trains of all the principal Trunk lines having termini in London, viz., the Great Western, the Great Northern, the Midland, the London Chatham and Dover, and the Great Easterneach adding to the difficulties and complexity in working, arising out of their several junctions with the Metropolitan, yet at the same time bringing those officially connected with the latter railway into close official and personal contact with the highest authorities in railway management in the United Kingdom.

In combining on the Metropolitan Railway the duties of Locomotive Superintendent and Engineer of Permanent Way, I had charge of the whole of the Engineering Staff, including mechanics, platelayers, and locomotive men, and that the duties were safely and satisfactorily conducted may be gathered from

the following extract from one of the half-yearly Reports of the Directors:

"Since the first opening of the metropolitan line, 316 million passengers have been carried without the loss of a single life from causes within the Company's control, and the few casualties which have arisen can be traced to no want of precaution, discipline, or mechanical or other contrivances, but to the employment of human agency, and in part to over confidence which automatic contrivances unfortunately produce.

Of the 316 million passengers abovenamed, 250 millions were carried during the eight years I was connected with the railway. I refer to the foregoing as bearing testimony to the non-existence during at least eight years of my railway practice of that "neglect of his duties" which the Commissioner attributes to me.

Although the Commissioner, in the concluding paragraph of his minute, states that he has coloured no representation which he has made against me, yet I think I shall be able to show that he has presented a case against me which cannot be sustained.

In support of this I will proceed to take, seriatim, the various matters referred to by the Commis-

sioner, commencing with paragraph 7.

In that paragraph the Commissioner states:—"Mr. Burnett's first contention, shortly after his In that paragraph the Commissioner states:—"Mr. Burnett's first contention, shortly after his appointment, was that any recommendation which he might feel compelled to make with the view of meeting the immediate requirements of the Department should be carried out without question." By the addition of the words "without question," and by the separation from the context of the words actually used by me, a very different meaning is to be gathered as to what I wrote than my language really warrants. I will presently quote, with the indulgence of the Council, from the document itself; but I would in the first place ask the Council's attention to the date of the paper to which the above inaccurate reference by the Commissioner relates. The date of the paper is November 30, 1878. I call attention to this, because the Commissioner next states in the same paragraph (No. 7):—

"This had reference to the action of the Secretary for Public Works (Mr. Sutherland) when he decided that he could not give to Messrs. Beyer, Peacock, & Co., without competition (as recommended by Mr. Burnett), an order for certain engines, and he decided that specifications should be prepared and

Mr. Burnett), an order for certain engines, and he decided that specifications should be prepared and tenders invited for these supplies in the usual way."

This, as will be seen by the papers themselves, is not in accordance with the facts. I made the recommendation regarding the obtaining of the engines in question in a paper dated September 19, 1878, or more than two months previous to the first-named paper (of November 30), in which I ventured, and as I think not improperly, to offer my suggestion for "meeting the immediate requirements of the Department." By the juxta-position by the Commissioner in one paragraph of two inaccurate references to two different papers, which were written at two distinct and separate dates, the inference naturally to be drawn in that I contended that a recommendation which I had made for the propert gundle of an interest be drawn is, that I contended that a recommendation which I had made for the prompt supply of engines from Messrs. Beyer, Peacock, & Co. should be carried out without question.

The terms of the minute in which I made the recommendation as to the engines speak for themselves in disproof of this, and, as I venture to think, will satisfy the Council that the recommendation was not an unreasonable one under the circumstances. To the paper itself I would respectfully ask the attention of the Council. In it, as will be seen, I stated the numerous and important matters which were then—only some three weeks after I had taken charge—awaiting my attention, and having done so

I proceeded as follows:

"The specification and drawings that exist, bearing on these contracts are not, as it seems to me, in a condition in which I could personally take the responsibility of contracts which involve so large an expenditure of money (about £300,000), and which, as in the case of the rolling-stock, would bind the Government for so long a period as five years. I would recommend therefore that the invitation of the five years' contracts for the rolling stock be postponed, until I shall have had sufficient time to prepare the necessary drawings and specifications, and that separate tenders be obtained in the meantime for such vehicles as may be required from time to time to meet the demands of the traffic, as has been done, I believe, for some time back since the last five years contract for vehicles ceased.

"As

"As regards the locomotives, I am having drawings and revised specifications for the passenger and goods engines (referred to in contracts 1 and 2) prepared with all despatch, with the object of catching, if possible, the next home mail (on the 10th proximo), to enable tenders to be invited in England at the earliest possible date.

"As regards the engines named in contract No. 3, I recommend that the ordering of them be postponed, and in lieu thereof that the number of passenger and goods engines, about to be ordered, be

increased to (say) nine each."

My proposal as to the supply of the engines from Messrs. Beyers, Peacock, & Co. then follows:—
"By a report attached from Mr. Scott, the Locomotive Overseer, it would appear that no time should be lost in ordering the four tank engines named in contract No. 4. As this is a new class of engine, for which there are no drawings, and the working out of which would be tedious without the necessary staff, I recommend that a price be obtained from Messrs. Beyer, Peacock, and Co., and, if satisfactory, that the order be given to them. A specification to indicate to them the exact engine required could readily be drawn up, as these makers already know all the special requirements of this The plan I propose would have the result of insuring our having, without delay, pattern

engines of first-class make, and complete with all the most recent details.

"As the number of engines asked for in this lot is small (viz., four), any apparent saving that might be effected by going to competition would be but slight, and would, I submit, be more than balanced by our having thoroughly reliable engines in the shortest possible time."

And then, after making a few suggestions with reference to extra locomotive boilers required for

the Northern Line, I concluded as follows:

"I make these suggestions from a desire to facilitate the carrying on of the work of the Railway during a period of transition of the Locomotive Department from one head to another, at a time when a more than usual number of important matters have accumulated for decision, while at the same time I am placed at no little disadvantage in taking charge of the Department, by being without the assistance of the office staff, including both clerks and draftsmen, which, under usual circumstances, would have been 'available for my assistance.'

In place, however, of my recommendation being entertained, I was met thus early in my connection with and experience of, the Department with the brief intimation that the proposal that tank engines

should be ordered without tender could not be consented to.

should be ordered without tender could not be consented to.

I am unable, I must confess, to see the unreasonableness of my recommendation under the circumstances. The number of engines proposed to be ordered was small, only four being required, while Messrs. Beyer, Peacock, & Co. were already known, and for many years to the Department, as first-class engine-makers, whose faithful carrying out of the work entrusted to them could be relied upon, while as will be seen from my minute, as quoted above, I proposed that a price should be first obtained from them, and that the order should be given only if the price was "satisfactory." Nor was the proposal so entirely at variance with the practice of the department as the Commissioner's remarks—to the effect that the Minister "decided that specifications should be prepared and tenders invited for these supplies in the usual way"—naturally imply. As will be seen by reference to the official papers, an order had been given by the department some six months before (viz., on March 29/78) for several engines without tender or competition, and further, that a month or two after my proposal was rejected engines without tender or competition, and further, that a month or two after my proposal was rejected (viz., on December 20/78), the department ordered nine engines from the same firm without competition

(viz., on December 20/78), the department ordered nine engines from the same nrm without competition of any kind.

The further statement by the Commissioner in paragraph 7 as follows:—"To the request that no time should be lost in preparing specifications for the locomotives" (or rolling stock, as I believe the Commissioner means) "Mr. Burnett contended that the manner in which he should proceed in the conduct of the business of his Branch should be left to himself," is, I beg to say, incorrect. That there were then "other matters of more pressing importance to engage my immediate attention" was doubtless the case, and, in so far as I may have at any time pointed out that "in proportion as my opinions and views as to the mode of proceeding with the business were interfered with, so my responsibilities would be limited," yet I submit that I did not do so either without occasion, or "in a combative and controversial spirit," or indeed in any way unbefitting the circumstances. While in reply to the Commissioner's concluding remarks in paragraph 7, that "I refused to fall in, without unnecessary discussion, with the views of the Minister, and claimed uncontrolled power over the business of my Branch," I beg to be allowed to say that it cannot be substantiated by the papers, and is, as I submit, at variance with the facts.

In support of this I would respectfully refer the Council to the paper itself. I will, however, for the convenience of the Council, extract a few paragraphs which will, I think, satisfy the Council that my

the convenience of the Council, extract a few paragraphs which will, I think, satisfy the Council that my recommendations were reasonable, and that they were not expressed in language, or style unbefitting the occasion. In the paper in question, dated November 30/78, I wrote as follows:—

"In my 78/992 I offered, briefly, my reasons for suggesting a delay in inserting in yesterday's Gazette the proposed advertisement inviting tenders for the five years' contract for rolling stock. The reasons for these suggestions are now given at length, As pointed out in my 78/241 (September 19th), the number of specifications involved in this case is no less than twenty-two. To prepare, even a part of these specifications in full by the time named (the 20th instant) it would be necessary for me to devote these specifications, in full, by the time named (the 20th instant) it would be necessary for me to devote the whole of my attention personally to the matter. But in the present position of the business of the Department, it is not, I regret to say, in my power, unless other important matters are allowed to stand,

to give this one the whole of my personal attention.

"Since I assumed the position of head of the Department, my time has been closely occupied with (in addition to the daily work of the Department) the preparation of specifications for the passenger and goods engines ordered to be obtained at once from England. During this time (three months) I have dealt personally with about 800 important documents of various kinds, embracing upwards of 6,000

separate papers.

"This has been done in the absence of the assistance of the office staff, which had hitherto rendered assistance to the gentlemen who have been, at various times, at the head of this Department. During the earlier part of this time I was without office helps of any kind. During the succeeding period, of about a month, the assistance available was of an intermittent and temporary nature, and even now, however able and willing those whom I have to assist me may be, it can hardly be expected that they, new to the Department and the work, can in the meantime relieve me of a large portion of the work which is necessary to meet the daily requirements of the Service, and which, so long as it devolves upon the head of the Department to attend to, must necessarily prevent his giving more than a limited portion of his time to other matters.

Then, after giving a list of a variety of matters awaiting attention, I concluded my minute as

follows:—

"I think I may venture to say (without egotism) that I possess the experience and the will required to raise the working of the department, in respect both of efficiency and economy, to the first rank in railway performance. But before this can be attempted, and before I can personally be held even the safe or efficient working of the Department, it is not only necessary, but just, remotely responsible for the safe or efficient working of the Department, it is not only necessary, but just, that I shall have a fair start, with the opportunity of dealing with the several matters affecting the Department, in the order in which it appears to me they should be dealt with; and further, that any recommendation I may feel compelled to make, with a view of meeting in the promptest way the immediate requirements of the Department, shall be carried out.

"To meet the instructions of the Minister I shall prepare, with all possible despatch, short specifications in accordance with the Commissioner's minute 78/13,380, referring the contractors to sample vehicles now on the railway, if the Commissioner will be good enough to cause to be furnished to me the stock numbers of one of each of the several kinds of carriages, and other vehicles included in the summary estimate of stock required for five years (as per list herewith) which are, in the opinion of the Traffic Department, most suitable for the accommodation of the passenger and goods traffic. On the receipt of this information I will have the best constructed vehicle of each class, corresponding with those indicated by the Traffic Department, collected and placed in a siding, and particulars for the specifications prepared

I respectfully submit that there is nothing either in the matter or tone of the above quoted minute to justify the statements made by the Commissioner in paragraph 7.

Having now dealt with paragraph 7, and, by consequence, of No. 8, I beg to state, in regard to paragraph 9, that it is incorrect that I was, as stated by the Commissioner, "appointing officers, such as inspectors," to positions in my Branch without authority, and "contrary to precedent." The one appointment which I was then about to make was, as I submit, entirely in accordance with the action of my predecessors in such cases. A perusal of the minute which I addressed to the Commissioner on the subject will, I feel sure, satisfy the Council that it was warranted by the circumstances, and does not, as I submit, justify the statement that I acted in the matter in "a combative spirit," or insisted that I should have "uncontrolled power" in this or any respect. The circumstances attending the case seemed to render it necessary for me to request to be furnished with a statement, indicating the matters that were left to the control of the Locomotive Engineer to act upon. and settle on his discretion, and what were left to the control of the Locomotive Engineer to act upon, and settle on his discretion, and what were reserved for the approval of the Commissioner before being put in force. The terms of the Commissioner's minute of 14/2/79, in reply, might have proved sufficient to have enabled the business of my Branch to be carried on with reasonable facility, if the matters indicated in that minute had been left in my hands. This, however, was not the case; and while the control of the staff was nominally given, the action of the Commissioner had the effect of undermining my authority and control.

As regards the case of Mr. Husk and that of Mr. Churchward, referred to in paragraph 11, they

have already been fully dealt with in the papers of each case, and I need therefore merely say that while the appointment of these gentlemen was, in each case, covered, as it seemed to me, by the authority conveyed in the Minister's minute of 10/5/81, to the effect that he was of opinion that "the fullest power of appointing, promoting, suspending, and dismissing should rest in the hands of the Locomotive Engineer," the employment of these two gentlemen was in accordance with the course I had followed in similar cases on previous occasions and which had met with the tacit if not indeed with the formal similar cases on previous occasions, and which had met with the tacit, if not indeed with the formal, approval of the Commissioner; while it is not the case that I dispensed with the services of any one, for the purpose of giving employment to Mr. Husk. I may however add that Mr. Husk offered his services, because (as will be seen by the papers) his then engagement in the office of the Locomotive Engineer for the South Australian Government was about to terminate, and his experience in that office, coupled with his ability to write shorthand—the assistance of which to facilitate the dispatch of my work I had long his ability to write shorthand—the assistance of which to facilitate the dispatch of my work I had long felt the need,—seemed to me to specially fit him to render the assistance I required.

As regards the consolidation engines, referred to in paragraph 12, I beg to state that the statements of the Commissioner in this matter are also at variance with the facts. I did not decline to accept the responsibility of running these engines, "because" (as stated by the Commissioner) "the weight on the bogies was less than in engines of English design," but I nevertheless thought it my duty to point out to the Commissioner that I was of opinion (and rightly too, as later experience showed) that they had too little weight on the bogies for engines of that type and size. If the Commissioner means, by the second sentence in paragraph 12, to imply that I proposed to "abandon" these engines the statement is not correct. The circumstances did not require me to make any such proposal. I was not in any way responsible for their having been obtained, and was not called upon to do more than lay before the Commissioner those points in regard to these engines which it appeared to me he should, under the circumstances, be apprised of; and whatever responsibility the Commissioner may have incurred in respect of these engines was due entirely to the unusual course which was followed in connection with their supply. of these engines was due entirely to the unusual course which was followed in connection with their supply. Fortunately no serious accident has occurred, as the Commissioner says "from the cause stated"; but the Commissioner seems to forget that he himself at a later period thought it necessary to require the speed of these engines to be limited at certain parts of the line considerably below the usual working speed of these parties of the line in consequence of the defeative action of the horizontals in lifting from the speed of these engines to be limited at certain parts of the line considerably below the usual working speed at those portions of the line, in consequence of the defective action of the bogie wheels in lifting from the rails, due to insufficient weight thereon; and further, that the fittings which were brought from America by the gentleman whom the manufacturer sent specially to deal with the matter—in the hope of remedying the defective action of the bogie wheels in lifting from the rails without having recourse to the imposition of the extra weight put upon them—failed in their effect. The matter of the extra weight of the tank engines, referred to in paragraphs 13, 14, 15, and 16, has already been dealt with in the papers on the subject. I should, however, point out that the alteration made in England in respect of the four-wheeled bogie, whereby the weight of the engine was partially increased, was duly covered by the authority contained in the telegram which was transmitted to the Agent-General on my recommendation to the Commissioner, which was as follows:—

to the Commissioner, which was as follows:—

"In carrying out details of six tank engines such modifications and improvements to be made by the makers, with the approval of Mr. Fowler, as their experience of the requirements of the railway may suggest."

As regards the Commissioner's opinion, that the interests of the Department have been disregarded in this matter, I have merely to repeat what I have already stated in my minute of 14/12/80 on the subject, viz. —"That I regard these engines as well suited for the traffic for which they are designed, and am satisfied that the adoption of less powerful engines would have been a great mistake; they are, as I pointed out when I recommended them, ahead of their present work, having that good margin of power for extra traffic, without which no engine is held to be suitable for the service for which it is intended—a quality the advantage of which will be felt and appreciated more and more, year by year, as

the traffic rapidly increases."

I will next proceed to deal with the case of the tender of engine No. 85, leaving the road at Katoomba, referred to in paragraphs 17, 18, and 19. In paragraph 17 the Commissioner commences

"In reporting the accident to me, Mr. Burnett stated that it did not arise from any defect in the vehicle."

The Commissioner then adds as follows:-

"I therefore called upon Mr. Mason to say what defect there was in the road, for it must either have been a defect in the vehicle, or some fault in the road that caused the accident. Mr. Mason assured me, however, that there was no fault whatever in the road, that it was absolutely perfect, and that any alteration would cause a defect in it. Mr. Mason fully understood the importance of the matter, the risk there was to the life and safety of the public, and did not report till he had made personally a careful inspection of the place.'

Whether this "report" was verbal, or in writing, is not so far stated, but it will be seen that the

subsequent context (in paragraph 17) implies that it was in the form of a written report, that it was forwarded to me, and that I replied to it; for the Commissioner goes on to say:—

"On referring Mr. Mason's 'report' to Mr. Burnett, that gentleman again confidently stated that the defect was not in the vehicle, and recommended that guard rails should be placed round the

curve where the tender left the road.'

This, I beg to say, is not the case. No such report was referred to me, nor did I at any time again confidently state that the defect was not in the vehicle. The only report amongst the papers, or that ever reached me concerning the matter from Mr. Mason's office—and I have been unable to trace any otheris one merely marked off to the Commissioner by Mr. Mason, thus:—"Commissioner to see.—W.M., 29/10/80." It is a report from Bowenfels by Mr. John Hollis, the Permanent Way Inspector, addressed to Mr. Mason. It is dated Oct. 28/80. It would reach Sydney on the morning of the 29th, and was marked off by Mr. Mason to the Commissioner on that day, giving Mr. Mason no time to visit the spot; and although it contains a statement by Mr. Hollis that the road was in good order, it bears no statement by Mr. Mason to the effect that he had personally made an inspection of the place. But even this report in place of being forwarded to me by the Commissioner for my information or further report, was retained in the Commissioner's office.

The minutes on the papers in reference to the matter show, that on receiving my report relative to the condition of the engine and tender, the Commissioner, in place of referring to me any report of Mr. Mason's, as stated by the Commissioner, merely inquired by minute, addressed to his Record Clerk: "Is there any report from the Engineer for Existing Lines, 12/11/81.—Cn. A. G." In reply to this question reference is made (in pencil) by the Record Clerk to two papers, one 80-21,122 and the other 80-21,132, the former being, as will be seen, a report of the occurrence by the Traffic Manager, addressed to the Commissioner, and the latter being the report of Inspector Hollis to Mr. Mason, to which I have already

Nothing further appears to have been done in the matter by the Commissioner, beyond recording

on the papers the following minute:—

"Nothing the matter with the road, nothing wrong with the tender or engine, and yet the former leaves the track; this is unsatisfactory.—Chas. A. G., 17/11/80."

Then this further minute follows:

"The engine was probably running at an undue speed, but this is also denied. I am not satisfied, and must consider whether fuller inquiry should not be made.—Chas. A. G., 19/11/80."

Then follows an instruction by the Commissioner to the Record Clerk to resubmit the papers at the "end of the year." The papers appear by the markings to have been resubmitted on January 3/81,

the "end of the year." The papers appear by the markings to have been resubmitted on January 3/81, and on January 15 the Commissioner wrote on them:—

"I am afraid inquiry would result in eliciting nothing further—there has been a fault somewhere, and those immediately responsible should have left nothing untried to discover the cause. This paper may be resubmitted should, unfortunately, any similar case arise.—Chas. A. G., 15/1/81."

It is clear then from the above minute that in place of Mr. Mason's report, or any other of the kind having been referred to me by the Commissioner, the whole of the papers on the subject were retained in his office for resubmission at some future time. But in addition to the erroneous statement by the Commissioner that he had referred to a report from Mr. Mason to me, and that I had "again confidently stated that the defect was not in the vehicle," the Commissioner further adds incorrectly:—

"And (Mr. Burnett) recommended that guard rails should be placed round the curve where the tender left the road," and then concludes the paragraph No. 17 by saying:—"I stated that I was altogether dissatisfied with the result of the inquiry, and expressed my opinion that those immediately responsible should have left nothing untried to discover the cause of the accident."

responsible should have left nothing untried to discover the cause of the accident.

The sequence and wording of these sentences do, I respectfully submit, very incorrectly represent the fac's of the case. It will be seen by a perusal of the papers that, in place of the fac's being as represented by the Commissioner, no communication whatever was made to me by that gentleman, or anything done by him to lead me to reopen the question of the tender's fitness for the road-my report on which had been based on evidence which I was warranted at the time in taking as conclusive-and further, that the Commissioner's expression of dissatisfaction with the result of the inquiry (which was self-evident to anyone who was in possession, as the Commissioner was, of both sets of papers) was confined to his giving expression thereto on a paper which, however, he retained in his office.

As stated by the Commissioner, the same vehicle, two or three months afterwards, viz., on the 13th January, 1881, again left the road at the same spot, and, as afterwards transpired, directions were given by the Commissioner to the Secretary that the Board appointed to inquire into charges brought against the employees should inquire into the cause of this accident. It should, however, be pointed out that employees should inquire into the cause of this accident.

although the accident happened on the 13th January, the first intimation of the calling together of the Board was not made on behalf of the Commissioner until the 25th of that month. Further, the intimation was made on a paper addressed to Mr. Mason alone, which paper was not acted upon or returned to the Commissioner's office by Mr. Mason until the 29th January, and did not reach my office until the 5th

of the following month, or twenty-two days after the occurrence.

In the meantime I had ordered the tender to be lifted, and gave directions to Mr. Scott (the Locomotive Overseer) to supply me with the result of his personal examination, and measurement of the working parts of the tender. This he did on the 18th of January. I examined and checked the measurements he gave me, and directed him to have some modification in the dimensions carried into effect. On his reporting to me, in writing, that the tender was ready for work, it was again brought into use, viz., on the 25th January. Up to this time, however, no intimation had been conveyed to me that Mr. Mason had reported that the road was in perfect order, or that the Commissioner had directed an investigation by the Board, but on the 31st January (the tender having again left the road on that day at the identical spot, to an inch, at which it had left the road on the two previous occasions, indicating some local peculiarity or fault in the road at that spot) I received a minute from the Secretary, on behalf of the Commissioner, stating that it was his wish that a Board Meeting should be held, and that, pending inquiry, all drivers should be instructed to reduce speed at the curve in question, and it was not until then that any of the papers reached me, which the Commissioner states had been referred by him to me on the occasion of the tender first leaving the road, over two months before. I replied on the same day (the 31st January) that I had issued instructions to the drivers as requested, and asked the Secretary to inform me when the time of meeting of the Board was fixed. On the 4th of February I received a reply, proposing "Monday, the 7th, say at 9:30 at Mr. Burnett's office, if this will suit," and adding "that Mr. Cowdery will act as Mr. Mason's substitute." To this I lost no time in replying, "If it will suit the Secretary and Mr. Cowdery I would ask for the meeting to be postponed till 11 on Tuesday (the 8th), and I will come to the Secretary's office if it will better suit the convenience of the other members of the Board." And here I may be permitted to say with reference to the after proposal I made that Mr. Sectit should represent me at the mitted to say, with reference to the after proposal I made, that Mr. Scott should represent me at the inquiry (so pointedly referred to by the Commissioner in paragraph 18), that it did not emanate, as I need hardly say, from any indifference on my part, as stated by the Commissioner, but because it was a matter in regard to which Mr. Scott's personal knowledge of the facts connected with the fittings of the tender rendered him specially qualified to deal with. That the charge of indifference advanced against me by the Commissioner is at variance with the facts, may be at once gathered from a perusal of my minute, which concludes thus:—"Should any point arise at the conclusion of the inquiry requiring my personal action it shall have my earliest attention." Moreover, as showing that to be represented by deputy was not so remarkable a proposal as the Commissioner implies, it will be seen by the papers that the Commissioner had himself approved of the proposal that Mr. Cowdery, Mr. Mason's assistant, should represent the latter on the Board at this very inquiry.

In the meantime, and prior to any communication from the Commissioner on the subject, I had directed the tender to be again lifted under Mr. Scott's personal supervision, and every part again examined, and the result reported by him to me. On its having been again examined in accordance with my directions, I was informed by Mr. Scott, prior to the meeting of the Board, that he had discovered that the recess for one of the spring pillars in the lid of one of the tender axle-boxes was found to be \frac{1}{4} inch deeper than it ought to have been, which caused an unequal loading of the leading axle, and which he had omitted to discover and to report to me before. I therefore at once communicated the result to the Commissioner in

my minute of 7/2/81, as follows:—

"I have to report that since the tender of the above engine (No. 85) left the road on the last

"I have to report that since the tender of the above engine (No. 85) left the road on the last owing to some error having been made in some of the measurements of the spring gear, there is an inequality in the loading of the wheels which I think may be taken, in conjunction with some peculiarity in the formation or condition of the road at the place, as accounting for the tender leaving the road, and the fact being now ascertained it will doubtless be, in the opinion of the Commissioner, unnecessary for the Board to meet.

"At the same time, in view of the fact that the spot at which the tender left the road has been in every case identically the same, viz., 8 feet 10 inches from the end of the same rail, while the tender in question has not left the road at any other place, which may be taken as evidence that this particular part of the line has a less margin of safety than the rest of the railway, I would suggest that a check-rail be fixed there. It is simple and inexpensive, and I know from experience of its results in similar situations

that it could render the place as safe as any other portion of the line.'

Here, for the first time, reference is made by me to the use of a check or guard rail; yet, notwith-standing this, the Commissioner—though claiming that he has coloured no representation which he has made against me—has pointedly stated that I made this recommendation as to the guard rail in reply to a report which the Commissioner states (incorrectly) he had forwarded to me from Mr. Mason recording, on that gentleman's personal examination of the road, that it was in perfect order, and in regard to which report the Commissioner adds (also incorrectly) that I "again confidently stated the defect was not in the vehicle.

The facts being now placed in their true light, I respectfully submit there is no justification whatever for the statement with which the Commissioner concludes paragraph 19, to the effect that "the circumstances afford no excuse whatever for Mr. Burnett's neglect of his duties." In entrusting the duty of ascertaining whether or not the tender was in proper working order for the road to an officer of Mr. Scott's position in the service, and in being guided by the information submitted to me by that officer (with whom indeed, as overseer, the duty of personal supervision rested) I respectfully submit that I in

no way neglected my duty.

In regard to the case of the fire in a carriage, referred to in paragraph 20, I beg to state that in this, as in previous cases, the facts are incorrectly stated by the Commissioner. In the first place I would point out that there is no just of reasonable connection between the reference to the "condition of the wheels and axles of the older engines and carriages" quoted by the Commissioner from my paper of November 30, '78 and the case in question. By the most cursory reference to that paper it will be seen that the reference I made therein to "the condition of the wheels and axles" had no relation whatever to their position in the vehicles. That the vehicles in question had been at work for many years prior to my connection with the Department without the defect, which was brought to light by the accident, having

come to the knowledge of those long connected with the Department, and more immediately engaged in the fitting and maintenance of the carriage stock, is evidence that the contingency was a remote one, and it is not the fact that I pointed out that one of my "first duties would be to see that all old carriages were properly fitted." In reporting to me some days prior to the accident the fact that the wheels of a carriage had been discovered to have come in contact with the underside of the floor of the vehicle, Mr. Scott ascribed the circumstance as principally caused by the special way in which the brake blocks were fixed in the particular vehicle he referred to, and which was different from the other vehicles fitted with brakes prior to my connection with the Department, and he did not in any way indicate in his report that the like defect existed in any other vehicle in use; while it is not correct that I was asked by Mr. Scott to come and inspect the vehicle. Mr. Scott merely mentioned, incidentally, in his report as follows:--"This carriage is now lifted and could be seen by you if convenient," and there was not a single word said by him indicating that he required my personal directions in the matter. Moreover, he reported that he was doing that which was obviously required to meet the case in these words:—"I may state that I am having a set of springs put under this carriage that have been newly set up and supplied with an additional plate." Under the circum-Under the circumstances, I did not consider the occasion required my personal inspection of the vehicle.

A perusal of the papers will show that, as regards Mr. Scott, the object of my minutes to him on the subject was to bring home to him a point which his reports showed that he failed to realize, viz., the need for so arranging the work of those under his direction that any case of neglect in future might be brought home to the person individually in fault. That Mr. Scott recognized that, in his position as overseer, the duty devolved upon him of ascertaining whether there were other vehicles similarly circumstanced to the one he reported upon, may be gathered from his reply to me on the subject. His statement is as

"When the defect in No. 77 carriage was discovered, I thought it possible that some other of the carriages similarly circumstanced might prove liable to a similar defect, and I, in company with Thomas Evans, principal carriage examiner, examined several of them and found no signs of wheels rubbing on the floors of any of them. After this inspection, and No. 77 being the first case of the kind after the running of carriages similarly circumstanced for several years, no imminent danger was anticipated, and pending the trial of the stronger springs that had been placed under No. 77, nothing further was done in the matter. Unless there had been apparent risk in allowing the carriages to run, it would have been very undesirable to have stopped any of them, as during the holidays every available vehicle was most eagerly claimed for use by the Traffic Branch."

That Mr. Scott had received, not only my authority, but my special directions to stop any vehicle whose condition rendered it doubtful or unfit for work, pending the requisite alterations or repairs being

effected, will be seen from the following instructions which I gave to him in July, 1880:—

"Any engine, carriage, or other vehicle in regard to which you may come to have the slightest doubt as to the reliability of its condition for service must be at once reported to me, or, if the case be urgent, it must be at once stopped, and particulars of its condition reported to me forthwith. You will see that the necessary instructions are given on this point."

Before leaving this subject I beg leave to quote one or two paragraphs from my report of May 2,

1881, to the Commissioner on this accident, as follows:—
"Mr. Burnett's expressions of so much consideration for the public life and safety, referred to by the Commissioner, have been, and are, as sincere as those of anyone in the Railway Department, notwith-standing any insinuations to the contrary. The reasons that have led him to put upon paper these expressions at various times will be found by the Commissioner in the Locomotive Engineer's 81–2,012, dated 2/4/81, to which he would now respectfully refer the Commissioner, and to which he has been hoping. for some time past to receive a reply.

"The accident in question is one of the nature of those, which the Locomotive Engineer feared might sooner or later arise from the unfortunate condition of things under which his Department and his work have long been placed, and the anticipation of which led to his putting the consequences likely to ensue so

clearly before the Commissioner in the before quoted and other papers.

As regards the matter of the Minni coal waggons, referred to by the Commissioner in paragraph 22, a perusal of my minute will show that I did not advise the Commissioner "to prohibit the running of all waggons, the axles of which were made to the same specification as the one which broke." The following are my exact words:

"I attach Mr. Boag's report on this matter, my 81-3989. I regard the breakage of this axle in the manner described, as an important matter, indicating, as it does, the probability of axles obtained under the same conditions, and that have been subject to the same usage being liable to similar failure which may lead to serious accident. If the Department is responsible for their condition I recommend that the vehicles be

stopped pending their condition being ascertained."

It is clear from the context that my recommendation did not apply to all waggons, but only to those vehicles with "axles obtained under the same conditions" and that had been "subject to the same usage" as the axle which broke, and even, to this limited extent, my recommendation was to be acted upon only if the Department was responsible for the condition of such axles in the event of their being continued in use on the Government Railways, and the consequences named by the Commissioner as likely to have ensued are, I submit, too remote to have arisen from any recommendation I intended to convey.

As regards the matter of the workshops at Bathurst, Goulburn, and Penrith, referred to in paragraphs 23 and 24, the papers disclose, I respectfully submit, the bad results of the course followed by the late Engineer for Existing Lines, in withholding from the Locomotive Department the control of the buildings and works required for the accommodation and maintenance of the rolling stock; and the waste of funds which it is estimated would result from the adoption of the plans I furnished, only serves to show the evil arising from the unusual step taken by Mr. Mason in proceeding with the work before submitting the plans for the opinion of the Locomotive Engineer. The Commissioner states in paragraph 23:—"When these works were well advanced towards completion, Mr. Burnett stated that the accommodation proposed was inadequate, and the expenditure that had been incurred was wasteful;" but the Commissioner seems to forget that I called attention to the matter long before any expenditure had been incurred. As early as September 22, 1880, I wrote to the Commissioner as follows:—

"As the extent and arrangement of the accommodation provided for the Locomotive Branch very materially affects not only the efficiency but the cost of working thereof, it is usual to come to a common agreement as to the suitability of what is proposed to be done before expending the money." To this the Commissioner replied in his minute of September 28, 1880, addressed to Mr. Mason:—"I concur with Mr. Burnett, that the officer who has to regulate the conduct of the business

should be consulted as to the design of the building in which the work will be done.

Mr. Mason, however, disregarded this opinion and proceeded with the work according to his own views, and it was not until that gentleman resigned his position as Engineer for Existing Lines that the Commissioner's minute, above quoted, was carried into effect. The Commissioner then wrote to Mr. Mason's successor as follows:

"The Engineer for Existing Lines promised me that he would lose no time in having the Locomotive Engineer furnished with tracings of the workshops which he proposed to erect at Eveleigh, and also of the shops which were being erected at Goulburn and Bathurst; I learn to-day from Mr. Burnett that he has not been supplied with these tracings, and that he is dissatisfied with the design of the shops or buildings which are being erected at Bathurst and Goulburn."

Will Mr. Cowdery give directions, and personally see, that Mr. Burnett is supplied, without further delay, with the plans he requires, and I must direct, in view of his representation as to the probable unsuitableness of the buildings in course of erection at Bathurst and Goulburn, that no further work be

done until Mr. Burnett has had an opportunity of seeing the plans, &c."

Whether the survey of a piece of land prior to the design and erection of buildings thereon is Whether the survey of a piece of land prior to the design and erection of buildings thereon is necessary or not may be a matter of opinion, but I certainly regarded it as such, and, as bearing upon the question, I may quote the views of Mr. Mason whom the Commissioner has referred to as an authority in such matters. In reply to the Commissioner's minute of 17/8/80, asking Mr. Mason to submit his proposed plans of workshops for the Eveleigh site, Mr. Mason wrote:—"It will be necessary to have a complete survey made of this estate and sections taken before a design for shops can be laid down. I have given instructions for the survey to be made at once, and no time shall be lost in preparing a design for shops, when I get a plan and sections of the ground." And again, a few months later Mr. Mason wrote to the Commissioner on the subject as follows:—"No time will be lost in preparing designs for new shops as soon as the plans and sections are ready which I expect will be in a few days."

as soon as the plans and sections are ready, which I expect will be in a few days."

It is not perhaps surprising that Mr. Cowdery should declare that there is not a single improvement to recommend the plans I furnished for Bathurst and Goulburn, seeing that they are not in accordance with the arrangement of buildings which emanated from the office over which the gentleman now presides, and in which he held the position of Mr. Mason's chief assistant at the time these buildings were put in hand. My plans are, however, a great improvement in many important points on the original ones. In regard to the reference made by the Commissioner to Mr. Scott's report on the subject, I need merely say that the value to be attached to Mr. Scott's opinion in this matter may be estimated by the exaggerated statement he makes, that the result of the adoption of three roads in the running sheds would be danger to those employed there, seeing that the clear space between the roads would be equal to, or more than, the space adopted in hundreds of running sheds in every day use, not only without "danger to those employed there," but with ample space for "cleaning and washing-out engines," as well as all other purposes of a running shed.

As regards the plans of the workshops at Eveleigh, referred to in paragraphs 25 and 26, a very small portion of the time occupied in connection with this matter rests with me. My report to the Commissioner of 11/8/81 shows clearly the reasons why I could not recommend the adoption of Mr. Mason's plans for these shops. Whatever delay has occurred in connection with this matter since these plans were referred to me has been due to the various events which have in the meantime happened affecting the control and administration of the Locomotive Branch, and which have prevented my giving the processory time and thought to the designing of the meantable.

the necessary time and thought to the designing of the workshops.

In regard to the questions involved in paragraphs 27, 28, 29, and 30, I beg to say, that although I have not found myself in harmony with the views of the Commissioner in the cases referred to, I see no reason to doubt the soundness of the conclusions at which I arrived in each case, and I am confident that the views and principles which I have advocated, in place of being mischievous in their tendency, as described by the Commissioner, are calculated to bring about entirely opposite results. I would respectfully ask the Council to be guided in their judgment, as to the soundness of my opinions and arguments in these cases by what I have said and written as recorded in the papers the measures in which my rich are in these cases, by what I have said and written as recorded in the papers themselves, in which my views as to the culpability of the driver (Main) in the Katoomba accident case are fully stated.

As regards the Board which is referred to by the Commissioner as an authority in these matters, and from whose recorded opinion in the above case I felt compelled to differ, it is but right that I should here state, for the information of the Council, the circumstances connected with its formation, so that its

nature, and the weight to be attached to its conclusions, may be duly estimated.

By the papers on the subject, it will be seen that its origin arose out of a minute written by the Commissioner early in 1878 to the Minister (the Hon. Mr. Sutherland), calling attention to the conflicting testimony which was sometimes found to be given by the men in different branches when a case occurred in which the men in two or many hypothese were implicated and after siving an instance in point the in which the men in two or more branches were implicated, and after giving an instance in point the Commissioner stated:—"I consider it desirable that a Board of three, each representing a branch—Traffic, Locomotive, and Permanent Way—should be appointed to investigate similar charges against the men employed in these Railways."

A temporary Board on the above basis was at first appointed, but subsequently, on June 1, 1878, the Minister (Mr. Sutherland) wrote:—"The Board for the South and West Lines now appointed is only temporary. I think that for the purpose of giving the greatest confidence to all concerned, the Board should be composed of gentleman of higher status in the service than those named. When the Locomotive Engineer is appointed the Board will consist of that gentleman, Mr. Mason, and the Secretary of Railways."

It is clear from the foregoing that for the purposes of the Board each branch was to be represented, as was but just and proper, by one individual—the Permanent Way Branch by its head, the Engineer for Existing Lines, the Traffic Branch by the Secretary for Railways, and the Locomotive Branch by the Locomotive Engineer. For confirmation of this I may refer to answers given in Parliament on January 22/80, in reply to the following questions by Captain Onslow:— 22/80, in reply to the following questions by Captain Onslow:

(1.) "Is there any permanent Board appointed to inquire into accidents; if so, when was it appointed?"

(2.) "Who are the persons comprising it?"

The answers were:

(1.) "The Board appointed is not specially for inquiry into railway accidents, although they may be directed to undertake such inquiry. They were appointed to inquire into charges brought against the employees, in cases where it is doubtful to which branch of the Railway Service the fault is attributable. The Traffic, Locomotive, and Permanent Way Branches are each represented at the Board."

(2.) "For the South and West Lines the Board is composed of the Secretary for Railways, the

Engineer for Existing Lines, and the Locomotive Engineer."

By these answers it is also clear that each of the three executive branches of the Service had its individual representative; and of these three members, as above named, the Board consisted up to the date of the Katoomba accident. The minute of the Commissioner, directing the Board to inquire into the accident, was as follows:-

"The Board will be good enough to meet at once, and inquire into the cause of this accident.— Chas. A. G., 11/3/81. Will Secretary please inform Mr. Mason and Mr. Burnett."

On this authority the Board was summoned; but on its meeting, Mr. Read, the Traffic Manager, also took part, and on the question as to his title to sit on the Board being raised, the Secretary stated that the Commissioner had appointed Mr. Read as a member, and that the papers on the subject would be formally submitted for the information of the Board in due course. It afterwards appeared from the papers, that the appointment was submitted by the Commissioner to the Minister in the following terms:

"I think the name of the Traffic Manager should be added to those forming the Board of Inquiry."

Notwithstanding the addition of the Traffic Manager to the Board, as the representative of the

Traffic Branch, Mr. Vernon (the previously appointed representative of that branch) still remained; and it having been initiated by that gentleman at the first meeting that Mr. Mason was unavoidably absent, but without further intimation as to the cause, the inquiry proceeded for several days in the presence of Mr. Vernon, Mr. Read, and myself. But finding on the fourth day that the continued absence of Mr. Mason was due to his having resigned his appointment as Engineer for Existing Lines, and further (on submission of the papers) that the Secretary sname had not been removed from the Board, notwithstanding the new appointment of the Traffic Manager, whereby the branch I represented was placed in a minority, I deemed it necessary to submit the question as to the constitution of the Board to the Commissioner, as conveyed in the following minute:

"Locomotive Engineer to Chairman of the Board of Inquiry.

"March 18, 1881.

"Constitution of Board of Inquiry into cause of accident at Katoomba on the 11th instant.

"To avoid the misunderstanding arising from verbal communications, I ask that the transcript of the notes of proceedings on the above subject, taken at our two meetings to-day, be submitted with, and embodied in the question as to the constitution of the Board, agreed to be referred to the Commissioner prior to our next meeting (on Monday, the 21st), and in view of the minority in which I find the Department I represent placed by the meant appointment of Mr. Pood to represent the Traffic Department in ment I represent placed by the recent appointment of Mr. Read to represent the Traffic Department, in conjunction with Mr. Vernon, who has hitherto and alone filled the position of representative of the Traffic Branch on the Southern and Western lines, I request that this paper be at once submitted to the Commissioner, respectfully asking that in the absence of a permanently appointed successor to the head of the Permanent Way Branch, Mr. Whitton be nominated to fill the vacancy at the Board, as being one of the very highest authorities on Railway working in this or any other country.'

In place, however, of this, Mr. Cowdery, who was then acting in room of the late Engineer for Existing Lines, was nominated by the Commissioner to a seat on the Board.

Each member of a Board is of course entitled, and indeed called upon to record his opinions on any case submitted for consideration; but in discrediting, as the Commissioner does, my action or opinion in matters affecting the administration of my branch by a reference to the opinions of the other members, as being opposed to mine, the Commissioner compels me, as I respectfully submit, to enter my protest against the opinion of the representatives of other branches being taken as of any weight or authority against that of a member who happens to dissent from them, even supposing each branch to be equally represented which as I have pointed out was not the case on the occasion in question

represented, which, as I have pointed out, was not the case on the occasion in question.

With respect to my removal of the suspension of driver Main, referred to in paragraph 29, I beg to remark that the circumstances connected therewith will be found already fully detailed in the recorded to remark that the circumstances connected therewith will be found already fully detailed in the recorded proceedings of the Board. I may, however, here state that the driver was not suspended by the Board, and in my giving directions in the matter to the effect that I saw "no reason why driver Main should not resume work," I refrained from giving any expression on the merits of the case, and merely removed a suspension which had not been endorsed by my authority, and which had never been either officially or unofficially before the Board in any way whatever; and in removing it, I desired merely that any question affecting the driver should be determined unprejudiced by any prior action which had been taken in suspending him. My subsequent action in regard to the decision in Main's case is fully stated in the papers on the subject. papers on the subject.

My views, in regard to the staff and ticket system are, as I submit, sound, and the representations I have made from time to time on the subject have had the effect of adding to the security of the system.

As regards paragraph 31, I beg to submit that my treatment of the contractors has been in every case proper, and in accordance with my official position and duty; while in regard to the only actions-at-law (two in number) connected with matters in my branch with which I am acquainted, it will be found, by a perusal of the papers, that both actions arose out of the extreme looseness of the terms of the agreement with the contractor, for the drawing up and execution of which I am in no way responsible. The first action was brought by the contractor with the specific object (as the papers show) of having it determined at the hands of a jury what the terms of his contract really were under the above agreement; while in regard to the second action, although it was ultimately decided that the contractor's claim for extra payment for work, which had not (as I think the papers show) been fully performed by him could not be resisted, in consequence of the terms of an offer of extra payment that had been made to the contractor, yet the decision was not arrived at until, on the advice of the Crown Solicitor, the matter had been referred for the opinion of two of the most eminent counsel in Sydney. In

In regard to paragraph 32, I am not aware of the continual changes in my staff which the Commissioner mentions. As regards the gentleman referred to, Mr. Chambers resigned because (as the papers show) he did not receive so high a step in promotion in the Drawing Office as he, excusably enough, though erroneously, considered himself qualified for.

Mr. Booth, on being suspended for a week for insolence, became so abusive in his language as to render it necessary to continue his suspension, and on my reporting the metter to the Commissioner in

render it necessary to continue his suspension; and on my reporting the matter to the Commissioner, in consequence of Mr. Booth failing to offer any apology, the Commissioner, in place of giving his support to my authority, took occasion to transfer Mr. Booth's services to the Tramway Branch, which was then in need of a draftsman. Mr. Booth, however, remained there only three days. Within twenty-four hours of his starting in that branch he addressed a communication to the Commissioner, which Mr. Booth's superior officer, the Tramway Engineer, describes in a minute on the subject as "insolent in the highest degree." Mr. Booth forthwith resigned his post; and the fact of his leaving his employment in the way he did confirms the impression I had formed, that his defiant and insolent conduct in my office was due to his height different to his employment. his being indifferent to his employment.

As regards Mr. King, owing to his being a junior clerk, I came but little into personal contact with him; but I saw quite enough of him to be satisfied that he was idle and careless, and the circumstance which led to his services being dispensed with was gross impertinence to the Chief Clerk, on the

occasion of his finding fault, after several previous warnings, with his (Mr. King's) neglect of his work.

With reference to Mr. Sutcliffe, I should regret exceedingly if I had reason to believe that I had in any way done him an injustice, or said anything, not warranted by the circumstances, to lead to his tendering his resignation. The readiness with which he intimated his intention of leaving led me to the belief that he had other employment in view. Whether this was so or not, I learned that shortly after-

wards he entered upon other employment at a higher rate of pay.

With respect to paragraph 33, I beg to say that my desire throughout has been to maintain cordial relations and harmony in working with heads of branches. Any temporary discord that may have existed between Mr. Read and myself arose out of the special circumstances to which I have already referred, relative to the Board of Inquiry in the Katoomba accident case, and the discussions and papers to which it led. In raising the question as to Mr. Read's being a member of the Board (in the absence of the papers on the subject), I was merely doing that, as I respectfully submit, which the circumstances justified; and nothing was further from my intention than to write or say anything offensive or discourteous to Mr. Read, who, as the head of the Traffic Branch, was unquestionably the proper person to represent that branch on the Board. In inviting attention to the minority in which I found my branch of the Service placed, in consequence of Mr. Vernon's continuing to hold a seat on the Board, notwithstanding Mr. Read's appointment thereto, I was also, as I submit, only doing that which the circumstances warranted, no discourtesy to Mr. Vernon being thereby intended; while, as regards Mr. Mason, I regret that I should have had occasion to differ from him in the matter of locomotive workshops. Although I am under the belief that I have never written anything of, or to, my fellow officers unwarranted by the circumstances, or otherwise than in self defence, yet, if I have done so at any time, regret it and apologize.

I regret to note the Commissioner's remarks that he has received much provocation at my hands,

because in whatever light my actions at any time may have appeared to the Commissioner, I can unhesitatingly say that I have been actuated with but one desire,—to faithfully perform the duties of my office,

with the sole object of securing the best interests of the service.

In conclusion, I would ask the Council to pardon the length to which this paper has extended, and in which I have felt compelled to say much in self defence which I would rather have left unsaid, trusting that if I have herein unwittingly expressed myself on any matter, in any way unbefitting the occasion and the circumstances, I may be pardoned.

ROB. H. BURNETT.

November 17th, 1881.

Laid before the Executive Council, 22nd November, 1881.—A. C. Budge, Clerk of the Council. Referred to the Honorable the Secretary for Public Works.—A.C.B., 23/11/81.

No. 22.

The Clerk of The Executive Council forwarding Papers for His Excellency's perusal.

My dear Bloxsome,

His Excellency wishes to read Mr. Burnett's case at his leisure. Will you kindly forward it, and when read, return to me, as great delay has already taken place in this case.

A. C. BUDGE.

I have perused these voluminous documents. Return them at once to the Clerk of the Council.— A.L., 22/11/81.

No. 23.

The Commissioner's reply to Mr. Burnett's defence.

THE observations which I shall make upon Mr. Burnett's voluminous paper will be brief. defence, for the most part, upon discrepancies which he alleges exist between the facts of the case as disclosed by the papers and my statement of them. I would ask the Minister's attention to the value of Mr. Burnett's representation in this respect, by referring to the first instance advanced by him in support of this assertion. He seeks to throw a doubt upon the accuracy of my statement that I had intimated to the Minister, some weeks prior to his (Mr. Burnett's) suspension, my belief that he had shown himself unfitted for the position he held, by adducing the fact that up to the end of August I had myself certified that his services had been faithfully performed. Mr. Burnett is alluding to the printed form of certificate attached to the pay vouchers, which has to be signed by the Commissioner before the salaries are paid. It seems to me that to seriously reply to such reasoning would be a waste of time. Until Mr. Burnett was
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suspended by higher authority than mine, it was my duty to certify for his salary. The Minister will know whether or not I expressed to him, some weeks prior to Mr. Burnett's suspension, my belief of that officer's unfitness for the office he held. It is more than idle on Mr. Burnett's part to assume ignorance of my expressed intention to bring his conduct under notice. I verbally informed him of this intention on the occasion of his seeing me, at my request, respecting his refusal to comply with my directions to reinstate driver Frost, and to certify for driver Main's wages. If Mr. Burnett is sincere in the expression of his surprise that I should be dissatisfied with his conduct, he must have extraordinary confidence in the endurance and forbearance of the head of a Department; for after indirectly resisting the authority of the head of his Department, in various ways, for three years, he at length puts a climax to his covert insubordination by the commission of flagrant acts of disobedience, and by openly defying instructions. As the whole of Mr. Burnett's questionings of the accuracy of my statements have a basis similar to the one referred to in the matter of the certificate for his salary, the Minister will, perhaps, free me from the necessity of replying to each in turn. I would only add that it seems to be a characteristic of this gentleman to charge others with making inaccurate statements. He deals with a statement with all the minuteness of an analytical dissection, and finding some immaterial discrepancy between it and something else with which it is intended to have relation, founds thereon a charge of utter unreliability. The Minister has had personal experience of this in the case of the statement he made as to what he said at the interview which Mr. Burnett had with him, and which was denounced by Mr. Burnett, on similar grounds, as being wholly and absolutely untrue. The office records afford numerous instances of Mr. Burnett's behaviour in this regard.

Mr. Burnett urges that his railway practice in England "did not show that neglect of duty" which I attribute to him. Mr. Burnett may have been faithful to his duties in England, but there can be no doubt that he has neglected those entrusted to him here; and I am not prepared to admit that he faithfully performed them anywhere; his connection with the Metropolitan Railway was severed—I believe I am right in stating—because of his refusal to carry out instructions. He did not produce a single certificate from the Board of Directors, as then constituted, when he applied to the Agent-General for the appointment of Locomotive Engineer in this Colony. He certainly submitted certificates from the ex-Directors of the Board, the whole of whom, however, had been, by the voice of the shareholders, removed from the management. I have no desire to allude to these matters, but Mr. Burnett's line of

defence requires that I should do so.

I will not lengthen this paper by referring to all the trivial points raised by Mr. Burnett, although, if thought to be necessary, I can show that he is invariably wrong in the version he gives. Ten pages of his reply (pages 6 to 16) are taken up by a verbal disquisition of the meaning and intent of certain papers, which I stated demonstrate Mr. Burnett's efforts to obtain uncontrolled power over the administration of

the business of his branch.

Mr. Burnett urges that there was nothing unreasonable in his recommending, under the circumstances, that an order for tank engines should be given, without competition, to Messrs. Beyer, Peacock, & Co. No one that I am aware of charged him with unreasonableness in making the recommendation, but when the Minister thought proper, for obvious reasons, to decline accepting it, Mr. Burnett, I must repeat, displayed a controversial spirit and an indisposition to fall in, without unnecessary discussion, with the Minister's views. Even in his present paper to the Executive Council he continues the discussion. He says:—"In place, however, of my recommendation being entertained, I was met thus early in my connection with, and experience of, the Department, with the brief intimation that the proposal that tank engines be ordered without tender could not be consented to." And he adds:—"I am unable, I must confess, to see the unreasonableness of my recommendation under the circumstances."

I have only to say that the Minister, to whom the recommendation was submitted, declined to entertain it, and Mr. Burnett should have accepted the decision without question. It is unnecessary to entertain it, and Mr. Burnett should have accepted the decision without question. It is unnecessary to load this paper with the Minister's reasons for declining to give an order, in this way, to Messrs. Beyer, Peacock, & Co., upon Mr. Burnett's recommendation. As I stated before, they were obvious. The statement made by Mr. Burnett that an order had been given by the Department, on March 29th, 1878, for several engines, without tender or competition, and further, that a month or two after his proposal was rejected (viz., in December, 1878) the Department ordered nine engines from the same firm, without competition of any kind, is, I regret to say, very disingenuous and calculated to mislead. The firm alluded to is Messrs. Baldwin & Co., of Philadelphia, the makers of the special type of engine called the "Consolidation." Mr. Burnett might, with equal propriety, point out that we ordered "Vickers' Steel Tyres' from Vickers without competition, or the Westinghouse Brake from the Westinghouse Company without first inviting tenders.

first inviting tenders.

There is no foundation for the statement made by Mr. Burnett, that while the control of the staff was nominally given to him, my action had the effect of undermining his authority and control. In no single instance did I interfere for over two years, notwithstanding it was reported to me that Mr. Burnett was treating his staff with unnecessary severity. The employés had the right of appeal given them by the regulations, approved by the Governor in Council, and until appeal was made, which was not done until the case of driver Frost arose in the early part of this year, I in no way interfered with Mr. Burnett's action in appointing, punishing, or dismissing his men. The power was not given to Mr. Burnett to appoint draftsmen and clerks; indeed it was specifically withheld from him, but he disregarded the directions, and the excuse he now offers in reply to the special instances quoted by me, is that he had previously disregarded the rule laid down in this respect without detection. The papers in the case of Mr. Husk clearly show that Mr. Burnett dispensed with the services of Mr. Wilson, who was quite competent to perform the duties of the position, for the purpose of obtaining the services of the former gentleman. to perform the duties of the position, for the purpose of obtaining the services of the former gentleman.

A perusal of the papers in the matter of the consolidation engines will bear out my previous state-

ment of the case. Mr. Burnett would not accept the responsibility of running them, and unless I had accepted it, the engines would have remained idle in the sidings; the extra dead weight on the bogies which Mr. Burnett, in spite of every remonstrance, insisted upon applying, has resulted most disadvantageously; it has not had the effect which Mr. Burnett asserted it would have, and owing to the injury which the engines are sustaining by the application of this dead weight, the Acting Locomotive Engineer, Mr. Scott, supported by the opinions of the experienced Inspectors, urges that it may be at once removed.

With regard to the tank engines, Mr. Burnett does not deny that without authority the weight was increased from 33 to over 40 tons. The argument he uses in support of his statement, that he regards

these engines as well suited for the traffic, he had previously used in contending that the weight should

be increased from 29 tons, as originally proposed to 33 tons. This latter was the weight ultimately agreed to, and there was no authority, and no justification whatever for again increasing the weight from 33 to 40 tons. An engine of 33 tons possesses that good margin of power for extra traffic which is admitted to be necessary; no increase in the traffic will require the use of heavier engines, more trains admitted to be necessary; no increase in the trame will require the use of neavier engines, more trains may have to be run to meet the growing traffic, but not heavier trains than engines weighing 33 tons could easily control. Indeed it is more than doubtful whether the engine originally designed by Mr. Mason, weighing 29 tons, would not have sufficed. Mr. Mason was clearly of that opinion, as is Mr. Scott now, after experience of the 40-ton engine, but there could be no doubt whatever that engines weighing 33 tons would have been ample, both for present and prospective requirements. It was the weight recommended by Mr. Burnett and approved by the Minister after considerable discussion and inquiry, as the papers show and there exists no authority or instification for the importation of the heavier engines the papers show, and there exists no authority or justification for the importation of the heavier engines.

As regards the case of the tender leaving the road at Katoomba, which, I contended displayed on Mr. Burnett's part a grave neglect of duty, Mr. Burnett endeavours to show that my narration of the circumstances is not chronologically correct. I would desire that Mr. Burnett should have any advantage which can fairly be derived from any inaccuracy in this respect, which may be found in my statement of the case. The fact, however, remains that the vehicle left the road, not twice as stated by me, but three different times before the defect was discovered. The papers do not disclose all that took place; there were several personal conferences between Mr. Mason and myself on the subject, and I learned from that gentleman that Mr. Burnett still adhered to the statement that the defect was not in the vehicle. If I read Mr. Burnett's representation aright, it seems that he is contending that had he known that Mr. Mason had stated there was no defect in the road he would have discovered earlier the defect in the vehicle, and he urges that no intimation was made to him that Mr. Mason had reported that the road was in perfect order. If Mr. Burnett was unaware that such was the report he was the only person interested who was in ignorance of it. Mr. Scott, and the rest of the officers in the Locomotive Branch, interested, were fully aware of it, in fact the question resolved itself into one of contention between the two branchesthe Locomotive and the Permanent-way—one asserting that the fault was in the road, and the other that it was in the vehicle. It seems incredible that Mr. Burnett alone should have been unaware of the dispute.

Carriage catching fire through defective fittings and ensuing loss of life.

The subtle distinctions which Mr. Burnett draws in explanation of his promise, and his neglect of that promise, to see that all carriages were properly fitted, are incomprehensible to me. I must ask the Minister to refer to the papers on the subject. Mr. Burnett says, that by a most cursory reference to them it will be seen that the proposed examination was to extend to the condition of the wheels and axles, and had no relation whatever to their position in the vehicles. I must respectfully decline to waste time in discussing such hair-splitting distinctions. Mr. Burnett undertook to examine these carriages, in fact said it would be one of his first duties to do so, and urged (in accordance with his invariable practice whenever called upon to do any particular duty) that some other duty he was asked to see to urgently must be postponed in consequence. I learn that he made no examination of these carriages whatever, sither as morards the condition of the whole and order on the invariable products to the resoluted to the second time of the whole and order on the invariable in fact he resoluted to the resoluted to the second time of the whole and order on the invariable in fact he resoluted to the second time of the whole and order on the invariable in fact he resoluted to the second time of the whole and order or the invariable products the second time of the second ti must be postponed in consequence. I learn that he made no examination of these carriages whatever, either as regards the condition of the wheels and axles, or their position; in fact he neglected to see one of them, which was shown to have the like defect, though Mr. Scott asked him in writing to do so. I must admit that Mr. Burnett points out, with one of his customary refining distinctions, upon which he bases a charge of inaccurate statement against me, that Mr. Scott did not ask him to come and inspect the vehicle. Mr. Scott's words were: "The carriage is now lifted, and could be seen by you if convenient."

I can see nothing in Mr. Burnett's statement of this case to warrant the slightest modification of the terms of my previous minute on the subject. I must, however, in connection with it draw attention to the accompanying paper as affording another instance of Mr. Burnett's want of skill as a mechanical engineer. To remedy the defect of the floor of these carriages touching the flange of the wheel tyres, a wooden block (B on the plan) was placed by Mr. Scott between the axle-boxes and the springs. Mr. Scott says, the object was effectually attained by those means, which fact was capable of being very easily demonstrated by simply proving by measurement, that the distance between the flange of the tyre and the under side of the floor was greater than that between the nuts of the spring bolts and the under side of the sole bar, which was all that was necessary to ensure that the sole bars of the carriages (however heavily loaded) would bear upon the nuts of the spring bolts, and so entirely prevent the possibility ever heavily loaded) would bear upon the nuts of the spring bolts, and so entirely prevent the possibility of the floor touching the wheel tyre. Mr. Burnett, however, subsequently gave orders that the wooden block A should be fitted to all the carriages in addition to the previous one B. This was quite superfluous, so far as any element of safety was concerned, but it moreover, as can be seen, has the effect of preventing the necessary play of the spring, and ever since their application there have been complaints of the bumping and disagreeable motion of the carriages when carrying an ordinary load of passengers. I have given orders for the removal of the blocks A.

The professional knowledge of an engineer is not essential to judge of the effect of this unwise addition to Mr. Scott's work; its uselessness is apparent to even unprofessional persons, and its mischievous effect has necessitated its removal. On one occasion the passengers seated in one of these carriages were so alarmed that they stopped the train, and upon its being ascertained that their fears were reasonable they were put into other carriages. The loss of life which occurred in consequence of these defective carriages was as preventable as it was deplorable.

As regards the matter of the Minmi coal waggons, I will pass by as immaterial the distinction which, on such slender grounds, Mr. Burnett draws between his recommendation, and my summary of it, and will refer to the endeavour he makes to show that the observance of his recommendation would not have had the effect I stated. In support of this Mr. Burnett implies, that as he alluded only to those axles "obtained under the same conditions, and that have been subjected to the same usage," the waggons axles "obtained under the same conditions, and that have been subjected to the same usage," the waggons to be stopped would be a few only. Mr. Burnett does not seem to be aware that, with immaterial exception, the axles in use by any one company are all of the same make. When an axle of one of the Government trucks broke on the 6th July last, Mr. Burnett called upon Mr. Scott "to furnish a statement of the number of vehicles with axles of the same make and which from the uses they have been put to are liable to break in a similar manner," with a view, it is fair to assume (if the Minmi case was to form a precedent), to recommend that the running of such waggons should be stopped. From Mr. Scott's reply it will be seen that all our rolling stock (with the exception of ninety-three vehicles first imported) is fitted with axles of the same make and brand. Had Mr. Burnett made a similar inquiry in regard to the axles of the Minmi Company it is possible he would not have made the recommendation he did. Had I accepted

accepted

accepted his recommendation the consequence would have been that, as I stated in my previous minute, the Minmi Coal Company would have stopped working, as they would not have had sufficient waggons to

In reply to the representations I made of the delay caused by Mr. Burnett's refusal to report upon the work-shop additions, which were being carried out at Goulburn, Bathurst, and Penrith, until a survey had been made of the yards and cross-sections supplied to him, Mr. Burnett states, that his opinion that such were necessary is supported by the action taken by Mr. Mason, who stated, in reply to my minute of 17/8/80, asking him to submit his proposed plans of work-shops for the Eveleigh site, "It will be necessary to have a complete survey made of this estate, and sections taken before a design for shops can be laid down." I would ask the Minister's attention to the different circumstances of these cases. In the one case they were old-established and comparatively small railway-yards, the conformation of which was well known, and the question to be decided was whether some additions to the buildings, already erected, were being carried out in the most effective way for the purpose required.

In the other case there were 62 acres of a recently purchased estate, upon which new workshops had to be erected; levels were required to be taken, and the conformation of the ground ascertained.

The exact boundaries were not, moreover, known.

A survey, to precede the preparation of a design for workshops, was as necessary in the one case as it was altogether unnecessary and wasteful of time and money in the other, and Mr. Burnett, in seeking to draw a parallel between the two cases, evinces, I think, a want of appreciation of the merits of

It seems to be unnecessary to refer again to the defective designs which Mr. Burnett has submitted for the workshop additions at Goulburn, Bathurst, and Penrith. Mr. Mason designed the additions that are being carried out, and both Mr. Cowdery (the engineer who is now charged with the duty of designing workshops) and Mr. Scott (the engineer whose duty it is to provide for working them to the best advantage) state, in the most emphatic manner, that Mr. Burnett's proposals are on the one hand extravagant and wasteful, and on the other (if carried into effect) would prove dangerous to the employés engaged in these buildings, owing to the limited space between the roads. Mr. Burnett says that the space is equal to, or more than, the space adopted in hundreds of running-sheds in every-day use, but he does not support this statement by reference to any particular running-shed anywhere. He cannot point to one in this or in any of the Colonies having such limited space; and if there be running-sheds in the old Country, in which the spaces are not greater than those which Mr. Burnett would introduce here, it must be in exceptional instances only, caused probably by limitation of room, and rendered workable only by climatic advantages. To require men to work in such confined spaces in a semi-tropical climate would be an unjustifiable proceeding.

In regard to the workshops at Eveleigh, Mr. Burnett states that whatever delay has occurred in connection with the preparation of the plans for them, has been due to the various events which have occurred affecting the control and administration of the Locomotive Branch; but Mr. Burnett is solely responsible for any disturbance to the progress of the business, by his insubordination and refusal to observe the instructions given in the case of driver Frost. I cannot see, however, how Mr. Burnett's plea explains the delay of five months that occurred in getting out these plans, which were so urgently required. The Minister will remember that he repeatedly reminded me of the urgency of the matter, and that I informed him I fully expected every day to get from Mr. Burnett either the improvements or alterations to Mr. Mason's plan, which had been prepared and submitted to him, or some plan which he proposed to substitute for it. I found, however, on his suspension, that nothing whatever had been done in the matter. I may mention further, that since Mr. Burnett's suspension three different designs for these workshops have been prepared, all good, and differing only in degree as to suitability. Tenders will now be invited

have been prepared, all good, and differing only in degree as to suitability. Tenders will now be invited for the works upon the accepted design without any further delay.

It is unnecessary that I should follow Mr. Burnett through the lengthened history he gives of the appointment of the Board of Inquiry. I did not in any way refer to this matter in my paper, and I fail to see the application it has thereto, except, indeed, that it further demonstrates the combative and controversial spirit which Mr. Burnett has imported into the conduct of the business of the Department. Mr. Burnett asks that the papers may be read, in which he explains his reasons for differing from the conclusions arrived at by the rest of the Board. I need only say that if the Board's report and Mr. Burnett's are read in conjunction there will be no question as to the Board having arrived at a right

Mr. Burnett claims that his views in regard to the staff and ticket system are sound, and that the representations he has made from time to time on the subject have had the effect of adding to the security of the system. I am at a loss to account for this latter statement; the staff and ticket regulations, as now existing, were in force before Mr. Burnett came to the Colony, and no alterations whatever have been made in them; there is therefore no foundation for the claim Mr. Burnett sets up of having improved the system. The accompanying reports on this point which, on learning of this claim, I obtained from the Secretary for Railways and the Traffic Manager, will fully dispose of Mr. Burnett's pretensions in this respect.

In regard to Mr. Burnett's statement that he has not involved the Department in unnecessary litigation, I append hereto a letter from the Crown Solicitor on the subject.

I am unable, I regret to say, to modify in any way the opinion which I expressed in my report of the 15th September, "that from the time of Mr. Burnett's appointment to the time of his suspension his conduct has been marked by opposition to the established rules of the Department, by impatience of proper control, by delay in postponing important works, and by general inefficiency and want of judgment."

I will conclude this paper by dealing with Mr. Burnett's assertion that he is not aware of the continual changes in his staff, which I have mentioned as indicating his failure to work amicably with his officers. Mr. Burnett states that Mr. Chambers resigned because, as the papers show, he did not receive so high a step in promotion in the Drawing Office as he, excusably enough, though erroneously, considered himself qualified for. A reference to the papers will show that Mr. Chambers, on tendering his resignation, was informed by Mr. Burnett that his salary had been increased; notwithstanding this, however, Mr. Chambers severed his connection with the Department, because he found it impossible to submit to Mr. Burnett's tyrannical treatment. Mr. Chambers has written to the Chief Clerk of this Department a letter on the subject; but it seems that, even after this lapse of time, his resentment and indignation

indignation are too great to admit of his writing with moderation, and I therefore abstain from attaching Mr. Booth, another gentleman referred to, is in England; his complaints of his treatment at

the hands of Mr. Burnett are notorious, and he preferred returning to England to submitting to it.

Mr. Davies, who was for some time Chief Draftsman in the Locomotive Branch, writes in reference to the reasons for his resigning:—"I have to inform you that Mr. Burnett's conduct was so exceedingly insulting, and his manner of conducting the business of the branch under him so dilatory, that out of respect for myself and to secure my peace of mind I was compelled to resign, although I had no other position to enter upon."

Mr. Burnett says, with reference to Mr. Sutcliffe:—"I should regret exceedingly if I had reason to believe that I had in any own way done him injustice, or stated anything not warranted by the circumstances to lead him to tender his resignation." Mr. Sutcliffe in his letter, which is appended, says:—"Mr. Burnett refrains from admitting, in the slightest degree, that he gave me any cause for resigning. Does Mr. Burnett suppose for a moment that those who were officially brought into contact with him, whilst he had the honor of holding the position of Locomotive Engineer, were dead to all sense of manly feeling? It would appear so when he says, 'the readiness with which Mr. Sutcliffe intimated his intention of leaving led me to the belief that he had other employment in view.' Mr. Sutcliffe adds:—"I can unhesitatingly affirm, without fear of contradiction, that the sole cause of my resignation was on account of Mr. Burnett's arrogant and ungentlemanly conduct towards me.'

The duty imposed upon me of demonstrating, in this way, Mr. Burnett's unfitness for the position of Locomotive Engineer has been far from a congenial one. I may be permitted to say that, personally, it is a matter of indifference to me whether Mr. Burnett is removed from or restored to his office; but regard for the interests of the Service, and the necessity for providing for the effective administration of the business of the Department, require that I should respectfully express my conviction that Mr. Burnett's rejected to hoth

reinstatement would be detrimental to both.

CHAS. A GOODCHAP, 13/12/81.

$\lceil Enclosure. \rceil$

The Commissioner for Railways to The Crown Solicitor.

Minute Paper.

Subject :- Conduct of Mr. Burnett re his action involving the Department in actions-at-law unnecessarily.

Subject:—Conduct of Mr. Burnett re his action involving the Department in actions-at-law unnecessarily.

In formulating certain charges against Mr. Burnett I said:—31. "There are a number of comparatively minor matters connected with Mr. Burnett's administration of his branch which might be mentioned as affording additional evidences of his inability to properly conduct it—his treatment of the contractors; the involvement of the Department in action-at-law, to which the Crown Law Officers have advised, we had no defence whatever, resulting in our having to pay the claims in full with costs, &c., &c." To which Mr. Burnett has replied:—"As regards paragraph 31, I beg to submit that my treatment of the contractors has been in every case proper, and in accordance with my official position and duty; while in regard to the only actions-at-law (two in number connected with matters in my branch with which I am acquainted, it will be found by a perusal of the papers, that both actions arose out of the extreme looseness of the terms of the agreement with the contractors, for the drawing up, and execution of which, I am in no way responsible. The first action was brought by the contractor, with the specific object (as the papers show) of having it determined, at the hands of a jury, what the terms of his contract really were under the above agreement; while in regard to the second action, although it was ultimately decided that the contractor's claim for extra payment for work, which had not (as I think the papers show) been fully performed by him, could not be resisted, in consequence of the terms of an offer of extra payment that had been made to the contractor; yet that decision was not arrived at until, on the advice of the Crown Solicitor, the matter had been referred for the opinion of two of the most eminent counsel in Sydney."

Sydney."

I shall feel obliged if the Crown Solicitor will say if the question of the right of the contractor to be paid the amount he demanded, and for which Mr. Burnett withheld his certificate, was ever really in doubt. It will be seen that the following was the Minister's minute on the subject when the letter of advice from Crown Solicitor was received:—

"The amount had better be settled without any further delay; indeed I fail to see why such delay and expense should have been incurred with such meagre grounds as existed in this case."

I would also ask the Crown Solicitor to say whether in his opinion, after perusing the papers in the case, the Department was not needlessly involved in actions at-law.

ment was not needlessly involved in actions-at-law.

Снаs. A. G., 5/12/81.

The Crown Solicitor to The Commissioner for Railways.

Sir,

I have the honor to return herewith your minute of date, 5th December instant, and the papers forwarded therewith relating to the action, Castner v. The Commissioner for Railways; and in reply to your question as to whether the right of the contractor to be paid the amount demanded, and for which Mr. Burnett withheld his certificate, was ever really in doubt, to state that as I informed you when the papers were submitted to me, I never had any doubt of the plaintiff's right to recover

to recover.

My reasons for taking counsel's opinion in the case were these: The action then pending was the second action brought in respect of claims made by Mr. Castner under his agreement for lighting the railway carriages with gas. I thought, from the papers forwarded, that there was really no defence, but, as the Locomotive Engineer refused to certify for the work in respect of which the claim was made, on the ground that it could or should have been done for a less price than that claimed under the agreement, and that he would probably refuse on the like grounds in respect of any work done in the future, it was desirable that the question, as to your liability under the contract, should be finally settled; and as I had upon receipt of the summons retained counsel on your behalf, I thought it was advisable to take their opinion as to whether the action could be defended. This I did, and forwarded a copy of the opinion to you with my letter of 12th June last.

I do not understand what is meant by the statement in Mr. Burnett's memorandum, that an offer of extra payment had been made to the contractor; according to my recollection the plaintiff was paid only that amount to which he was entitled by the contract under which the work was performed by him—that is, the contract price,—and which he would have recovered in the action, even if the amount is, as appears to be the opinion of the engineer, unreasonable.

I have, &c.,

I have, &c., JOHN WILLIAMS, Crown Solicitor.

Mr. D. Vernon to Mr. G. Berner.

Mr. Vernon's reply re Mr. Burnett's statement, that he had added to the security of the staff and ticket system. 29 November, 1881

In reply to your inquiry as to "in what way Mr. Burnett has added to the security of the staff and ticket system, &c.," I may say at once that I am entirely ignorant of his ever having done, or been in the remotest degree instrumental in doing, anything of the kind. I do know, however, and the papers will speak for themselves, that the suggestions and

representations which Mr. Burnett did make in writing, revealed the fact that he did not understand the subject; and I say most emphatically that had these suggestions been adopted the security of the system would have been completely sacrificed, and the first intimation the country would possibly, and in time, have received of this fact, would have been the wreck of one of

our mail and passenger trains.

I know, furthermore, that Mr. Burnett has, by his verdicts and punishments on the men of his branch concerned in cases of neglect, not only shown that he did not adequately perceive where the gravity of an offence lay, but if he has done anything he has weakened the force which the rules should have on the staff. I think, on referring to the papers, that from a sense of this I called attention to the matter in a minute which led up to the appointment of the Board, &c.

Mr. Burnett's views with regard to the staff and ticket system are utterly unsound, and the representations he has made would have had (if effect had been given to them) the effect of entirely destroying the safety of the system. This I say Yours, &c., Yours, &c., D. VERNON.

Mr. W. V. Read to Mr. G. Berner.

Dear Sir,

I am in receipt of yours of to-day, enclosing statement of Mr. Burnett re train staff and ticket system.

The staff and ticket rules and regulations as approved in 1878 are now in force; no alteration has been made in them at Mr. Burnett's instance. Some suggestions were certainly made by Mr. Burnett some time back, and about eighteen months ago the Commissioner appointed a Board, consisting of Mr. Burnett, Mr. Vernon, Mr. Higgs (Traffic Manager, G.N.R.), and myself, to report upon them, but the suggestions made by Mr. Burnett were found to be impracticable, and in fact would have been dangerous to the system if allowed.

Mr. Burnett, who was Chairman of the Board, never called it together after its first few meetings to complete or close its proceedings.

W. V. READ.

Mr. H. Davies to The Chief Clerk.

Sir,

In reply to your inquiry as to why I resigned the position formerly held by me as Chief Draftsman in the Locomotive Department of the New South Wales Railways, I have to inform you that Mr. Burnett's conduct was so exceedingly insulting, and his manner of conducting the business of the branch under him so dilatory, that out of respect for myself and to secure my peace of mind I was compelled to resign, although I had no other position to enter upon.

I have, &c.,

H DAVIES

H. DAVIES.

Mr. G. Berner to Mr. F. Sutcliffe.

Dear Sir,

Mr. Burnett, in reply to a statement of the Commissioner's as to the continual changes of the staff in Mr. Burnett's Branch, having reported to the Governor and Executive Council that,—

"With reference to Mr. Sutcliffe I should regret 'exceedingly if I had reason to believe that I had in any way done him an injustice, or said anything not warranted by the circumstances to lead to his tendering his resignation. The readiness with which Mr. Sutcliffe intimated his intention of leaving led me to the belief he had other employment in view; whether this was so or not, I learned that shortly afterwards he entered upon other employment at a higher rate of pay",—

The Commissioner will be glad to know if your severance from the Department was for the reasons given by Mr. Burnett, as your letter of 29/7/81, intimating that you had resigned your position, does not bear out Mr. Burnett's statement.

I am desired to request you to consider this matter dispassionately, and not allow any feeling of irritation (if there be any) to influence you. Mr. Burnett is, as it were, upon his defence, and the Commissioner does not wish to prejudice the case, and asks you to say nothing until after full and calm deliberation, and making due allowance for what may be merely mannerism on Mr. Burnett's part. Awaiting your early reply,

GEO. BERNER,

I remain, &c.,
GEO. BERNER,

Chief Clerk.

Mr. F. Sutcliffe to Mr. G. Berner.

Mr. F. Sutcliffe to Mr. G. Berner.

Dear Sir,

Denmark Lodge, Cook's River Road, St. Peter's, 1 December, 1881.

In replying to the Commissioner's inquiry as to the validity of the reasons urged by Mr. Burnett in reference to the severance of my connection with the Locomotive Branch of the Railway Department, I feel bound to say that his statement is calculated to mislead. He refrains from admitting, in the slightest degree, that he gave me any cause for resigning. Does Mr. Burnett suppose for a moment that those who were officially brought into contact with him whilst he had the honor of holding the position of Locomotive Engineer were dead to all sense of manly feeling? It would appear so when he says, "The readiness with which Mr. Sutcliffe intimated his intention of leaving led me to the belief that he had other employment in view"; and then, as if to give colour to this interpretation of my motive in resigning, he adds—"Whether this be so or not, I learned that shortly afterwards he entered upon other employment at a higher rate of pay."

I can unhesitatingly affirm, without fear of contradiction, that the sole cause of my resignation was on account of Mr. Burnett's arrogant and ungentlemanly conduct towards me on the occasion referred to in my letter to the Commissioner of 29/7/81. Certainly I had no other employment in view, but if I had permitted comparative certainty of employment to overcome all other considerations, it is easy to judge of the nature of the position in which I should have been placed by submitting to undeserved insult. I may add that I was extremely sorry to leave the Locomotive Branch, the more so from the fact that upwards of eleven years of my experience has been spent in locomotive and railway engineering. However, having been driven, as it were, to sever my connection with that branch of the profession of my choice, it is quite natural that I should at once seek another appointment. With that object in view I therefore offered my services, on the 30th July, to the Harbours and Ri

I remain, &c., F. SUTCLIFFE.

Mr. W. Scott to The Commissioner.

Removal of additional weights from Consolidation Engines.

Removal of additional weights from Consolidation Engines.

I BEG to forward, herewith, reports from Inspectors Tipping and Turton, recommending the removal of the cast-iron blocks (each weighing 2½ tons), which were fitted to the extreme leading ends of the consolidation engines, in order to keep the bogic-wheel on the inner rail from lifting off same in going round curves. This object, however, has not been attained; but great additional wear and tear are involved in the running of the engines in their weighted condition. The road, as well as the engine, generally are prejudicially affected by this useless dead-weight; but the increased wear and tear are particularly apparent in the extraordinary friction between the boss of leading bogic-wheels and the axle-boxes, so that the latter have frequently to be either renewed or repaired by the addition of a brass "liner" \(\frac{\pi}{2}\)" or \(\frac{\pi}{2}\)" thick, and the wheels have sometimes to be taken off the axle, in order to have a washer-plate fixed to the boss of the wheels to make up for what has been worn off them. I therefore beg to recommend that these weights be removed as early as convenient opportunities offer.

W. SCOTT,

7/11/81.

Memorandum from Mr. J. Tipping to The Locomotive Overseer.

Sir,

Government Railways, Locomotive Engineer's Branch, Penrith Station, 17 October, 1881.

I beg to call your attention to the axle-box taken from the bogie bearing of consolidation engine No. 138, and forwarded to Sydney on Saturday last. Several axle-boxes of consolidation engines have been worn on the side in the same manner. This is mainly due to the additional weight put in the front and over the bogie bearings of these engines. Since this additional weight was put on these engines these bogie bearings have given considerable trouble; the great weight being in the front and at the extreme end causes a considerable amount of extra side-thrust when passing over change curves, much more so with than without the weight, and this together with the fact that the engines do not travel round these curves so smoothly with as without this weight, and the object for which I believe it was put on, viz., to prevent the bogie wheel from lifting off the low rail not being accomplished, causes me to consider that the engines would be benefited by the removal of this weight, and I beg to recommend the same.

I would suggest that the bogie-springs remain with the same number of plates in them, as it is important that these engines should be kept up in front to the standard level, and this was found difficult to do with the original springs with less number of plates, owing to the springs either breaking or loosing their camber.

J. W. TIPPING.

J. W. TIPPING, 17/10/81.

Memorandum from Mr. J. Turton to The Locomotive Overseer.

Sir,

Government Railways, Locomotive Engineer's Branch, Bathurst Station, 4 November, 1881.

I have to report that the extra weight placed on the front of the American consolidation engines for the purpose of keeping the wheels on inside of curves from lifting has not the desired effect, but causes considerable extra wear and tear on the bogic boxes and the bosses of the wheels, through the extra pressure exerted on the outer rails of curves. I also find there is a greater tendency of the nuts of bogic centre-pins to slack back, and considerable extra deflection of the leading springs. I would therefore recommend that the weights be removed.

Minute of Commissioner.

My only reason for opposing the introduction of these dead-weights on the bogies was the conviction that they would have the effect of injuring the engines. These reports clearly show that this has been the result.—Сн. A.G.. 10/11/81.

No. 24.

Minute of Colonial Secretary.

So far as I have been able to consider Mr. Burnett's case, I have arrived at the conclusion that his

So far as I have been able to consider Mr. Burnetts of the Public Service.

Services must be dispensed with in the interest of the Public Service.

Much of the correspondence between Mr. Goodchap and Mr. Burnett relates to matters which are matters as forming part of a long course of official conduct. The question small in themselves, and only important as forming part of a long course of official conduct. The question for the Government to decide is whether Mr. Burnett's retention in his office will be beneficial and not prejudicial to the working of the branch of the Railway Department over which he has been placed. It is clear to me that he has evinced qualities which in a large measure unfit him for the management of the class of men who have been under him, and in dealing with whom tact, consideration, and a conciliatory manner are important.

I am of opinion that this inquiry clearly shows that it is not for the public interest that Mr.

Burnett should be continued in his present office.

December 28, 1881.

I am, &c., HENRY PARKES.

No. 25.

Minute of Secretary for Public Works.

I HAVE made a careful examination of the whole of the circumstances connected with Mr. Burnett in his official capacity as Locomotive Engineer, and regret to have to state that I can arrive at no other conclusion than that it would be most prejudicial in the interests of the Department that that gentleman should continue to fill the office which he has hitherto occupied.

J.L., 4/1/82.

No. 26.

Mr. R. H. Burnett to The Secretary for Public Works.

Sydney, 9 January, 1882. Sir,

I have the honor to tender my resignation as Locomotive Engineer.

In doing so, however, I desire to state that I do not admit that I have deserved the complaints that have been made against my management of the branch under my charge, having all along faithfully performed the duties of the office with the sole desire of furthering the interests of the Department in I have, &c., ROB. H. BURNETT. every way.

Mr. Burnett's resignation of the 9th instant will be accepted.—J.L., 10/1/82. Prepare minute for the Executive Council accordingly.—J.R., 11/1/82.

No. 27.

Minute for Executive Council.

Department of Public Works, Sydney, 12 January, 1882.

Reference to the Executive Council Minute, dated the 30th August, approving of the suspension of Mr. R. H. Burnett, the Locomotive Engineer in the Railway Branch of this Department, the Secretary for Public Works, having perused the paper containing Mr. Burnett's defence, and the Minutes thereon of the Commissioner for Railways, regrets to have to state that he can arrive at no other conclusion than that it would be most prejudicial to the interests of the Department if Mr. Burnett should continue to fill the office of Locomotive Engineer. the office of Locomotive Engineer.

Mr. Burnett having submitted his resignation by letter dated the 9th instant, the Secretary for Public Works recommends its acceptance.

JOHN LACKEY.

The

The Executive Council having fully considered the subject herein set forth, concur in the opinion expressed by the Honorable the Secretary for Works, and advise that the resignation of office tendered by Mr. Burnett be accepted.—Alex. C. Budge, Clerk of the Council.

Min. 82-5, 17/1/82. Confirmed, 24/1/82. Approved.—A.L., 17/1/82.

No. 28.

The Clerk of the Executive Council to Mr. R. H. Burnett.

Sir, Executive Council Office, Sydney, 17 January, 1882.

Referring to former correspondence on the subject of your suspension from official duty, I am now directed to inform you that His Excellency the Governor, under the advice of the Executive Council, has approved of your resignation of office being accepted.

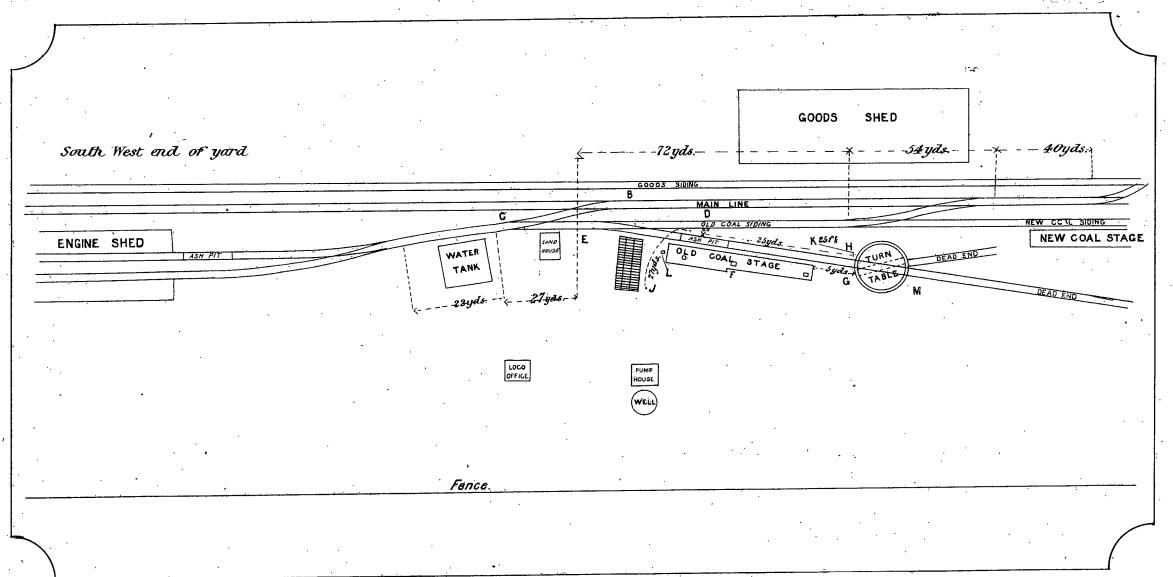
I have, &c.

ALÉX. C. BUDGE, Clerk of the Council.

[Di ıgram.]

Sydney: Thomas Richards, Government Printer.—1884.

[1s. 9d.]



LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY DEPARTMENT.

(APPLICATIONS FOR EMPLOYMENT BY J. R. MILES.)

Ordered by the Legislative Assembly to be printed, 13 March, 1884.

RETURN to an Order of the Honorable the Legislative Assembly of New South Wales, dated 19th February, 1884, That there be laid upon the Table of this House,-

"Copies of all correspondence, letters, papers, &c., connected with the

"application of John Roxburgh Miles for employment in the Railway

"Department."

(Mr. A. G. Taylor.)

No. SCHEDULE. 1. J. R. Miles to Commissioner, applying for a clerical appointment in Railway Department, and minutes the 30 July, 1880	PAGE.
 J. R. Miles, renewing application, and Commissioner's minute thereon. 18 October, 1880 Commissioner to J. R. Miles, informing him that he cannot hold out any hope of his receiving employment in Railway Department. 25 October, 1880 	2

No. 1.

Mr. J. R. Miles to The Commissioner for Railways.

Sir, Cowper-street, Stanmore, 30 July, 1880. I have the honor to apply that I may be appointed to a clerical position in the Department of Public Works.

I may state that I was in the Government Service for twenty-four years.

For the last eighteen years I was employed in the Telegraph Department, at a salary of £300 per annum, under the direction of the Superintendent of Telegraphs, and I think I discharged my duties satisfactorily as a public servant.

The Hon. the Postmaster-General has written officially to your Department asking that employment might be given me; and, in conclusion, I trust that you will take into consideration my length of service and the immaculate character that I have hitherto borne, that you will be pleased to re-instate me into the Government Service. I have, &c.

J. R. MILES. I can refer to the following gentlemen:—The Hon. J. Watson, The Hon. S. Samuel, T. G. Dangar, Esq., M.P., H. Clarke, Esq., M.P., J. Hurley, Esq., M.P., E. Lee, Esq., Reform Club, the Hon. J. F. Burns, late Postmaster-General, S. H. Badgery, Esq., M.P., J. McElhone, Esq., M.P., J. M'Intosh, Esq., M.P., D. O'Connor, Esq., M.P., Thos. Garrett, Esq., M.P., E. Barton, Esq., M.P., and many others.

Minute of Commissioner.

I am not aware of there being any vacancy at present, but Mr. Miles' name may be favourably noted for employment if the Postal Department be not aware of any reason why it should not be. Mr. Lambton will perhaps favour me with his views.—Chas. A. G., 3/8/80. There is no record of any such letter as Mr. Miles refers to having been sent by the Postmaster-General to the Railway Department. As Mr. Miles was an officer of the Telegraph Department, these papers are referred to Mr. Cracknell for his remarks.—S.H.L., 6/8/80. It will be remembered that Mr. Miles was dismissed this Department, there being a deficiency in his accounts which he could not account for. I know nothing of the letter referred to.—E.C.C., 9/8/80. The Secretary, General Post Office, B.C. The Commissioner for The Secretary, General Post Office, B.C.

The Commissioner for Inform I can hold out no prospect of employment under this Railways.—S.H.L., B.C., 10/8/80. Letter written, but not sent away.—17/8/80. Department.—Chas. A. G., 13/8/80.

Note.—The letter was not sent away, as it is believed Mr. Miles called and was informed verbally.

No. 2.

Mr. J. R. Miles to The Commissioner for Railways.

Cowper-street, Stanmore, 18 October, 1880. I have been strongly recommended by the Hon. W. Burns to renew my application for Sir, employment in the Railway Department.

I would respectfully point out that I am willing to accept temporary employment for the present,

until some suitable vacancy should occur.

I may mention that up to the time my services were dispensed with there was not a single charge entered against me in the books of the Telegraph Department.

I have, &c., J. R. MILES.

See Mr. Cracknell's minute of 9/8/80. In the face of that minute, made by the Head of the Department to which Mr. Miles referred, I cannot hold out any hope of Miles being employed in the Inform.—G.B., 23/10/80. Railway Department.—Chas. A. G., 22/10/80.

No. 3.

The Commissioner for Railways.to Mr. J. R. Miles.

Department of Public Works, Railway Branch, Sydney, 25 October, 1880. In reply to your letter of the 18th instant, renewing your application for employment in this branch of the Public Service, I have the honor to inform you that I cannot hold out to you any hope of I have, &c., CHAS. A. GOODCHAP, receiving an appointment under this Department. Commissioner for Railways.

Sydney: Thomas Richards, Government Printer.-1884.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

MESSRS. T. R. SMITH & CO.

(MONEYS OWING TO THE GOVERNMENT BY.)

Ordered by the Legislative Assembly to be printed, 13 February, 1884.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 23rd October, 1883, That there be laid upon the Table of this House, a Return—

"Of all moneys or amounts of moneys owing by T. R. Smith and Sydney "Smith, trading as T. R. Smith & Co., Auctioneers, which were owing by the said firm to the Government for demurrage, and the amount or amounts allowed as refund to them or any other person so indebted up to "July this year."

(Mr. Melville.)

RETURN showing the amount of demurrage owing by T. R. Smith and Sydney Smith, trading as T. R. Smith & Co., and the amount of refund made to them as well as to any other person so indebted, from 1st February, 1881, to 31st July, 1883.

Amoun	t of Demurrage owing.	١	Refunds made.											
Station.	Name of Person indebted.	Amount.	Station.	To whom refunded.	Amount.									
Darling Harbour	T. R. & S. Smith	£ s. d. 8 0 0*	Newtown do	T. R. & S. Smith Wells & Smith Bros. do Wells & Co. Dent & Hoskin J. Mitchell do Newtown Council C. Gentle J. S. Martin Geo. Barr R. Fowler Hawke & Plumb S. Proctor — Petersen S. Smith Inglis & Son G. Wells A. H. Prince Service J. Wood — Phillips	£ s. d 11 17 6 45 0 6 0 10 6 0 12 6 22 7 6 16 15 6 13 15 6 14 15 6 8 10 6 8 5 6 7 5 6 5 2 6 3 0 6 2 12 6 0 10 6 8 15 0 4 1 3 2 15 0 1 10 0 1 5 0 0 15 0 0 10 0									

^{*} The Messrs. T. R. & S. Smith claim that this amount is settled by set-off. This claim for set-off is being inquired into.

1883.

(THIRD SESSION.)

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY STATIONS AND PLATFORMS.

(PARTICULARS OF TRAFFIC, &c.)

Ordered by the Legislative Assembly to be printed, 7 December, 1883.

RETURN to an Order of the Honorable the Legislative Assembly of New South Wales, dated the 18th October, 1883, That there be laid upon the Table of this House,—

- "(1.) The names of all stations on the railway lines of the Colony, on the
- "31st December, 1882, at which the gross earnings did not exceed £1,000
- "for that year, and the lines on which they are situate, specifying in each
- "case the amounts respectively received from inward and outward goods
- "traffic, inward and outward coaching traffic; the gross amount so received,
- "the number of employés engaged, and the amount paid in salaries and "otherwise.
- "(2.) The like information in respect of all platforms having a porter in "charge.
- "(3.) The dates when such stations were established and platforms had porters placed in charge; with the like information as to the receipts, &c.,
- "for the twelve months immediately preceding and following the establish-
- "ment of such stations and the placing of porters in charge."

(Mr. Abigail, for Mr. Gould.)

RAILWAY STATIONS AND PLATFORMS.

RETURN of Stations and Platforms having Porters in charge on Great Southern and Western Railways, on 31st December, 1882, at which the gross earnings did not exceed £1,000 for that year, together with the earnings for twelve months preceding and following the establishment of such Stations and Platforms.

Platforms having Porters in charge.	Traffic during 1882.				Line on	Date on which	Traffic for twelve months preceding the placing of Porter in charge.				Traffic for twelve months following the placing of Porter in charge.					Number Employés.	Amount paid		
	Coaching.		Goods.			which platform is situated.	Porter was placed in charge.	Coaching. Good		ds. Total.		Coaching.		Goods.		Total.	Kum	in salaries, &c during 1882.	
	Outwards.	Inwards.	Outwards.	Inwards.	Total.			Outwards.	Inwards.	Outwards.		Total.	Outwards.	Inwards.	vards. Outwards. Inwards.	of 1	d l		
Eveleigh Merrylands Guildford Bargo Colo Colemans Wingello Fowrang Jerrawa Rocky Ponds Harefield Sandy Creek Bringagee Beabula Jelenbrook Linden Wentworth Falls Mount Wilson Clarence Locksley Wimbledon Mullion Creek Kerr's Creek Mary Vale Murrumbidgerie Frangie Ballast Siding	195 211 4 7 171 162 150 23 5 70 77 196 261 66 194 141 179 12 236 332 4	£ 555 114 2222 1 277 4 47 1300 1200 255 134 138 411 640 374 125 132 150	£ 158 291 28 74 176 298 57 9 276 49 237 89 2 119 212 163 155 224 12 103 195 2	£ 15 344 157 1 13 13 44 47 53 4 47 53 4 20 40 232 97 38 44 16 27 6136 90 90	£ 592 \$11 \$81 2 72 91 274 646 392 109 638 393 634 73 291 38 878 986 530 608 472 569 608 863 136 209	Suburban		31 58 A 	1 38 38 38 38 38 38 38	## ## ## ## ## ## ## ## ## ## ## ## ##	20 4 n charge. do do do 22 8 n charge. 17 n charge. do do do do do do do do do do do do do	66 141 305 103 195 61 209 638 2,050 390 430 286 1,277	261 106 77 24 24 1 1120 92 24 7 10 7 16 232 14 121 196 176 20 236 332 20 20	£ 6 30 48 83 168 109 110 9 64 68 164 94 76 106 124 153 200 331 458	£	#	£ 267 258 144 1 70 891 1,634 249 126 672 233 102 233 826 1,270 592 589 481 58 608 863 1,231 882	6112212223213142333213222222	862* 156 134 232 270 16 112 250 224 217 171 124 125 62 392 223 245 229 274 227 13 160 133 118 154 46
Ravensworth (Station) Paroo Woodford Wingen Doughboy Hollow Kentucky Purrawan	260 246 244 156	187 142 145 189 123 73 26	160 171 231 176 176 278	88 12 33 127 128 132	637 585 655 .736 583 607 53	Northern do do +do +do +do +North-west	GREAT NORM May, 1869 March, 1882 December, 1881 May, 1880 , ,,, August, 1882 October, ,,	234 130 215 56 A	lways had 133 104 128 89	1 Porter in 85 96 165 38 1 Porter in 1	10 14 64 58	462 344 572 241	141 272 253 289 118 353 90	81 134 154 200 89 204 69	124 186 232 326 38 368 60	73 35 35 111 62 323 12	419 627 674 962 307 1,248 231	2 1 1 2 2 2 2 2	278 111 152 285 192 80 53

There were no stations on Great Southern and Western Railways at which the gross earnings did not exceed £1,000 for the year 1882. It may be mentioned that employes are necessary at the platforms marked † whether there is any traffic at the one, as they are staff stations. *Includes wages of block signalmen.

1883-4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY STATIONS, SIDINGS, AND BRIDGES.

(EXPENDITURE, ACCOMMODATION, &c., FOR 1881 AND 1882.)

Ordered by the Legislative Assembly to be printed, 20 May, 1884.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 23rd October, 1883, That there be laid upon the Table of this House,—

"A Tabulated Return showing how the money voted for alterations and "additions to Railway Stations, Sidings, and Bridges, on existing lines has been expended for the years 1881 and 1892; together with the accommodation given in each case, distinguishing those works carried out by contract and the amount in each case from those carried out by day "labour."

(Mr. Poole.)

RETURN of Expenditure for Alterations and Additions to Railway Stations, Sidings, and Bridges, during the years 1881 and 1882.

SUMMARY.

· Line.	Year 1881.	Year 1882.
North and North-western South and South-western Western Wallerawang and Capertee Richmond	83,582 12 1 52,434 15 11	15,606 3 9 91,344 6 6 56,740 14 8 789 12 1
	£147,133 2 5	£172,098 13 G

NORTH AND NORTH-WESTERN LINES.

RETURN of Expenditure for alterations and additions to Railway Stations, Sidings, and Bridges, during 1881 and 1882.

(All the material used in works carried out by day labour was supplied under contract)

Description of Work.	Accommodation given.	How carned out	Amount expended in 1881	Amount expended in 1882
Machinery, Tools, &c			£ s. d	£ s. d 4 1
Vewcastle:— Additions to goods shed office Interlocking apparatus and box Alterations to siding, Burwood	Office 20' x 12' 6", desk, shelving, and fittings 1 box 25' x 7' 6", 5 signals, levers, rods, &c 3 chains of siding taken out and relaid	Day labourdo . do .	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	621 5 5 88 17 1
Sand furnace	13 chains 3-rail fence 19 feet x 16 feet	do do		43 5 1 143 0
T. S. Point:— Sidings to station, ballasting, &c.,	150 yards new siding, 2 new lamps	do	393 17 8	9 9
gas lamps. Siding to workshops Extending down platform Mortuary station and siding	480 yards new siding	do do do	457 4 9	39 13 3 102 12 3 473 17
New workshops, permanent-way	12' x 8', tacket office 10' x 9', siding 6½ chains long. Smiths' shop 60' x 41', machine shop 60' x 41'	do		2,310 13 1
Laying new siding	carpenters' 80' x 41'. 180 yards new siding Shops 150' x 82' 8 ros 14' x 14', 4 rooms 14' x 7', fittings, &c	do do do		236 0 611 10 920 6 2 16
Water supply	Desks, cupboards, shelving, and entrance gates 2,000 super. yards levelled and metalled, and 950 feet	Day labour. do	 	822 18 70 13 495 0
Tank Sidings Crane	galvanized fence erected. 20 yards new siding	Day labour do		$\begin{array}{ccc} 1 & 7 \\ 19 & 10 \\ 118 & 5 \end{array}$
Sullock Island Junctron and Dyke — Sidings, ballasting, &c Office for Traffic Branch Fence Interlocking signal-box, and signal.	870 yards additional siding	do do do	2,657 11 10 76 15 0	514 18 26 19 173 4 1
&c. Tank nterlocking gear, Newcastle to West Martland.	20,000 gallon tank			34 2 5 2
Vickham:— Widening Hannell's Crossing	Widened to 26 feet	Day labour	50 15 11	
Tamilion — Goods siding Goods shed Laying coal line and wilening bridge, Waratah to Coal weigh	Goods-shed 50' x 21', siding 150 yards long 35 chains additional siding	do	577 13 5	2,033 5 5 11
budge. Waratah —	1 room 13½ x 12', 1 do 12' x 8', 1 do 10' x 8' Brick office 16½ feet x 13 feet, verandah 16' x 8', with necessary fittings.	Day labour do	117 9 3	 182 1
Sandgate — Platform and waiting-shed	Platform 200 feet long, waiting-shed 14' x 14'	do ,,	8 13 4	4 3
	Platform 200 feet long, wasting-shed 12' x 13'. 27 chains of new siding	do . do	424 9 11 723 5 4 13 15 8	1 6
Hexham Tourship — Waiting-shed Booking-office Loading wharf I'orter' residente	Shed 15 feet x 12 feet	Day labour do do do	60 5 10 4 0 0	96 15 77 19 424 15
W C and urinal Woodford — Booking-office	W.C 8' \ 3', urinal 8' x 5' Weatherboard office 8' x 8', with fittings	do		49 2
BOOKING-OINCE East Martland:— Chane Extending siding	New 5-ton crane	do . do do	59 18 1 511 7 9	27 1 12 14 11 10
Retaining-wall, Melbourne St West Maitland.— Widening Steam and Elgin Sts	6 92 chains of wall 4 6 x 14	do do	203 7 11	136 5
gas lamps. Extending siding Traverser and dray weighbridge Station-master's house, fence, &c.	lamps erected. Siding extended 150 yards Traversers to lift 10 tons, and 5-ton weighbridge. Two-storey brick building, containing 9 100ms, with	do do	131 2 9 64 19 3	587 18 - 89 5 1,107 18
fitting-in stove, &c Wicket gate Worpeth Branch, Morpeth —	l all, and all necessary conveniences New wicket-gate	Day labour		5 4
Lomp 100m . Siding, goods, &c Crane Stockyards and sheep do	Lamp-100m 12' x 10'	do do do do	69 14 3 497 11 10 194 14 9	51 18 21 1

NORTH-AND NORTH-WESTERN LINES-continued.

Description of Work.	Accommodation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
Allandale ·—			£ s. d.	£ s. d.
Ticket-office and goods shed Goods siding	Office 12' x 12', goods shed 37' x 16'	Day labour	• • • • • • • • • • • • • • • • • • • •	$\begin{array}{cccc} 41 & 12 & 5 \\ 1 & 1 & 6 \end{array}$
Vollombi Road : Platform	Platform extended 50 feet 1 15-feet signal erected	Day labour	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
Stony Creek :— Land for sheep and cattle yards	3 acres purchased	do	177 17 8	************
Freta : Fencing, wicket-gate, and lamps	Wicket-gate and 2 oil lamps fixed	l i	10 11 5	***********
Branxton — Siding	Siding extended 56 yards		59 9 7	10 16
Singteton Siding Gas to station buildings	Siding extended 130 yards	do do .	145 7 10 94 13 7	- 178 9 4 50 14 9
Fencing Commissioner's ballast land Goods shed			,	1 6 3
Fleanies' Crcek — Water supply	1 1,200-gallon tank	Day labour		21 8
Ravensworth .— Ludies' waiting-room	Brick building 14' x 12', with necessary fittings	do	128 6 6	164 18
Musclebrook:— Kitchen to gatehouse Extending siding	Weatherboard building 12' x 12'	do	33 1 0 6	******************
Culvert, &c	Siding extended 300 yards 5 feet culvert extended 30 feet	do	274 15 5 58 8 0	8 16 4 156 0
Gate-keeper's box	2,000 gallons galvanized tank and brick tank	do do	***	25 8 24 18
Plood Openings 85 & 31 & 88.35 — Do do .	1 12-feet opening	do	70 ′9 7	
1berdeen:— Goods shed Level crossing near Wingen:—	Corrugated iron shed 31 feet x 16 feet Ordinary accommodation crossing	do		163 7 59 0
W C. and urinal	W.C. 9' x 3\frac{1}{2}', urinal 9' x $5\frac{1}{2}$ '	do do	46 10 6	188 7
Stanford — Ticket office and Ladies' room	Brick building, office & ladies' room each 12' x 12', with necessary fittings.		262 10 2	
Aurrurundi Water supp'y	Siding extended 460 yards 3 additional rooms, each 12' x 10', with fittings, &c	Day labour do	430 13 4 215 16 7	2 19 42 14
W.C. and urmal	W.C. 8' x 3½', urinals 8' x 5'	do do		37 15
Fence, station-master's house Flood Openings at 175 50 .—	50 feet batten fence and 3 chains painting fence	do	15 15 4	
Do do Villow-tree ·—	1 8-feet opening, 1 9-feet opening, and 8 3-feet opening	do	61 1 5	
Verandah to station Verris Creek:—	Verandah 33' x 6'	do	•••••	18 13
Sinking well	Well sunk 60 feet	ob	*** *** **	62 6 27 15
Repairing water fittings Lamps, &c , footbridge	2 gas lamps erected	Day labour		1 2 (15 19 (
Gas, station buildings	% % % % % % % % % % % % % % % % % % %	do		12 12 84 12
Valcha:— Level crossing	12-feet crossing	do		31 11 3 1 10 0
Tentucky:— Loading stage	Wood stage 66' x 8'	do		89 11
Gate	12-feet gate	do	••••••	7 18 8 0 13 8
Do do	Station signal and 2 distant signals erected	do	123 11 5	•
Wool stage	Timber stage 66' x 8'	do		23 13
Porter's cottage	6 weatherboard cottages, containing 4 rooms each, with necessary conveniences.	do		525 6
Loco. cottage Wool and coal stage	Do. do do 1 wooden stage 74' x 16', 1 do 72' x 8'	do		528 16 3 132 5 9
New running shed Water supply- Supplying work- men with water.	4 400-gallon tanks	Day labour		3 18 0 26 18 2
Terris Creek — Stockyard	New yard 20' x 20', with race	do	42 17 5	****
unnedah : Well	Well sunk 77', and partly lined with brick	do	120 10 3	

SOUTHERN AND SOUTH-WESTERN LINES.

RETURN of Expenditure for alterations and additions to Railway Stations, Sidings, and Bridges during 1881 and 1882.

(All the materials used in works carried out by day labour was supplied under contract.)

New paling fence 280 panels of fence 2		Description of Work.	Accommodation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
Dardon D	••••					<u> </u>
New controls New	Darling	Harbour:—	•		2 5. u.	2 5. u.
New semaphore 20 wooden signal 20 wooden signal 20 wooden signal 20 west and of 20 wooden signal 20 wooden sign			Foundations for foot overbridge			**********
New urinals and water closets	Ne	w footbridge :	Foot-bridge 177' long 9' wide	Dowlohous		
New woolshod, Ac., goods shed, Woolshod, 280 6 x 330, correct only alternated from hydrausts. New paling fence			Structure at end of wool shed containing 5 closets and	yo Day iabour		l .
New paining fence. New paining fence. New saining between Milk Road and swhard. New statem owne. New statem owne. Approaches to Strucks. Opening entrance into Pier-struck. Additional office accommodation. Clearly and between Milk Road and swhard. Additional office accommodation. Clearly and between Milk Road and swhard. New statem owne. Additional office accommodation. Clearly and between Milk Road and swhard. New statem owne. Additional office accommodation. Clearly and between Milk Road and swing and between Milk Road and swing. New stidners, coal siding, s	2.0	w drinkers and water stoods with	7 urinals emptying into sewer; 2 closets and 6 urinals under foot-bridge.		200 20 2	••••
New pains fance New adding between Milk Road and Strucks New adding between Milk Road and Strucks New order's coun. New porter's room. New porter's room. Approaches Opening entrance into Pier struct. Additional office accommodation. Order than control of the strucks Opening entrance into Pier struct. Additional office accommodation. Order than control office of the structs New strings, coal siding, siding has traffic. Waggon repairing shop. Weatherboard building 24v x 14' 6' Weatherboard building 24v x 14' 6' Weatherboard building 24v x 14' 6' New steriors. New structs New seven server. Retaining wall, Devonshire-street Retaining wall, Devonshire-street Retaining wall, Devonshire-street Retaining apparatus Differ stops and carriage siding side and carriage side of the structure	Ne		outside platform 60' by 12'; tenders fixed to goods shed at all doors; 56 hydrants fixed with 3,649' C.I.	do	819 17 3	1,560 11 10
New covered platform New ading between Milk Road and Starting and Investing compacts New poter's room. Approaches Opening entrance into Pierstroen. Additional office accommodation. Clerk's office 16' x 14', with sliding doors and sitting, hay traffic. Waggon repairing shop. Watch-box Providing and laying blue-store. New goar of the store of the store of the store of the store of the store of the store of the store of the store of the store of the store of the store of the store of the store of the store of the store of the store of the store of the store of the store of Caulteragh-stored, 508 feet long. Watch-box Providing and laying blue-stored New Store of the store of Caulteragh-stored, 508 feet long. Interlocking apparatus Store savor Interlocking apparatus Store of the store of Caulteragh-stored, 508 feet long. Interlocking apparatus Store of the store of Caulteragh-stored, 508 feet long. Interlocking apparatus Store of Caulteragh-stored, 508 feet long. Interlocking apparatus Store of Caulteragh-stored, 508 feet long. Interlocking apparatus Store of Caulteragh-stored, 508 feet long. Interlocking apparatus Store of Caulteragh-stored, 508 feet long. Interlocking apparatus Store of Caulteragh-stored, 508 feet long. Interlocking apparatus Store of Caulteragh-stored, 508 feet long. Interlocking apparatus Store of Caulteragh-stored, 508 feet long. Interlocking apparatus Store of Caulteragh-stored, 508 feet long. Interlocking apparatus Store of Caulteragh-stored, 508 feet long. Interlocking apparatus Water supply, water crane Leng hening Mortwary platform. New dorser, curriage shed Store forman painter. Loco Molitor to program apparatus New stores, curriage shed Store forman painter. Loco Molitor of Caulteragh-stored of the Store of Caulteragh-stored of the Store of Caulteragh-stored of the Store of Caulteragh-stored of the Store of Caulteragh-stored of the Store of Caulteragh-stored of the Store of Caulteragh-stored of the Store of Caulteragh-stored of the Store of Caulteragh-stored of the Store	Ne	w paling fence	280 panels 6' fence	do	143 3 4	***
wharf. New stoam crane New porter's room. Approaches to station_varis. Opening entrance into Pier-street. Approaches to station_varis. Opening entrance into Pier-street. Approaches to station_varis. New stoam crane Approaches to station_varis. New stoam crane New porter's room. Approaches to station_varis. Opening entrance into Pier-street. Approaches to station_varis. Approaches to station_varis. Opening entrance into Pier-street. Approaches to station_varis. Approaches to station of the station into the station into the station. Approaches to station of the station into the station into the station into the station into the station into the station into the station into the station into the station into the station into the station into the station into the station of the station into the sta	Ne	w covered platform	Platform 360' x 15', with guttering complete	_		26 17 6
New steam crease New poter's room. Approaches. New poter's room. Approaches. Additional office accommodation. Opening entrance into Fier-stroet. Additional office accommodation. New sidings, coal siding, siding hay traffic. New sidings, coal siding, siding hay traffic. New sidings, coal siding, siding hay traffic. New sidings, coal siding, siding hay traffic. New sidings, coal siding, siding hay traffic. New sidings, coal siding, siding hay traffic. New sidings, coal siding, siding hay traffic. New sidings, coal siding, siding hay traffic. New states of the side o			55 trucks	do	1,221 19 11	
New porter's roons — Approaches: — By lebour. — 90 13 4					958 0 7	Q1 4. 5
Approaches. — Approaches to station-yards. — Opening entreate into Pier-street. Pair of gates for 22 'opening, covered with galtunized Dev labour. — 45 19 1 18 7 8 18 7 8 19 1 18 7 8 18 19 1 18 7 8 18 19 1 18 7 8 19 1 18 7 8 18 19 1 18 7 8 18 19 1 18 7 8 18 19 1 18 7 8 18 19 1 18 19 1 18 7 8 18 19 1 18 7 8 18 19 1 18 7 8 18 19 1 18 7 8 18 19 1 18 7 8 18 19 1 18 7 8 18 19 1 18 7 8 18 19 1 18 7 8 18 19 1 18 7 8 18 19 1 18 7 8 18 19 1 18 7 8 18 18 18 18 18 18 18 18 18 19 1 18 7 8 18 18 18 18 18 18 18 18 18 18 18 18 1						
Opening entrance into Pier-street. Additional office accommodation Clerk's office 16'x 14', with sliding doors and fittings, and the street of the street	An	proaches		•		111 10 4
Additional office accommodation. Clerk's office 16' x 14', with sliding doors and strings, stain master's office, weatherboard, 18' x 14', with fittings. New sidings, coal siding, siding fittings. Waggen repairing shop. Waggen repairing shop. Weatherboard but 6' x 4'	or	ening entrance into Pier-street	Pair of gates for 22' opening, covered with galvanized	Day labour		18 7 8
New sidings, coal siding, siding hay traffic. Waggon repairing shop. Watch-box and beying hier-stone provement, George-street bridge. New sewer Retaining wall, Devonshire-street limber on piles. Interlocking apparatus. Lighting Permanent-way shops. Buffer stops and carriage siding and decks. Water-box and signals interlocked, two signal boxes creeted, on the buffer stops and carriage siding and decks. Water-box and signals interlocked, two signal boxes creeted, on the buffer stops and carriage siding and decks. Water supply, water crane Lengthening Mortuary platform. New traverers, carriage shot. Travers 12' x 12' on 2' x 12' x		_	iron.	_		
New sidnings, coal saiting, sidning hay traffic. Waggon repairing shop. Watch-box watch-box. Providing and laying blue-stone pavement, George-street bridge pavement, George-street bridge. Retaining wall, Devonshire-street strateded of timber on piles. Retaining wall, Devonshire-street strateded of timber on piles. Stone wall from steps leading to station to shunting strateded of timber on piles. Stone wall from steps leading to station to shunting strateded of timber on piles. Stone wall from steps leading to station to shunting strateded of timber on piles. Stone wall from steps leading to station to shunting strateded of timber on piles. Stone wall from steps leading to station to shunting strateded of timber on piles. Stone wall from steps leading to station to shunting strateded of timber on piles. Stone wall from steps leading to station to shunting strateded of timber on piles. Stone wall from steps leading to station to shunting state comes of Calledrage streets, 508 feet long, do not state to the piles strateded of timber on piles. Stone wall from steps leading to station to shunting street strateded of timber on piles. Stone wall from steps leading to station to shunting street str	A d	ditional office accommodation	station-master's office, weatherboard, 18' x 14', with		419 10 0	783 0 5
Magon repairing shop.	Ne	w sidings, coal siding, siding		đo	302 8 3	312 1 8
Wagton repairing shop. Watchebox Sarcheboard building 24' x1' 6'' do 104 12 9 do 21 3 2 2 3 2 2 3 2 2 3]	nay traffic.		-		_ ~
Providing and laying blue-stone pavement, George-street bridge. New sewer Sewer 289 feet long, 20 feet wide, 2' 3" high, consulting shed at corner of Castlereagh-street, 503 feet long. Interlocking apparatus Points and signals interlocked, two signal boxes erected, one 21' x 12', one 21'			Weatherboard building 24' x 14' 6"			
parement, George-street bridge. New sewor. Retaining wall, Devonshire-street Retaining wall, Devonshire-street Interlocking apparatus. Lighting Pormanent-way shops. Buffer stops and carriage siding and decks. Lighting Pormanent-way shops. Buffer stops and carriage siding and decks. Water aupply, water crane. Lengthening Mortunery platform. So to see the service of the service	W	atch-box	Weatherboard box 6' x 4'			
Sewer 289 feet long, 20 feet wide, 2' 3" high, constructed of timber on piles. Sewer 289 feet long, 20 feet wide, 2' 3" high, constructed of timber on piles. Sewer 289 feet long, 20 feet long. Polyabour. Sewer 289 feet long, 20 feet wide, 2' 3" high, construction of timber on piles. Sewer 289 feet long, 20 feet long. Sewer 289 f			1,100 superficial feet paving laid		142 19 3	
Retaining wall, Devonshire-street Stone wall from steps leading to station to shunting lied at corner of Castlerespic-street, 505 feet long. Points and signals interlocked, two signal boxes erected, one 21' x 12', one 21' x 12'. 800 feet piping laid and 192 burners fixed do					•••••	201 16 1
Interlocking apparatus				1.	010 10 7	000 0 1
Lighting Permanent-way shops. Buffer stops and carriage siding and decks. Water supply, water crane. Water supply, water crane. Lengthening Mortuary platform. New traverer, carriage shed. Store-room for drivers. Office for foreman painter, Locomolive Department. Additions to lamp-room. New offices, receiving porters. Improvements, Central office. Lime store. Mortuary better string of the string of the string of the string. Mortuary better string of the string of the string of the string of the string. String of the string of the			shed at corner of Castlerengh-street, 503 feet long.			
Buffer stops and carriage siding and docks. State of dock wall erected, retaining wall in front of came with ticket force on top. 2 double sets dock buffers, 2 single sets do., 3 double ests round-headed buffer stops fixed, and siding accommodation given for 135 trucks. Water supply, water crane			one 21' x 12', one 24' x 12'.	_		183 0 0
some with ticket fence on top, 2 double sets cound-headed buffer stops fixed, and siding accommodation given for 135 trucks. Water crane and foundations do 1917 5 do 1917 15 do 75 6 10 Store-room for drivers with counter 201 feet do 1917 5 do 75 6 10 Store-room for drivers with counter 187 8 2" Weatherboard building 16" x 12", erected and fitted up with counter shelving, &c. Office for foreman painter, Locomotive Department. Additions to lamp-room Extra fittings with counter 14" x 4" 6", covered with zinc New offices, receiving porters' Six offices 6" x 4", with desk and drawers in each. Lime store Extra fittings with counter 14" x 4" 6", covered with zinc Six offices 6" x 4", with desk and drawers in each. Office for foreman painter, Locomotive Department. Additions to lamp-room Extra fittings with counter 14" x 4" 6", covered with zinc Six offices 6" x 4", with desk and drawers in each. Ventilators fixed in roof to give ventilation to offices do 35 2 10 do 4 7 7 11 12 19 3 New offices erected, consisting of ticket office 40" x 20", with fittings complete, strong room, 8" x 8", with safe stands. Clerk's room, 20" x 17", with fittings complete, telegraph office, 20" x 12", with fittings complete, telegraph office, 20" x 12", with fittings, with glass and cedar partition 10 feet high. New platform in front of station 188' long, 28" 9" wide, and flagged with freestone. New platform eastern side of station 477" x 20" 6", flagged. Main departure platform lengthened 81' and 315', widened 10', and flagged with freestone; main arrival platform lengthened 81' and 315', widened 10', and flagged with freestone; main arrival platform lengthened 81' and 315', widened 10', and flagged with freestone; main arrival platform lengthened 81' and 315', widened 10', and flagged with freestone; main arrival platform lengthened 81' and 315', widened 10', and flagged with freestone; main arrival platform lengthened 81' and 315', widened 10', and flagged with flowed platform lengthened 81' and 315', widened 10', and flagge				_		5 932 8 2
Water supply, water crane			same with ticket fence on top, 2 double sets dock buffers, 2 single sets do., 3 double sets round-headed buffer stops fixed, and siding accommodation given			0,502 0 2
Lengthening Mortvary platform New traverser, carriage shed Store-room for drivers Carriage shed Store-room for drivers Weatherboard building 16' x 12', erected and flitted up with counter, shelving, &c. Weatherboard office 16' x 13', with skylight in roof do 167 16 5 Meatherboard office 16' x 13', with skylight in roof do 167 16 5 Meatherboard office 16' x 13', with skylight in roof do 12 1 9 3 14 4 Meatherboard office 16' x 13', with skylight in roof do 12 1 9 3 14 Meatherboard office 16' x 13', with skylight in roof do 12 1 9 3 14 Meatherboard office 16' x 13', with skylight in roof do 12 1 9 3 14 Meatherboard office 16' x 13', with skylight in roof do 35 2 10 Meatherboard office 16' x 13', with desk and drawers in each do 90 12 5 110 7 2 Meatherboard sked in roc'f to give ventilation to offices do 35 2 10 do 35	W	iter supply, water crane		do	1,554 10 6	9 10 6
New traverser, carriage shed Store-room for drivers Weather-board building 16' x 12', erected and fitted up with counter, shelving, &c. Weather-board office 16' x 13', with ekylight in roof motive Department. Additions to lamp-room New offices, receiving porters' Improvements, Central office Lime store Store-room pointer, Locomotive Department. Additions to lamp-room Six offices 6' x 4', with desk and drawers in each	Le	ngthening Mortuary platform	I latform lengthened 201 feet		19 17 5	140 17 10
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Galvanized iron structure 14' x 8'			Six offices 67 x 4', with desk and drawers in each			110 7 7
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Siding and approach roads For 148 additional trucks, with necessary approach roads do	A .d	ditional water-closet accomo-	± 010 water-closeds removed and o new ones erected in	40		,
			their place, 6 additional urinal compartments pro-	uo	,	,
		dation.	their place, 6 additional urinal compartments pro- vided.	_	,	

SOUTHERN AND SOUTH-WESTERN LINES-continued.

Description of Work.	Accommodation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
Redfern—continued:— Additional office accommodation	Temporary wooden office erected 24' x 14', and an addition to same 18' x 12' for temporary ticket office, old booking office taken down and fittings removed to temporary office, room converted into gentlemen's waiting-room, and main hall from inside to outside platform by erecting stud, lath, and plaster partition, additional accommodation to parcels office with counter, desks, and shelving.		£ s. d.	£ s. d. 1,133 4 2
Land for approach to platform	29 panels 5-feet paling fence	do	31 1 0 0	186 3
Macdonaldtown:— Lengthening platform and approach	}	do	906 7 1	255 6 10
Sub-way through line	sub-way, 56' 6" long, 7ft. wide, 7' 6" high, with approaches and steps complete, built with brick and		897 19 0	355 12
Draining southern end of platform Laying on water	Water laid on to fountains and urinals, 298 feet pipe	đo do	47 14 5 5 10 8	23 8 (
Enlarging waiting-shed	laid. 20 feet x 8 feet, with seats New weatherboard fence erected in front of houses on approach road to station.	do do	36 5 8 	84 19 1 12 18 4
Vewtown:— Diverting Trafalgar-terrase	Street formed, pitched, and metalled, 500 feet x 33 feet.	do	1,072 7 10	***********
Enlarging ticket office	fence shifted, and siding altered. 14' x 8' 6", with counter and drawers, and platform flagge?.	do	195 11 11	18 3
Sub-way, Liberty-street Lengthening culvert near platform	113' 6" x 50' x 17' high	do	87 5 4	5,378 13 7
New crane	New 5-ton crane	do	22 1 2 270 14 5	4 11 9 101 16 (
New siding	New dead-end siding to hold sixty-eight trucks 316 super. yards asphalting done	do Contract		553 0 8
New semaphore and block-box Kerbing gateway	24-feet signal and 11 feet x 9 feet box	Day labour	8 11 6 6 1 10	3 19 <i>1</i> 14 9 11
Petersham:— Widening Canterbury Road Bridge	99′ 3″ x 50′ x 15′ high	d a	9701 0 10	bob 15 -
Extending block siding Interlocking apparatus Boundary wall up platform	New block stding, 272 chains long, to hold nine trucks Signal box, 15' x 11", points and signals interlocked Wall 290 feet long	do do do	3,761 9 10 315 13 5 1,254 7 0 315 3 2	787 17 5 271 3 2 76 12 5 208 17 10
New dead-end siding New crane	trucks.	do	44 0 5	************
New goods shed	30 2 X 15 = 2" with 4001 gollon tonk	do Contract	0 4 3	348 15 8 89 17 8
Additions to signal-box	New through road, 2 49 chains long New verandah erected	Day labour	·	68 11 7 2 18 8
ummer Hill:— New semaphore	94 (-4	_		
Station-master's house	24-feet wooden signal House, containing 4 rooms, kitchen, and wash-house, with verandah and balcony.	do Contract	2 7 6	887 3
skfield	New underground tank, colonial oven fixed, copper supplied and fixed.	Day labour	•••••	
New overbridge, Matilda-street	Overbridge 111' x 33' 6"	. do	1,219 18 2	1,368 12 8
New footbridge	Iron foot overbridge 8' wide	Contract	804 11 9	32 7
Lighting entrance to station	New through road 2.71 chains long, to hold 9 trucks 21 lamps erected and 1.912 feet of pipe laid	Day labour	93 19 11 79 1 5	**********
New slip points New crane	1 pair slip points 37 chains long	do	29 10 2	••••••••
New fence	New 5-ton crane 575 feet of 4' 6" picket fence erected, also 1 10-feet gate	do	31 19 0	308 12 1
Enlarging ticket office	and posts. End taken out of old office, carried back 11' 3", framing built up to ceiling 14 feet high, with counter, pigeon	do	**********	62 8 6 53 19
Interlocking apparatus	holes and cupboards.			
Goods shed and approach Enlarging station-master's house	Goods shed, 30' 2" x 15' 2" built, with 400-gallon tank. 2 additional rooms erected over kitchen for bedrooms 18' x 12' 6" and 10' x 12' 6", with balcony in front;	Contract Day labour		5 12 10 158 13 320 10
would on a	old tank over porch of house taken down and 2 400-gallon tanks fixed instead.			
oydon: Footbridge		Control	***	
Watch-box	Iron foot overbridge 8 feet wide	Contract Day labour	779 8 0 26 16 5	11 9
New house, Porter in charge	Completing 2 additional rooms, 12' 6" x 12' and 12' 6" x 10' 6".	do	22 10 0	
urwood: Footbridge	Iron footbilge 8 feet wide	tract, erected	836 7 1	1 5
New siding and through road	New through road 269 chs. long to held 9 trucks, 1	do	15 9 0	•

SOUTHERN AND SOUTH-WESTERN LINES—continued.

Description of Work.	Accommodation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
Burwood—continued:— Improvements to station	New iron palisading erected on back verandah of station,	Day labour	£ s. d. 98 11 9	£ s. d.
Interlocking apparatus New gate and approach	100 feet, with wood hand-rail. Signal-box, 12' x 11', points, signals, and gates interlocked 2 15-feet gates erected	do	$1,274\ 10\ 1$ $47\ 8\ 9$	107 19 1
Crane	New 5-ton crane	do do	282 6 0	75 11 8 56 12 4
Redmyre:— New semaphore Lengthening platform	24-feet wooden signal	do	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	**********
Homebush :	with hand-rail at back.			
Station-master's house Footbridge	6 rooms erected	Contract Supplied by con- tract, erected by day labour.	38 15 0 756 18 7	14 4 2
New Siding, &c. at cattle yards, New siding.	Temporary siding leading to new yards, 3:35 chs. long, to hold 12 trucks, 1 pair slip points, 32 chs. long	Day labour	167 19 9	4,120 14 7
Interlocking apparatus! Land taken at cattle yards Sidings,dockwall, and loading stage, cattle yards. Rookwood:—	Temporary tin blocked signal	do do d o		5 7 0 540 12 0 2,691 8 6
Improvements to station	New platform Up and Down side, 430' x 12' 6" each, waiting-shed and rooms to each, platform, waiting-shed, 28' x 15', each room 15' x 5', new w.c. and urinals, 32' x 12', containing 3 closets and 13 urinals, ticket office, 15' 10" x 13' 10", with verandah; flagging in front of office, 13' 10" x 5' 3"; dock wall on Down side platform, 138', and 192 feet of 5-feet galvanized iron fence.	do	2,568 13 9	2,070 2 11
New through road	New through road to main lines 2.71 chs. long to hold 9 trucks.	do	143 17 3	••••••
New siding, signals, and approach road.	Dead-end siding Up line side 11.56 chs. long to hold 42 trucks, 1.40 feet wooden semaphore 3.16 feet, 1.18 feet, and 1.20 feet wooden signal erected, slip	do	19 15 11	334 6 9
New level crossing, mortuary branch.	points 0.30 chs. long to hold 1 truck. , Guard rails fixed at crossing	do	5 9 6	11 2 1
New crane	New 5-ton jib crane	do	2 3 0	0 13 1
New gate	New 15-feet gate	do	$9\ 13\ 5$ $114\ 10\ 5$	
New lamp-room New siding and through road Duck River:—	New lamp erected at Sydney end of Down platform Accommodation for 10 trucks proved 2.73 chains long	.do	3 17 3	243 11 3
Extending siding	Extending old Duck River siding 2.68 chains long, to hold 9 trucks.		115 14 5	
New siding 123 miles (Hudson's)	trucks, slip points 0.38 chs. long, siding leading to Hudson, Brothers, 2.95 chs, to hold 10 trucks, siding leading to Hudson Brothers 2.90 chs. long to hold 10 trucks.	do	304 15 5	3,374 10 10
New platformGranville :—	Up and down side 433' x 12' each	do	000 16 11	324 12 9
Water supply for loco	Foundation for tank and water-crane and tank stand, 27' x 27'.	' '	828 16 11	693 18 3
Overbridge New station and improvements	Overbridge 86 feet long, 39' 6" wide	do Contract	4,054 9 11 3,215 3 3	5,343 4 2
	Fittings for offices, Up platform 451' 6" x 15' x 9", horse dock, Sydney end of Up platform, 98 feet long, retaining wall between new station and new overbridge, 198 feet with 5 feet galvanized		· ••••••••••••••••••••••••••••••••••••	
	 iron fence on same to form approach to bridge, new up line platform flagged in front of station, one underground tank to receive water from roof of new station 12' 10" x 10', one brick pit to re- 		,	
	ceive drainage from urinals 10" x 8' x 8'. Down platform 441' 6" x 20' 3", with brick weather shed, ticket office, ladies' waiting-room and lavatories 93' 2" x 16' 6", urinals and closets, Sydney end, retaining wall between end of platform and end of dock 114 feet; dock 58 feet at Liverpool end.			
Signal-boxes, block system signals Buffer stops T table siding	Centre platform 411' 6" x 20' with weather-shed Two signal-boxes erected, one 21' x 13', one 14' x 11' Three sets round-headed buffer stops	do do	270 2 3 32 7 4	57 19
Slip points	Two-pairs slip points 0.64 chs. long to hold two trucks. Goods shed galvanized iron, 30' 4" x 15' 4" with loading stage 41' 3" x 8', and steps leading to same engine-shed, 100' x 25", with pits the whole length inside, and pit outside 45' long with drains, catch-		24 6 8 19 6 6	700 7 4
Additional sidings and signals	pit, &c.	do 'j.,	575 5 8	

SOUTHERN AND SOUTH-WESTERN LINES-continued.

Description of Work.	Accommodation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
Granville—continued :—			£ s. d.	£ 8. d
Crane		**********	ω s. α.	338 6 S
Approach to New Station Interlocking apparatus			*********	45 9 1
Extending Line Siding	Points, signals, and gates interlocked	Day labour		1,709 6
Cart weighbridge			***********	168 15 7 4 16 (
Suburban goods sheds generally	Goods-shed 30' 2" x 15' 2", with 400-gallon tank, at	Contract	*********	379 5
Merrylands :	Newtown, Petersham, Ashfield, Burwood, Home- bush, Rookwood, Minto, and Blacktown.			
Tank and stand	New 400-gallon tank and stand fixed at station-master's	Day labour	799	•
	house.	Day labour	199	***********
New signals	Two 15-feet iron signals	do	0 8 0	**********
Goods shed	Goods-shed 30' 4" x 15' 3", and one 400-gallon tank and stand.	do	221 17 7	•••••
Fuildford :				
New distant signal	One 16-feet and one 18-feet signal	do	10 1 0	
Verandah to station	Verandah 34' long by 6' wide	do	27 14 9	**********
Fairfield :		-	,	
Ticket office	New window fixed in ticket office	3.		•
Porters' houses and tank	One containing 5 rooms with verandah and two 400-	do	14 15 8	909 6 4
	gallon tanks, and one containing 4 rooms, verandah.		**********	808 6 6
Cabramatta :—	two 400-gallon tanks, and W.C. to each.			
New carriage dock and siding	Dock 594' long with retaining wall in connection with			, p. 4
	same 409' long, two sets of buffer-stops and new	do	1,114 4 10	477 6 7
	carriage dock siding, 3.26 chains long, to hold eleven			
New goods at a J	trucks.			
New goods shed	Goods-shed 20' 3" x 12' 3" and two 400-gallon tanks and stands.	do	32 6 3	84 16
iverpool :	and spands.	ļ		
Improvements to station		do	2,483 6 10	302 5
	6" x 8', with two 400-gallon tanks and stands, onen		2,100 0 10	002 0
•	loading-stage at end of goods shed 60' x 10', station	1		-
	platforms, 365' long in front of station, flagged and remainder tar-paved, New horse-dock, dock walls in		,	
•	connection with goods shed 1,452' long, stock-yards	· ·		
•	27' x 28' divided into three yards with a crush for			
•	loading 16' long, two sets dock buffer stops, seven sets		. ,	
	round-headed buffer stops, one treble set, two 15'			
	gates and two turnstiles at entrance to station, two 15' gates and two turnstiles at entrance to the cross-			
	ing, and two 15' gates at entrance to goods shed siding.			•
Fencing station-master's house	Fifty-two panels 5' paling-fence	do	23 6 7	
Additional water supply New ashpit	Well 20 feet deep and 12' 8" in diameter	do	49 5 0	238 4
New crane	Ashpit 60 feet long New 5-ton crane	Dow labour	****	66 3 1
New weighbridge	14', office for same 13' 3" x 7' 3"	Day labour do	· · · · · · · · · · · • • •	351 9 (60 19 (
Henfield:—	ì		••• •••••	00 19 (
New siding and dock	New loading-dock 40 feet long		225 16 10	***********
Into:	Two 18-feet wooden signals		87 16 7	28 16 (
Additional office accommodation	New ticket-office 8' 6" x 7' 10" with fittings, ladies'	Day labour	250 18 4	
	waiting-room 12' 5" x 7' 10" with seats, one 400-gal-	_ = = = = = = = = = = = = = = = = = = =	-00 10 1	**********
	lon tank and stand, verandah to front of offices and old waiting-shed 35' x 4' 6".			
Lengthening platform	New steps to platform	do	7 17 10	05.34
Goods shed platform	Goods platform 51' x 8'		7 17 10	65 14 5
New distant-signal	Two 18-feet wooden signals	Day labour	0 14 8	************
Safety points	Two pair slip-points each 0.35 chs. long, to hold one truck each.	ďo		35 13 (
Campbelltown :	brack each.	-		
Drivers' and guards' house	House 12' 10" x 12', one 400 gallon tank and W.C., 204	do	87 8 O	
	teet of 5-feet paling fence.		0, 0 0	**********
Lengthening platform	Platform lengthened 171 feet	do	730 17 11	67 16 16
Altering station for Camden line	258 feet of dock-wall erected, one set round headed buffer-stops and one set dock buffer-stops.	do	1 6 0	
Additions to goods shed	Old floor taken up and renewed, foundations of cranes	do		400 10 1
<u> </u>	and dwarf walls raised 1 ft., size of floor 112×20 .	αο	1	480 13 1
	new outside covered platform 115' x 9', two new			
	sliding-doors complete 11' x 9', office enlarged and renewed, scales shifted and re-fixed, and two 400-			
	gallon tanks fixed.			
New crane	New 5-ton crane	do ·	1	353 19 1 0
Interlocking apparatus	Signal-box erected 14' x 11', and points and signal inter-	do		39 9 1
Safety points	locked. Junction of Comdon transport two points of alie points.	, 1		
	Junction of Camden tramway, two pairs of slip-points 0.70 chains long, to hold two trucks.	do	•••	76 18 6
lenangle :		-	ļ	
Handrail on bridge	Hand-rail 364 feet long and 2' 2" high	do	3 14 7	
Improvements to water supply Distant repeating signal	New tank stand 27' x 27'	do	481 17 7	
Porter's cottage	20 feet iron signal erected 4-roomed weatherboard cottage 23' x 25', with verandah	do	116 18 11	************
	in front, W.C., and 400-gallon tank, 250 feet of 5ft.	do	173 12 4	17 19 9
Months (2	Daling tence, and 28 feet of batten fence		j	
Tank at gatabonea arceaing Camdon	400-gallon tank fixed	do	4 19 0	**********
Road.	8	[,	

SOUTHERN AND SOUTH-WESTERN LINES-continued.

Description of Work	Accommodation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
Douglas's Park : Porter's cottage	Preparation made for erection. Awaiting instructions	Day labour	£ s. d. 194 3 0	£ s. d. 114 10 10
Extending siding	as to position. Block siding converted into loop and dead-end siding 4 chains long, with buffer stops constructed.	•••••	537 7 10	
New semaphore	25ft. wooden signal	Day labour	9 17 7 59 8 5	22 7 11
Picton: — Improvements to station	36-gallon copper fixed for supplying foot-warmers, with 14' 4" x 9' 4" house over same, and 90 feet of 5'	Day labour	96 6 7	••••••
Improving water supply	picket fence. Surveying for bringing water by gravitation from Picton	do	100 1 7	41 17 4
Enginemen's house	Lagoons to Picton. 40' x 15' 6", containing 2 rooms and hall, with lockers, and 400-gallon tank.	d o	175 18 11	144 15 5
Gatekeeper's box	8' x 8', weatherboard, with iron roof	do	18 1 2 53 16 11	52 0 5
Store-room	14' 3" x 12' 2", weatherboard, with brick foundations, shelving, tables, &c.	do	99 10 11	
Cart weighbridge	10-ton bridge 16' x 8', platform in brick and cement foundations, weatherboard office 9' 7" x 9', and fittings complete.	do		178 17 5
Picton Lakes:— Improving water supply	Tangge engine, pump, and boiler, with foundations	do {	75 17 10 123 11 8	} 404 17 4
Pumping engine-house and ash-pit New siding and signals between	New floor	do	$\begin{array}{cccc} 5 & 0 & 0 \\ 105 & 5 & 4 \end{array}$	998
Big Hill and Bargo. Bargo:— New platform	high. 54' x 8', wood, with back fence, weatherboard telegraph	do	65 3 0	
Porter's house	office $12' \times 10' \times 8'$ 6", and lamp room $9' \times 7' \times 8'$. $24' 4'' \times 23' 4''$ weatherboard on brick foundation		309 19 1	41 6 5
	divided into 4 rooms, lined throughout with 2 400-gallon tanks and closets; verandah 24' 4" x 3' 6".			
Coleman's Siding:— New siding	24 chains 45ft. long, to hold 72 trucks	do	203 16 11	
Telegraph Office New block siding and signals	Wood and iron building $20' \times 12'$ Siding 5 chains 18ft. long, with two wood distant signals	do do	94 0 0	770 9 11
New platform and ticket office	22 feet. Platform 180 feet long, with ticket office 12' x 10', general waiting-room 14' x 10', ladies' waiting-room 10' x 10', and W.C. and urinals complete.	******	••••••	847 3 3
Mittagong:— Water supply, engine-house	Wood and iron building on brick foundations 12' 11" x 10' 11" x 11' high, engine, boiler, pump, &c., and dam wall of brick in cement 39 feet long, 9 feet deep	-	1,098 19 9	7 17 è
New crane	by 2' 1" at top and 4 feet at bottom. 5-ton crane, with 12' x 12' ironbark and brick founda-	do	312 7 8	127 9 5
Lengthening and enclosing platform	dations. 50ft. brickwork in mortar and stone coping, 50ft. dockwall and dock end 9' 5" x 10 feet deep with 95' 1" picket fence and 5 chains 17 feet additional siding accommodation.	do	295 13 1	***************************************
Porch to gatehouse	9' 2" x 4' 6", pine boards with iron roof	do do	11 10 1 74 14 3	398 1 1
Junction. New weighbridge at do	additional trucks. 20-ton truck bridge, with brick in cement foundations	do	270 14 7	17 8 9
Improvements to station	and pit, and 150 drain pipes. New W.C. and urinals 45' 3" x 12' 4" x 11' 6", consisting of 4 closets 6' x 4', 15 urinals 2' 3" x 2' 1" cast iron partitions, cemented and flagged 18' x 6' 9" x 3' 6" cistern, water laid on, and cesspit 18' x 9' x 6', parcels room 16' 11" x 17' 4" x 15', and signals altered to work from platform, and brick	-		1,670 2 2
Siding for Fresh Food and Ice Co. Bowral:—	signal pit $5' \times 5' \times 7'$. 8 chains 53 feet long, to accommodate 15 trucks	do	•••	151 7 €
W.C., station-master's house	Brick building 6' 9" x 4' 9" x 7' 6"			18 4 0 28 17 8
New dock Fencing Ward's land Burradoo :	Material provided	do		8 19
Platform, gates, and approach	Platform 100 feet, 2 12-feet gates and turnstile, 19 rods 10 feet 3-rail fence, and 19 chains by ½ chain wide, approach road formed and ballasted.		279 17 4	83 10 7
Connecting dock with block siding		do		139 4 9
dustermere:— Coal Company's sidings and signals Level crossing and gates	Siding 28 chains 36 feet, with 2 18-feet distant signals 2 12-feet gates with guard-rails and 11 rods of 3-rail fence.	do do		133 3 8 57 14 6
Berrima:— Siding for Berrima Coal Company		.do	1,220 13 3	•••
Moss Vale:— Crossing gates, &c	2 12-feet gates with guard-rails and 8 rods 9 feet of 3- rail fence.	do	47 3 1	
		do	29 2 5	i

SOUTHERN AND SOUTH-WESTERN LINES—continued.

Description of Work.	${\bf Accommodation\ given.}$	How carried out.	Amount expended in , 1881.	Amount expended in 1882.
Moss Vale—continued :— Cart weighbridge	and cement foundations and pit, and 275' 6" of 6"	Day labour	£ s. d.	£ s. d
Lengthening platform and fence	drain pipes. Lengthened 62 feet, and 15 feet ramp of brick with stone coping, 205 feet of wall 3 feet deep, and 135' 6" picket fence, and 22 feet corrugated iron fence round	do		238 19 10
Underground tank	urinals. 8' x 10' x 10'—14" brick work in cement with 28' 6" of 9" inlet and outlet pipes, and Douglas lift pump complete.	do		50 11
Meryla : New platform	86 feet long by 5' 6" and 30 feet ramp piled and capped	do		33 16 1
Lengthening block siding Improvements to station	Extended 3 chains 12 feet, to hold 11 additional trucks Weatherboard station buildings 63' x 13' 9" divided into lamp-room 15' x 13', ticket office 13'x 12', gentlemen's waiting-room 15' x 13', ladies' waiting-room 12' x 13', ladies' W.C. 8' x 4', and lavatory 8' x 7', with fittings complete, and verandah 63' x 9', platform 179 feetlong and fence 117' 9"long, W.C. and urinals 20' x 8' 6" with cesspits, lamps, and signboards, tanks, and stands. 2 bracket lamps	, 1	37 8 8 491 2 2	655 4 1
Saker's Siding:— New siding and signals		do	197 0 8	874 18
Cable's Siding:— New gates	, and the second	do	13 8 6	
Vingello Siding:— New platform and ticket office	Platform (rubble and stone coping) 150 feet long with 2 15-feet ramps; ticket office 8' 9" x 6' 9" weatherboard, with iron roof.	d o	*********	189 18
New signals and sidings	2 18-feet distant signals and siding 29 chains 39 feet long	do do		$\begin{array}{c} 27 & 12 \\ 444 & 19 \end{array}$
Rarber's Creek : Water supply, enlarging engine- house.	Timber and iron addition on stone foundations, floor brick paved.	do	1 2 6	4 17
New gates	1 12-feet gate	do	18 3 2	*********
New cart weighbridge	foundations and pit approaches, 60 feet 6" drain pipes, and weatherboard office 8' 9" by 6' 9"	do		248 17
New siding	11 chains 19 feet long, to hold twenty-four trucks New residence for station-master	do do		$\begin{array}{cc} 448 & 2 \\ 273 & 14 \end{array}$
Loop and block siding	7 chains 46 feet long		297 9 11	
owrang:	1 12-feet gate	do	*********	12 3
Lengthening platform	weighing-machine and signal levers 16' x 10\frac{1}{2}", lamps and name boards.		215 3 0	
W.C. and urinal	15' x 8' 6", wood and iron, divided into four urinals and W.C. 5' x 4', with cesspit 5' x 6' x 5' bricks. 32' x 28' 9" x 10' brick in mortar, with iron roof,	do	32 14 4	459 1
	2 400-gallon tanks; W.C. 6' 9" x 4' 9" x 7'; and cesspit 5' 6" x 5'.		**********	
North Goulburn:— Fence and gate Waiting-shed and office		do do		75 1 166 10
New platform	ticket office 10' x 10', with fittings complete. Brick, 200 feet long, returned 11' 5", and ramp 50 feet		112 19 8	55 13
Foulburn:— Extending block siding to cattle	long. Additional accommodation for twenty-five trucks (8	do	181 5 0	
yards. Improving water supply	chains 25 feet long).	By Locomo-	24 0 8	447 12
Lamp and oil store	pipes laid to supply water by gravitation. Weatherboard porter's room 14' 4" x 9' 7"; lamp	tive Dept.	368 5 7	
Draining station-yard	room, 14' 4" x 9' 9"; and oil room 14' 4" x 11' 4". 9" pipes across approach road to station	Day labour	9 5 4 1,408 0 6	73 7
Per-way and Loco. Workshops	extended 12 chains, to hold forty-three trucks extra. Additions to engine shed 111' x 40', foundations, wooden frame, and galvanized iron roof, and founda-	do	174 4 6	1,037 8
Improving employés houses	tions for further extension. 65½ rods paling fence; shed 14' x 10", with new copper, and kitchen 14' x 13'.	do	187 19 11	••••••••••••••••••••••••••••••••••••
Lengthening culvert	New W.C. and urinals 45' 3" x 12' 4" x 11' 6", brick, with brick in cement foundations, divided into four	do do	258 19 10 467 12 4	391 0
•	closets 6' x 4', and fifteen urinals 2' 3" x 2' 1", cast-iron partitions, cement and flagged throughout.	[
Improvements to goods shed Additional siding accommodation		do	7 11 5	4,373 14

SOUTHERN AND SOUTH WESTERN LINES—continued.

Description of Work.	Accomm odation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
Goulburn—continued :— Store, Permanent-way Branch Guards' rooms	New brick chimney, hearthstone, and grate	Day labour	£ s. d.	£ s. d 5 16 (442 12 (
District Engineer's Office	dining room 15' x 15' x 10', and bed-room 15' x 15' x 10', and verandah 32' 5" x 8' 2" x 8'. Brick in mortar on brick in cement foundations, containing 2 rooms 14' x 13' 6" x 10' 6", 1 room 16' 6"	do	••••••	617 10 8
Turn-table and signals	x 12' x 10' 6", hall 13' 6" x 4' x 10' 6", verandah 35' 8" x 6' 9" x 8' 6", and urinal 6' x 7' x 7'. New turn-table and 20' distant signal	do		388 0 4
Additions, Traffic Inspector's house Mulwaree:—	Copper and kitchen ·	do	**********	10 0 (
Pumper's house	4-roomed house, wood on brick foundation, and iron roof, verandah 4' wide, 2 400-gallon tanks, closet, and brick cesspit, and 2-railed paling fence with picket fence in front.	do	360 14 4	1+1+++1 +1+
Wiring Chisholm's fence	Four wires 1 mile and 40 chains long	. do	25 11 0	18 13 8
Breadalbane:— Ladies' W.C. and urinals	Ladies' waiting-room 18' 4" x 10' 4", lavatory 6' 2" x 6' 4", and closet 6' 2" x 4', and also gentlemen's	Day labour	146 5 2	**********
Kitchen, station-master's house, and verandah.	closet and urinals with necessary cesspits. 13' x 12' 3", wooden building on brick foundations, brick chimney and oven, and verandah at rear and sides of house.	do	81 4 3	40 16 4
Fencing station	16 rods of 6' paling fence, mounted with hoop-iron top and bottom.	do	8 16 6	81 7 8
Fish River :-	2 400-gallon tanks, fixed	do՝	•••••••	8 14 6
New waiting-shed	Weatherboard building on piles, divided into two rooms 13' 4" x 8' 3" and 7' x 8' 3", and 1 400-gallon tank. Additional wires in fence on both sides of line, from 161	do	94 13 5 41 0 1	*********
Additional water supply	miles 60 chains to 164 miles. Well 6' diameter, sunk 19', and built in 14" brickwork,	do		239 7 2
Funning :— Wiring Buist's fence	and connected with stationary engine and river. Additional wires in fence on both sides of line from	do	42 10 7	*********
Tank, ganger Smith	170 miles 30 chains to 172 miles 70 chains. 1 400-gallon tank, fixed	do do	••••••	8 1 4 6 40 14 10
Terrawa:— Wiring fence, Mr. Williams' pro-	. 158 miles 20 chains to 159 miles 50 chains. Additional wires on one side of line from 153 miles 36	do	24 2 1	
perty.	chains to 154 miles 60 chains, and from 153 miles 50 chains to 154 miles 20 chains on the other side of line.		,	
Wiring fence, Mr. Buist's property Wiring fence, Mr. Pollard's pro-	Additional wires in fences on both sides of line from 170 miles 30 chains to 172 miles 70 chains.	D 1-1'	***********	62 18. 2
perty. Tank for ganger Adams	Additional wires on both sides of line from 173 miles 63 chains to 174 miles 75 chains. 1 400-gallon tank, without stand	do		23 8 6 4 7 3
New semaphore	Wooden semaphore, 22 feet, to light Wooden building 12' x 4' 2", galvanized-iron roof, painted, and fitted with shelves, cupboards, &c.	do	**********	35 5 2 20 14 3
Manton's Creek: Tank for ganger Porter	1 400-gallon tank, without stand	do		473
Additional water supply, Loco	Underground tank built in brick and cement, drain cut from tank into river, pipes fixed from engine into tank.	do	274 15 5	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
New tank and stand	20,000 gallon tank fixed on wooden stand, bedded on a foundation of brickwork built in cement 25' 3" x 28' 3", overflow pipes fixed and catch pits built.	Supplied by con- tract, and fixed by day labour.	592 14 9	••••••••
Bricking copper for foot-warmers	Copper set in brickwork 5' x 5', weatherboard shed built over copper on brick foundation with galvanized iron roof.	Day labour	62 18 5	
New fender, goods shed	Fender 81' 6" long, 4' 6" above ground, 22 6" x 6", upright posts, 3 lengths 7" x 3" wailing, each upright bolted.	do	24 0 8	
Water supply, inspector Lewton's District. Six-mile Creek:—	aprigat totted.		86 3 2	109 9 0
Tank, ganger Millard	2 400-gallon tanks	Day labour	`	8.14 6
Do. Do.	Siding 252 feet long, with safety points, to hold 5 trucks, clear approach, fenced, 210 panels, wicket and entrance gates.	do		383 17 8
Bowning :— Wiring fence, Monaghan's property	4 wires on both sides of line from 192 miles 50 chains	do	33 2 6	······· for
Do. Brown's do.	to 193 miles 50 chains. 3-rail fence and 1 wire on right side of line from 195 miles 10 chains to 196 miles 10 chains; on left side of line from 195 miles 10 chains to 196 miles 38 chains; and on both sides of line from 198 miles 50	do	397 4 7	······· 📜

SOUTHERN AND SOUTH-WESTERN LINES—continued.

. Description of Work.	Accommodation given,	How carried out.	Amount expended in 1881.	Amount. expended in 1882.
Rowning—continued:— Wiring fence, Grosvenor's property		Day labour	£ s. d. 27 3 6	£ s. d.
Wiring station and Government reserve.	to 194 miles.	do		21 0 6
Tank for guard Armstrong	2 400-gallon tanks	do		18 14 6
New water-closet and urinal	Built with wood studs and iron sides, weatherboard closet and iron roof; floor of urinal paved with bricks, 4 bays in urinals; urine, &c., drained into brick cesspit.		44 3 4	***************************************
New station Additional waterway, 205 miles 5 chains and 206 miles 3 chains.	14" x 12", road girders 12" x 10" outside girders, 9" x 7", sleepers, 9 sleepers, including all excavation, 11' 6" waterway; 15 feet opening built on trestles, concrete foundations 14" x 12", road girders 12" x 10", outside girders 9" x 7", sleepers, 9 sleepers, 5' waterway, including all excavations	٠		712 3 1 270 3 3
Wiring Mr. Brown's property 207 miles 35 chains to 208 miles 40 chains. **Along:	2 additional wires on both sides of line from 208 miles 40 chains to 209 miles, 2 additional wires on both sides of line from 209 miles to 210 miles 30 chains, and 2 additional wires from 210 miles 30 chains.	do		41 13 9
Tank, ganger Dixon	2 400-gallon tanks	do		8 14 6
Tank for ganger Stelme	1 400-gallon tank	do		473
unningar :— Fencing gate-house	1 9' gate, 2 6" x 6" gate posts canned, 1 3' 6" gate 2	do		28 17 8
Tarden :—	19' gate, 26" x 6" gate posts capped, 13' 6" gate, 2 6" x 6" gate posts, 28\frac{1}{2} rods of 5-feet paling fence, hoop iron on top and bottom rail.	40	*********	20 11 · 0
Guards' and porters' cottage and loco.	Repairs 4 houses, taking down and refixing part of inside lining, painting inside and out.	. go	129 19 7	26 2 1
New station, &c	Station built of brick on stone footings, cement dressing on openings, all inside rooms plastered, roof covered with slate, T. & G. flooring nailed on hardwood joists, verandah back and front, covered with iron,	•	2,465 6 5	•••••••
	doors, window inside fittings, &c., large underground tank.			
Repeating signals	Repeating signal 18 feet, to light	Day labour		
Hay gauge New distant signal	Up distant signal 18 feet, to light	Day labour	$egin{array}{c cccc} 7 & 17 & 3 & \\ 12 & 10 & 1 & \\ \end{array}$	
New kitchen, loco men	Weatherboard room 13' 6" x 12' 2", built on brick found- ation, covered with iron, brick fireplace and chimney, 1 door and 2 windows, painted inside and out.	do	9 8 8	***********
Tank and stand	20,000-gallon tank fixed on wooden frame, bottom plates of frame bedded on a foundation of brickwork built in cement, foundations 34 feet x 34 feet.	Contract	330 2 8	••••••
Additional water supply for loco.	20,000 gallon iron tank, fixed on wooden frame on brick foundation built in cement brickwork, 34 feet x 34 feet, stationary engine shed enlarged and floor bricked.	do	505 7 4	764 14
Widening approach road to goods shed.	50 feet of 2-feet drain pipes laid and brick end	Day labour	167 5 0	**********
Cottages for cleaners	4 weatherboard buildings on brick foundations, double chimney to each house, colonial oven fixed, wood- work painted inside and out, 2 tanks fixed on wooden	do	1,415 18 7	
	stands, 6" drain lain, catch-pit built, wooden closet erected on brick catch-pits, fenced with 5-feet paling fence.	,		
Pumper's house	fixed, woodwork painted inside and out, tank fixed on wooden frame, catch-pit built, wooden closet built on brick catch-pits, fenced with 5-feet	do	265 9 6	58 11 8
Lengthening platform	paling fence. Platform lengthened 48 feet, 15 feet ramp, dock wall taken down and rebuilt, buffer stops refixed, &c.	do	543 9 6	
Tank, guard Littlewon, near Two-mile Creek.	taken down and results, stater stops renked, &c.		8 18 0	***********
Verandah to goods shed, and chimney in office.	Verandah 130 feet long x 6' 2" wide, platform erected in front of goods shed 130 feet x 6' 2", brick chimney in office 2' 6", brick opening 9"-brick,	Day labour	278 6 10	5 10 1
Verandah and additions to loading stuge.	30" half register grate fixed. Additions 59 feet long x 17 feet wide, wooden kerbing all along front of goods shed.	do	54 3 6	**********
New gate	1 12-feet gate, 2 12" x 12" posts	do do	7 11 0 36 11 3	1 19 11
House for stationary engine	5'4". Wood and iron shed 14'3" x 9'5" on brick foundations,	do	36 12 11	****
Fenging stock reserve	floor paved with bricks and grouted in cement. 781 rods of 3-rail fence, 2 wires full length of fence, 112-feet gate, 2 12" x 12" posts, 8 swinging flood-	đo		205 19 6
New weighbridge	gates fixed. 10-ton cart weighbridge fixed in brick pit built in cement, bottom paved with brick, 324 feet of 6" overflow pipes laid, guard rails, office, 6' 9" x 4' 9"	do		119 1 8

SOUTHERN AND SOUTH-WESTERN LINES—continued

Description of Work.	Accommodation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
			£ s. d.	£ s. d
Harden—continued:— New W.C	Wooden frame and iron sides, on brick foundations, brick cesspit, 2 closets and 7 bays in urinals, floor of urinals paved with brick grouted in cement.	Day labour		32 13 10
Murrumburrah :— Water supply	·			180 9 4
Ticket office	Weatherboard office 8' x 7', and lined inside	Day labour	55 10 6 74 13 0	
Siding Crane	New siding 3 chains 77 links, to hold 7 waggons New 5-ton crane	do do	•••••	576 7 8 20 16 9
Two-mile Creek, 237m. 14c.:— Siding Signals	New siding 5.25 chains long, to hold 10 waggons	do do		346 4 7 20 7 8
Wallendbeen :—	13 feet, to light.	:		
Buffer stops Fireplace in booking-office	1 set of buffer stops	do do	25 4 0 33 0 1	***********
New platform		Dow lebons	$\begin{bmatrix} 60 & 4 & 1 \\ 23 & 7 & 2 \end{bmatrix}$	**********
Ladies' W.C Loading stage	W.C. 6 feet x 4 feet, ante room 6 feet x 7 feet. 30 feet x 15 feet, covered with galvanized iron	Day labour	47 16 3	•••••
Alterations	Alterations to station-master's office	do do	5 13 6 308 13 3	756 7 8
New crane	New 5-ton crane	do do	279 14 2 4 2 6	29 8 2
Chimney, station-master's house Rooms for operators	2 additional rooms, one 16' x 11', and one 13' x 11', 2 single brick fireplaces, and 2 30" half register grates	do		211 9 9
Enlarging goods shed	Additions, 26' x 15', covered with galvanized iron, 2 pairs of doors.	do		158 10 7
Improvements, pumper's house Cootamundra:—	354 super. feet of studding and weatherboards fixed from plate to ground.	do	12 4 6	************
Fencing reserve	280 rods of 3-rail fence with 2 wires	do	46 18 5	4 18
Hay gauge	Hay gauge made but not fixed	Day labour	$egin{array}{cccc} 9 & 7 & 8 \ 72 & 5 & 1 \ \end{array}$	************
Fencing porters' cottages New station-yard	58½ rods of 2-rail 5-feet paling fence, and 4 picket gates Approach road to goods shed widened, depth of earthwork, 2 feet, depth of pitching and ballast, 1' 3".	do do	23 7 3 26 14 9	**********
Improvements to gate house	151 rods of 2-rail 5-feet paling fence, and 31 rods of 5-	do	34 4 0	**********
New underground tank (brick arch)	tered, No. 4 Douglas lift pump, round tank opposite goods shed, partly taken down and domed over and plastered in cement, stone cover fixed on each man-	do	144 13 11	21 9 (
Improvements, &c., to station	hole. Floors taken up and relaid, extra-joists put in, old joists renewed, flooring boards renewed where necessary, lining taken down and refixed, additional studs put, old studs renewed, lining made good, main roof building and verandah repaired, counters and shelves	do	268 4 4	1 13
Roof over wool and loading stage	fixed, parcel room building painted. Space covered 106 feet long x 25 feet wide with galvanized iron.	do	380 10 0	12 5 1
Additional goods shed accommoda- tion and chimney to office.	Goods shed lengthened 42 feet x 30 feet, office taken down and re-erected at Junee end, 2 new double chimneys, 3-feet opening, 30" half register grate fixed, platform erected 102 feet long x 6 feet wide, and galvanized iron awning erected, 102 feet of 10" x 9", fender put in, goods shed thoroughly repaired, iron on main roof and sides made good.	do	860 13 9	32 18 3
New picket-fence	160 feet run of 5 feet pickets fixed on old station fence	do	8 16 1 423 4 6	17 7
New crane Lengthening platform	New 5-ton crane Lengthened and widened 124 feet x 15 feet on town side, and 64 feet x 10 feet on goods shed road side, 124 feet run of 12" x 10" fenders my in front of town side	do	44 9 0	
Cart weighbridge and approach	feet run of 12" x 10" fenders put in front of town side 10-ton cart weighbridge, approach to goods shed, widened, earthwork 2 feet deep, ballast 1'3" deep.	do	11 15 8	************
Wiring fence near Mr. Strongitharm's.	Two additional wires on both sides of line from 252 m. 36 chs. to 252 m. 58 chs., and three additional wires on both sides of line from 252 m. 58 chs. to 253 m. 12 chains.	do	12 7 0	******
Widening goods shed road	Earthwork 2 feet deep, ballast and pitching 1' 3" deep. Do do	đo do	21 19 2	274 11
Mullaley's Siding:— New signals	Just commenced	do		2 8
Cungegong: Wiring Sayer's and Atkin's fence.	•	do		*******
Wiring Connor's fence	60 chs. Three wires on one side of line from 260 m. 61 chs. to 262 m. 72 chs., and from 260 m. 60 chs. to 261 m.		**********	228 19
Signals	48 chains.			1 15 1

SOUTHERN AND SOUTH-WESTERN LINES-continued.

Description of Work.	Accommodation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
Dathumana			£ s. d.	£ s. d.
Bethungra:— Improvements to cottages	1,062 super. feet of studding and weatherboards fixed, blocks renewed.	Day labour	62 18 10	**********
Do gatehouses	354 super. feet of studding and weatherboards fixed New water-crane	do	25 19 11 6 6 11	••••••
Water supply Wiring fence, Sawyer & Smith's, 267 miles 64 chains.	Three additional wires on both sides of line from 268 m. 40 chs. to 270 m. 40 chs.	Day labour	11 10 3 65 3 6	352 9 2 42 11 9
Engine-pit	46 feet long	do		101 8 10
Level Crossings, 285 m. 42 chs Illabo:—	Two 15-feet gates, 24 yards metal and 12 yards of blinding used.	do	55 14 2	
Wiring fence, Cowley's property Junee :—	Three additional wires on both sides of line from 270 m. 40 chs. to 271 m. 60 chs.	do	22 4 6	121 3 10
Draining refreshment room Additional tank Improvements, station-master's	600 feet of 6" E.W. drain-pipe	do do do	129 16 1 74 4 5	••••••
house. Employés cottages.	new blocks put in foundation. Four 4-roomed loco. cottages built of hardwood, stud and weatherboards, kitchen partly erected, and one	do	1,007 2 1	2,141 17 11
Additional W.C. accommodation	5-roomed brick cottage built, window-sill high. Six additional W.C's. with a number of urinal stalls built of hardwood, stud, and weatherboards on brick foundations, covered with galvanized iron, and	_	548 9 8	9 18 (
Additional office accommodation	tower ventilation lantern constructed in roof. Office walls and ceilings relined; office 16 feet x 20 feet, built of hardwood, stud, and weatherboards, and station painted inside and out.	do	523 8 10	9 18 (
Wiring station-yard	Four additional wiresin 56 chains 35 feet of boundary fence.		29 7 10	
Semaphore and distance signal Bricking copper for foot-warmers.	Wooden signal 22 feet, to light Copper set and chimney built in brickwork, and room 5' 6" x 4' 7" built of hardwood, stud, and weather- boards, covered with galvanized iron, on brick foun- dations.	do do	130 2 4 26 9 0	29 9 3 3 6 6
Widening goods shed road	Lengthened 10 chains x 25 feet, 18" of earthwork, 500 yards rubble, 130 yards broken metal, and 228 yards blinding used.	do	205 17 1	•••••••
New truck weighbridge and office	20-ton weighbridge, and office 11 feet x 4' 10", built of hardwood, stud, and weatherboards, covered with	do	140 6 7	25 13 (
Crane Wallacetown:—	galvanized iron. Repairs to one of the wheels.	do	••••••	0 6
Loading stage	20' 6" x 10', built of wood, covered with 3" decking	do	21 2 1	0 10 1
W.C	5' x 4', stud and weatherboards, surrounded by urinal 11' x 8' x 2' 6", galvanized-iron on wood.	Day labour	••••••	8 5
North Wagga:— Tanks at gatehouses South Wagga:—	Five 400-gallon tanks and stands		25 18 4	
Altering distance signal	Up and down distance signals which were erected by contract or altered so as to work properly.	Day labour	61 16 7	4
Lighting station with gas	Eighteen lamps and posts in yard and outside station, and thirty-two lights inside station buildings.	_	307 4 11	***********
Hay guageStock yards and siding	Two cattle yards to hold 600 cattle, with races and crushes complete; eight sheep yards to hold 6,000		6 13 9 951 6 9	1,503 3 1
Cottages for traffic staff	built of hardwood, stud, and weatherboards, lined with T and G redwood, all fenced in, and waterway	do	1,286 12 11	1,187 9
Fencing gatehouses Goulburn to Wagga Wagga.	5 feet ironbark palings and fencing, and three wicket gates,		41 4 6	••••••
CraneStation buildings	Repairs to crane Drainage to station repaired and goods shed repaired	do	1 19 6	33 5 0
Cart weighbridge	Pit, weighbridge, and drainage complete Locomotive tank removed from Bomen and re-erected at	do		119 9 0 421 3 8
Additions to engine-pit	Wagga.			1 14 9
New lamps Wool stage and loading stage		Day labour	8 3 1 148 18 0	0 16 4
W.C. & urinal		do	10 14 5	8 5 0
SemaphoreLevel Crossing	New semaphore signal	do do	130 6 0	9 2 5 64 1 11
Hanging Rock: Lamps and room		do	29 12 9	
·	14' x 8', covered with galvanized iron, fittings, &c.	_		7 5 6
Semaphore	Wooden semaphore, 25 feet, to light	do	134 1 2	152

SOUTHERN AND SOUTH-WESTERN LINES .- continued.

Description of Work.	Accommodation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
Hanging Rock—continued:— Fencing station master's house	Transverse fence, 8 panels of 5-feet hardwood paling fence and wicket gate; 1 side fence, 3 panels of 5-feet hardwood paling fence, and 1 side fence, 2 panels, and wicket gate.	•	£ s. d. 19 4 2	£ s. d. 2 16 0
Crane	5-ton crane, built on piles and filled in with brickwork in cement.	do	363 4 2	38 19 6
Terong Creek:— Lamps Approach to wool-stage and load-	2 platform lamps and posts, and 1 do wall lamp. Approach formed, pitched with rough stone and	do . do	6 5 10	
ing stage. Signals	ballasted, length 10 chains 46 feet, width 20 feet. Wooden semaphore, 25 feet, to light; up distant iron signal, 15 feet, to light; down distant wooden	do	123 14 1 121 8 4	24 1 13 11 0 1
w.c	signal, 18 feet, to light. W.C. 5' x 4', built of hardwood, stud, and weatherboards, surrounded by urinals 15' x 8' 6", galvanized iron on	do	***********	8 5 (
Dudalcooma:— Water supply:	hardwood frames. Water tank on wooden stand	do	,	0 10 6
Culcairn:				. 0.10 6
Lamps Semaphore	2 platform lamps and posts and 2 platform wall lamps Wooden semaphore, 32 feet, to light 14 feet x 9 feet, roofed with galvanized iron, fittings. &c Transverse fence 10 panels of hardwood paling fence and wicket gate, 3 panels of side hardwood paling	do do Day 1 ibour.	10 16 7 68 10 8 27 7 4 18 8 8	1 18 10
_	fence, and 2 panels of hardwood paling fence and wicket gate.			
Crane	5-ton crane on piles filled in with brickwork in cement 54 feet long 2 sides and 11'6" retaining wall built in brickwork.	do . do	390 3 11 259 8 4	18 15 2
Stockyards	Erection commenced and stopped with other Schedule G jobs completed during present year.	do .		153 14 11
Water supply	New crossing 15 feet, gates, 12' x 12', box drains, approach fences, and ground rails complete, approach road 14 yards long, 18 feet wide, and 3 feet deep on both sides of line made up with earth and ballasted,	Day labour.		1 4 0 60 10 9
Gerogery:— Lamp-room and lamps	2 box drains 24 feet long, 18" wide, 12" deep.	a.	40.10.0	
Crane	Room 14' x 8' 6", roofed with galvanized iron, two plat- form lamps and posts, and two platform wall lamps 5-ton crane on piles and filled in with brickwork in	do . do	43 13 3 332 18 8	49 2 10
Dividing fence, station-master's	cement. Dividing fence, 19 panels of 5 feet hardwood paling fence.	do		0 17 4
house. Signals	wicket gate and two side fences and wicket gate. Up and down distant Victorian iron signals, 15 feet to light, wooden semaphore, 25 feet, to light	do		118 13 4
Bowna:—		_		•
Signals Lamp-room	Up and down distant iron signals, 22 feet, to light Room 10' x 7' 6", roofed with iron, passage to ladies' W.C. covered, and louvers and sashes fixed for ventilation.	do	14 16 6	43 18 2
Fireplace and station chimney Enlarging station-yard	Brick fireplace and chimney built in office 1,550 cubic yards of earth removed and ballasted over from where the earth was taken, 48 cubic yards of ballast used.	do do		26 19 5 197 1 4
Ettamogah:— New gate	Gate 15' 6" at entrance to station, and gate at entrance	do .	26 12 4	
Platform Loading stage	to platform. 120 feet long, 12 feet wide, and brick front wall 120 feet long formed to bank with 10 piles, sheathed at back with 3" sawn planking and square dock capping	do do	62 19 8 137 18 4	
Approach road	on top. Loading bank on right hand side of line 132 feet long x 52 feet wide with approach road 7 chains 60 feet long x 22 feet, pitched and ballasted. One left side of line a passenger platform 120 feet long x 12 feet wide with approach road 7 chains 50 feet long x	do	206 9 10	
Tank	16 feet wide, filled up and ballasted. 2 400-gallon tanks and stands	- do .	10 10 5	
Albury:— Platform & siding Wagga Wagga to racecourse, 383 m. 60 chs.	Platform 150 feet long x 12 feet wide, built of hardwood on tressels, steps each end.	do	229 4 10	
Covering shed on wool stage .	Shed 158 feet long by 23 feet wide, covered with gal- vanized iron, guttering, &c, fixed.	do	124 15 11	
Iron roof on temporary shed	Ladies waiting-room & W.C., 10 feet x 12 feet; lavatory and gentlemens' & W.C. urinals, 10 feet x 10 feet; under roof over wool stage, built of iron, outside and upright, 1" T. & G. boarded partition'	do	70 12 11	
Bricking copper for foot-warmers. Barricades on platforms	Copper boiler supplied	do	3 7 1	
Crane	10-ton crane, 40 feet jib	o do do	$\begin{array}{cccc} 7 & 10 & 4 \\ 6 & 10 & 3 \end{array}$	274 15 10
Wicket gate Drinking fountain Lamps	Wicket gate with wings 2 of Cheavin's patent filters, with wooden stands 8 Ornamented suspension lamps, 11 lamps and posts in yard.	do do	12 13 5 9 12 3	

SOUTHERN AND SOUTH WESTERN LINES.—continued.

Description of Work.	Accommodation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
Albury—continued:— Fencing Commissioner's land, 384	2-rail and 4-wire fence, 17 posts, 32 rails, & 540 feet	Day lahour	£ s. d.	£ s. d. 9 10 6
miles 34 chains. Kerbing and posts	wire used. 548'-2" run of 6" kerbing & 2 12" stone water tables.			389 18 11
Semaphore	with 4 round outer corners & 4 round inner corners. Wooden semaphore, 5 feet, to light	Day labour		19 10 6
Fixing tank, porters' cottages	6 tank and stands fixed	do		9 18 3
Cart weighbridge and office Water to W. C	Cart weighbridge, pit and drains complete	do do		128 11 2
Hay gauge	1 part of hay gauge, authorized to pattern, fixed on goods shed road.	do		30 1 8 19 17 9
Siding cattle yards	Timber charged for buffer stops and scotch-blocks fixed			9 17 9
Pumps for general purposes	Pumps for general purposes	Day labour		377 0 6
Old Junee :— Semaphore	Wooden semaphore, 25 feet to light	do	58 12 3	7 10 0
Crane	New 10-ton crane	do		$\begin{array}{cccccccccccccccccccccccccccccccccccc$
Gate	16-feet gate repaired	do		2 2 0
Platform 14 miles	50 feet long x 8 feet wide, built of hardwood tressels, with 3" oregon decking.	do	• • • • • • • • • • • • • • • • • • • •	6 11 8
Coolaman:— Semaphore	Wooden semaphore 25 feet, to light	do	8 8 4	
Lamp room	14 feet x 11 feet, roofed in with galvanized iron	do	32 3 1	
Platform Crane	New platform New 10-ton crane	Contract Day labour	62 17 10	
Devlin's Siding 39 m. 33 chs:-		,	********	166 9 0
Siding	Siding 334 feet long, to hold 9 trucks clear, buffer stops and scotch-blocks.	do	178 17 1	
Signals:	New signals commenced	do		2 16′ 9
Gate	New 15-feet gate complete		21 1İ 4	
Chimney at station	New brick chimney and fireplace	do		23 14 7
Tanks, Perway men, Junee to	30 400-gallon tanks	do	138 5 .5.	***********
Stop-blocksSemaphore	6 stop-blocks sent to Narrandera, but only 3 fixed Wooden semaphore 25 feet, to light; alterations to distant signal.	do do	$egin{array}{cccc} 14 & 19 & 3 \ 2 & 12 & 11 \end{array}$	72 11 6
Water supply	1 400-gallon tank and stand	do	5 19 2	
Lamp-room	Space in yard closed in and fittings erected	do	25 2 11	
	4-roomed wooden house on brick foundation, with verandah, walls and ceiling lined with T. & G. redwood, W.C., and 2 400-gallon tanks.	do	292 7 9	186 14 4
Crane	5-ton crane, fixed on piles and filled in with brickwork in cement.	do	263 3 7	99 1 5
Widening, &c., goods shed road	Bank made up 150 feet long, 8 feet deep; 152 cubic yards pitching, & 360 cubic yards & 180 cubic yards blinding used.	do		622 15 7
Cart weighbridge Lengthening culvert	10-ton cart weighbridge, pit and drain Brick culvert lengthened 63 feet.	do		116 6
Siding for Mr. Camphy	330 feet long, to hold 8 additional trucks, scotch-block	do		98 2 5 55 2
Engine-pit	fixed. 33 feet long, built of brick 2'10" wide, 2 feet 1 inch	_ \	·	
Enlarging gatehouse, Mrs. Farrell's	deep, with 16" x 6" hardwood plates.	do	***********	88 19
	wide, brick chimney, 1 400-gallon tank, W.C. 5' x 4'.	do	***********	122 3
Quarry :— Siding	Length 308 feet, to hold 7 trucks, 1 set of buffer stops	do	176 18 2	
Gate at contractor's siding	and scotch-blocks. 15-feet gate posts and all painted complete.		:	
Hulong:— Tank stand	· •	do	***********	17 15 %
Porter's cottage	Hardwood stand to hold 3 tanks	do do		1 11 3 419 4 3
Water supply	3 400-gallon tanks	do		16 19 4
Darlington :	New 5-ton crane	do		168 14 7
Tanks for gangers, Narrandera to Cottages	32 400-gallon tanks 1 4-roomed cottage, 2 rooms 11'x 11', and 2 rooms 11'x 10', built of hardwood stud and weatherboards on brick foundation, verandah 4 feet wide, W.C.	do	146 2 0 242 3 10	269 9
Stockyards	5' x 4' on brick cesspit, 2 400-gallon tanks, &c. 3 new cattle yards to hold 100 head of cattle, with race	do		238 14 3
Signals, Junee Junction	50 feet long and crush complete. General repairs	do		10 19 10
Crane	New 5-ton crane	do		167 10 7
Tanks, Carrathool to	18 400-gallon tanks	do		90 15 5 2 4 9
Stop-blocks	3 stop-blocks	do		14 6 7
Benerembah:— Fireplace to station	Brick fireplace and chimney	do		19 9 3
		αο		\$ 0 B

SOUTHERN AND SOUTH-WESTERN LINES-continued.

Description of Work.	Accommodation given.	How carried out.	Amount expended in- 1881.	Amount expended in 1882.
errathool:—			£ s. d.	£ s. d.
Lamps	2 platform wall lamps	Day labour		1 2 9
Crane	New 5-ton crane	do		166 9 11
Stockyards	2 additional sheep-yards to hold 4,000 sheep	do		96 7 7
Vood openings, $67.65m$ and $52.69\frac{1}{2}m$: Do do	Timber charged, but work not commenced	do		962
Tooroongal:-				
Stop-blocks		••••••	*********	0 15 7
'anko siding :— Stop-blocks	,			0 15 8
Iay:—				105 11 10
Water supply	New 5-ton crane on piles filled in with brickwork in	D 1-1	**********	105 11 10 366 9 2
Crane	cement.	Day Isbour		300 3 2
Signals		do		10 11 4
Harden :	10 1005, 00g			ĺ
Cottages for cleaners, omitted from	£36 15s. 7d. worth of additional work done	do	36 15 7	•••
Harden sheet.		£	83,582 12 1	91,344 -6 6

WESTERN LINE.

RETURN of Expenditure for alterations and additions to Railway Stations, Sidings, and Bridges, during 1881 and 1882.

(All the material used in works carried out by day labour was supplied under contract.)

Description of Work.	Accommodation given.	How carried out.	Amount - expended in 1881.	Amount expended in 1882.
Parramatta:— Improvements to station	New Station 153' x 18' 7", containing lamp-room, parcels room, ticket-office, waiting-room, telegraph Inspector's office, station-master's office, ladies' waiting-	Day labour	£ s. d. 3,862 10 5	£ s. d. 4,208 0 11
	room, lavatory and two water-closets, two gentlemen's closets, and nine urinals, with all necessary fittings complete, goods shed 150' 4" x 34' 10", outside covered platforms, 171'x8' and 43' 4"x10', two loading platforms 50' x 10' and 51' x 10', one platform 403' x 14', and 302 feet of 5 feet galvanized-iron fence on up line side, and a platform 398' x 14', 443 of 5 feet galvanized iron fence, two docks 101' 8" and 133', new stockyards 38' x 12', and 3 sets of buffer-stops on down line side.			-
Land for additional accommodation	110 panels of 5-feet paling fence	do do	16 10 0 130 14 7 2 16 0	41 9 10
Overbridge Lighting parcels-office Water and new gate-keeper's box	Two burners fixed, 21 feet pipe laid Water laid on to Station buildings, 1,036 feet 4-inch pipe laid, and 18 hydrants fixed, watch-box for gate-		1 8 1	398 7 6
New Platform, 16 miles 35:25 chains Culvert, 16½ miles	keeper, Harris Park, 8' x 8'. 50 feet long, with 15 feet ramp at each end	do do	**********	19 4 0 1 6 3
Tank W.C. and urinal	400-gallon tank fixed	do do		2 10 3 82 17 3
Blacktown:— Extending block siding Drinking fountain	Extended to hold 11 trucks	do do	13 15 4 9 14 11	
Extending dock siding Lengthening coal stage	Extended to hold 44 trucks	do do	70 11 7	31 9 3
Slip-points	35' long, to hold 1 truck Excavation done by Department 30 feet iron signal	do do do		49 1 11 19 6 1 9 7 7
Rooty Hill:— Improvements	New ticket-office, ladies' waiting-room, W.C., and new platform.	do	1,111 9 4	
Platform	Lengthened 101 x 11' 6", and widened 250' x 4' Slip-points, 35 links put in	do	28 1 8	6 16 8 19 16 5
Mount Druitt: Siding Platform Signals		do	432 13 2 115 9 1 41 4 4	84 15 9
South Creek:— Watch-box at crossing New siding, &c Crane	10.65 chains long, to hold 39 trucks	do	2 19 3	83 17 10
Cross Roads:— Additional room, porter's house	16′ x 12′	do		99 3 7

Description of Work.	Accommodation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
Penrith:— Additional siding accommodation	4 miles 3·18 chains sidings laid in, affording accommodation for about 1,185 additional trucks, 2 docks 274′ 9″ and 330′ 6″ long, both ends of platform lengthened 144′ and 40′ respectively, bridge widened 140′ x 220′, 9 sets buffer-stops, good-shed 150′ x 43′		£ s. d. 18,023 13 7	£ s. d 14,211 1 10
	with three outside covered platforms 170' x 8', 29' x 10', and 29' x 10', and 50' loading stage at each end			
Water supply locomotives	10 feet diameter, with underground drive to river 150 feet long, 6' x 4', old well deepened 10 feet.	do	612 3 10	4,569 10
Copper for foot-warmers	36-gallon copper fixed	do do	14 1 9 156 2 10 0 4 9	
Cranes	New 5-ton crane Running shed lengthened 90' x 52' 6" at Sydney end, and 120' x 52' 6" at Bathurst end, 2 nests of lockers,	Day labour do	71 5 7	135 15 1,187 7
	with room inside 97' x 12' divided into shed, inspector's room, enginemen's room, store-room, passage, bulk store-room, and fitters' room with yyce			
House over pumping engine	shoot 35' x 6'.	do	•••••••	21 5 1]
House for pump		**********	**********	155 0 6
Weighbridge and office Water-cranes to engine-shed	New 14' cart weighbridge, and office 9' x 7', 12' truck weighbridge removed, and new office 10' x 7'. 2 water-cranes fixed, brick and stone foundations			165 2 1 1
Imu Plains:— Siding gravel pit	New siding 425 chains long, giving accommodation for 15 trucks.	do	3 7 4 6 4	238 9 3 12 1 2 (
Dock siding	Foundation partly filled up	do do	3 1 10	59 1 0 (
apstone, Zig Zag:— Watch-box for pointsman	10′ x 7′	do	48 12 11	***********
Water supply Semaphore	Department.	d o	62 7 9	7 6 10
Platform Office	Steps at each end, and lamp erected	do do	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0 7 8 4 10 8
Kitchen, station-master's house	10' x 3'. 16' x 12' with shelving, colonial oven, and covered porch 6' x 4' from house.	'do		114 5
Water supply for locomotive	The state of the s		41 13 11	
Platform between The Valley and Glenbrook.	Platform at Karabar 101' x 8', with waiting shed 20' x 10', partitioned off for room for parcels 10' x 7', and verandah in front of waiting-room 20' x 3' 6".	Day labour	230 8 6	***************************************
pringwood:— Improvements	back and front.	do	• 19 3 9	***********
Semaphore	Up home signal 20 feet high; down home signal 29 feet high; up distant iron signal 20 feet high; down distant iron signal 20 feet high.	do	149 2 6	0 17 (2
Level crossings at 48½ miles Do 1 mile west of Linden autombridge:—	Two 15-feet gates, guard rails, &c	do do	65 18 11 25 7 2	***********
Improvements Goods-office Waiting-room	Weatherboard office 15' x 9' do do do	do do do	49 16 6	21 16 3 54 19 8
Crossings, 48½	lined, and seats provided. See "Mileage, 48½"			2 10 2 3 0 0
inden:— Co-operative siding and ballasting, &c.	Loop siding 2,498 feet long, to hold 138 trucks	Day labour	1,890 11 7	
Wicket-gate	Circular gate with wings 12 feet approach, 70 feet of 5-feet picket fence.	do	65 5 5	
Signals	Wooden semaphore, 22 feet, to light; down distant wooden signal, 18 feet, to light; up distant wooden signal, 18 feet, to light	do	122 4 8	***************************************
Porter's house and office	4-roomed house 12' x 12' x 9' weatherboards, on brick foundations, lined, verandah, two brick chimneys, two 400-gallon tanks, W.C. and brick cesspit, front enclosed with 5-feet picket fence; office 12' x 14' x 10', weatherboards, on platforms.	do	420 0 8	132 13 8
Lengthening platform Improvements Water supply loco. Room for night officers.	Lengthened 100 feet	do do do do	39 9 10	9 6 5 23 7 3 109 12 3
Level crossing, ½-mile west of	12-feet gates, 18 rods fencing, guard rails, and approach road.	dο		58 7 9 6 2 0

Description of Work.	Accommodation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
	·		£ s. d.	£ s. d
wson:— Water supply	Creek dam extended and raised 7 feet, pumping-house	Day labour	307 7 0	562 11 9
Covered way to urinal	and pump, two water cranes, and necessary piping. Verandah extended 63 feet from station to urinals 170 feet galvanized iron fencing, 100 feet of 5-feet	do	100 4 6 86 4 8	
Semaphore Overbridge	paling fence. Wooden semaphore 22 feet high 30 feet long, with four wooden girders and galvanized	do do	50 11 7 181 4 8	0 3 10
Extending siding	iron fence. Dead end siding extended 99 feet	do	······	35 6 (
entworth Falls:— Water supply	Creek dammed across with brick and cement wall 50 feet, 7 feet high, 3 feet wide, with flood-gate and	do	9 15 0	327 8
Semaphore, &c	stone retaining-wall. Up home iron signal 20 feet high; down home iron signal 20 feet high; up distant signal 20 feet high; down distant signal 20 feet high.	do	101 19 7	121 19
Block siding	Siding extended 538 feet	do	180 17 4	75 4
atoomba:— Signals Improvements	2 distant signals and 2 split home signals	do do	159 4 6 1,071 8 7	1 16 24 16
dings, 66-68m. and 66-65m.:— Do do	157 feet long, to hold 8 trucks	do	22 15 6	**********
Fedlow:— Platform	Timber platform, 100 feet long, 12 feet wide	do		94 10
lackheath:— Signals	Up distant wooden signal, 18 feet, to light; down dis-	do	158 12 8	7 8
New sidings, &c	tant wooden semaphore, 20 feet, to light. New loop siding 4,639 feet long	đo	1,983 17 6	437 9 54 1
New through road	Temporary W.C. and urinals, brick cesspit, built of timber and galvanised-iron.	Day labour		7 1
etaining wall west 76.50m.:— Do do	75 cubic yards of brick and coment, and 100 cubic yards of excavation.	do	224 5 5	
Tount Victoria: Buffer stops in dock	New set of buffer stops	do do	29 4 10 6 12 0	201 8
Lengthening platform New fence from bridge to stock yards.	Lengthened 300 feet	do	17 19 5	254 16
Cartley Vale:— Siding	Excavation for lengthening siding 370 feet, about 1,000 cubic yards of earth.			· 178 11 0 16
Gate	Wicket gate and wings	1	15 10 0	
Semaphore	Lengthened 75' x 8'	do	86 5 11	************
Ladies' waiting-room, W.C., &c		'do ,,,		209 19
larence Siding:— Fencing porter's house		do	1 40 10 4	4 4
Semaphore W.C.	New W.C. and urinals, built of iron and timber, with brick cesspits, &c.	do	42 15 5	3 6
Extending block siding		do do		777 17 35 0
thgow Zigzag:— Block signals	Small addition Pipes renewed from dam to reservoir	do	0 5 9 2 14 8	
Additional water supply Offices bottom points	. Office 10' x 12', built of timber and lined, fittings, &c	do	05 19 5	
Loading-stage Porter's house	Platform lengthened 100' x 7'	do	1	90 2
W.C. and urinal	W.C. and urinal, built of iron and timber, brick cess			3 6
Siding Station, &c	Length of siding, 12,315 feet	, Contract		40 4
	Telegraph office 16' x 16'; general waiting room 20' x 23', booking office, 16' x 16', ladies' waiting room 16' x 16', ladies' W.C. and lavatory, W.C. an	n -		
Truck weighbridge	urinals, &c., &c. Two Fairbank weighbridges	Day labour.	1 000 14 1	12 6
Signals	semaphore, 16 feet. Rubble walls 100' x 40', built of timber on piles, floor		E40 10 10	453 12
Ballasting station-yards	on steepers. 27 cubic yards ballast spread	do .	11 13 0	2 10
Crane Loading stage	1-ton crane, part of 10-ton crane fixed	. do .	13 14 6	2 19 50 17
Turn-table	35 1 1 1 C 4-1-1-	ao •		5 6 6 3

Description of Work.	Accommodation given.	How carried out,	Amount expended in 1881.	Amount expended in 1882.
Eskbank—continued:—		1		
Waiting-shed	Waiting-shed 45' x 12', brick, iron roof	Day labour	£ s. d.	£ s. d 278 16
W.C. for guards	. I from W.C. with brick cesspit	do		3 5
Fencing Cart weighbridge	3 chains of 5 feet paling fence	do		3 0 (
Lithgow:—			••••••	4 18 (
Tank at station	2 400-gallon tanks	Day labour		
Goods shed	One cast-iron drinking fountain Up Line waiting shed and platform 130 feet x 8 feet	do	5 7 10	
	glass doors, 400-gallon tank, &c.	do .	462 5 7	14 11 8
Fencing Bowenfels:—	30 chains 40 feet paling fence	do	*********	4 12 11
Enginemen's house	2-roomed weatherboard house, each room 12' x 14',] a_ [00 11 7	
_	on brick foundation, verandah, fires and chimneys	[]	96 11 1	•••••••
Additional water supply	Engine-house 16' x 12', iron, with wooden frame on	do .	180 16 3	**********
Guard's house	brick foundations, and iron tank 2-roomed house, each 16' x 20', weatherboards, iron		47 70 0	
	roof, brick fireplaces and chimneys.	do	41 13 0	***********
Signals	Two back boards to give drivers better view of signals	do		12 5 6
Wiring Brown's fence Wallerawang:—	Two additional wires, 176 chains 3 roods	do		40 8 6
Cattle yards	. New cattle and sheep trucking yards, with race, &c.	do	153 18 10	50 0 0
Cattle siding	Extended 606 feet, to hold twenty-eight cattle trucks	0.5	371 18 6	58 0 0
Washhouse for station-master . Carriage dock siding, &c	1 Iron, 10' x 10', portable copper, paved with brick sink			10 12 11
Wiring Abbott's fence	Double Line carriage dock 831 feet long Fence wired from 102 to 104 miles	do		307 17 2
Loading stage	Stage 40 feet long	do		19 5 C 23 11 3
Signals	Alterations to signals	do		11 13 1
Draining yard	150 feet 18" drain pipe, 50 feet 3-feet box culvert	do		4 0 0
Siding for Mr. Hughes	. 761 feet long, with timber wharf 198 feet long	do .		143 5 10
Sodwalls:—	•	1	*********	140 0 10
Ballasting siding	New siding, 348 feet long, buffer stops, with approach and gate.	do	240 18 8	*******
Wiring fence	Two wires, 111 chains long, bounding Mr. M'Laughlin's	do		44.10.0
_	property.	uo	************	44 19 8
Tarana : Lamp-room	Wanthanhaand mann 9/ - 10/			
Extending siding	Weatherboard room 8' x 10', with iron roof Cattle yards siding extended 248 feet	do .	4 5 3	• • • • • • • • • • • • • • • • • • • •
Loading stage and siding	Loading stage 60' x 12' x 5' 6" high. New siding and	do . do	158 14 7 7 16 0	677 7 6
Waterenal	through road 434 feet long, to hold 32 trucks		10 0	011 1 0
Water supply Stockyards	New brick well 35 feet deep 12 feet in diameter Sheep and cattle trucking yards, and lane fenced in as	do		547 2 0
	approach to yards.	do	ł	355 19 3
Additions to station building	1 room 14' x 16', 1 room 26' x 14' added, office enlarged	do .		563 16 9
	8 feet, waiting shed front bricked, brick fireplace put in, verandah 70' x 12', closets altered, water laid on,	i		
8/4	åc.			
Signals	Up distant signal put back to protect siding	do .		4 3 6
Locksley:— Semaphore	Material only charged	a.	10.10	
Brewongle :	- 0	do	18 19 8	3 4 7
W.C., porter's house	Weatherboard W.C. with brick cesspit	do .	8 7 7	
Ballasting loop siding	New loop siding 554 feet long, 2 sets of crossings 1 set catch-points laid	do	453 1 10	1 13 10
Signal	New up distant signal	*do do		20 16 0
Wiring fences	2 additional wires 120 chains long	do		42 4 11 53 18 0
Raglan:— Kitchen, station-master's house	3 rooms 12' x 12' each, one, 8' x 10', wash-house 10' x 8',	,		
satisfied states in the state of the state o	weatherboards on brick foundations, brick chimney in	do .	170 14 8	86 10 9
G' -1	kitchen.	1		
Signal Lamp-room	2 new distant signals	do	20 16 4	8 5 11 9
р 100	counter, &c.	do	47 2 9	6 10 4
Weighbridge				1 17 6
<i>Yelso</i> :— Signals	Now up distant similar			
Lengthening loading stage	New up distant signal Stage lengthened 50' x 15'	Day labour	46 6 3 46 17 0	• • • • • • • • • • • • • • • • • • • •
Lamps and targets on crossing	2 lamps and 2 targets	do	13 17 3	**********
$egin{array}{c} ext{gates.} \ ext{Platform} \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots$	Ranaina			
Bathurst:—	Repairs	do .		6 0 0
Water supply	Well deepened through granite, pump house 33' x 15'	do .	481 4 1	
House for station-master	erected, galvanized iron, on brick foundations. 2-storey brick house of 7 rooms, kitchen, scullery, bath-	n , i		
	room, underground tank, verandah, slate roof,	Day labour & contract	105 17 4	••• •••••
T 11	enclosed with picket fence.	a contract	ļ	
Loading stage, forming approach. Kitchen to guard's house, plastering	Stage 50' x 12', approach road formed and metalled	do	83 14 3	
-	Weatherboard kitchen 14' x 12' on brick foundations brick chimney, lined, cooking-stove.	do	78 3 0	$2 \ 2 \ 4$
Parcels room	Fittings, shelves, new counter with drawers	do	37 13 6	
Bricking copper for foot-warmers	140-gallon copper built in, water laid on, chimney 25'	do .	12 17 1	
	high.	_		20770 -
Lengthening turn-table road, turn-	Koad lengthened 66 feet 50 feet turn-table	ا م		
Lengthening turn-table road, turn-table.	Road lengthened 66 feet, 50 feet turn-table	do	9 7 3	387 10 5
	2 brick rooms, each 18' x 16' x 12' high, fittings, &c. old lamp-room converted into gentlemen's waiting.	do	9 7 3	552 6 3

Description of Work.	Accommodation given.	How carried out.	Amoun t expended in 1881.	Amount expended in 1882.
nthurst—continued:— Paling fence, church land water	16 rods 5-feet paling fence, 1,093 feet 18" drain pipe	Day labour	£ s. d. 11 19 8	£ s. d
way. Extending station verandah	laid. Verandah lengthened 35 feet at east end and 14 feet at	& contract.	52 8 2	73 11
New office for loco	west end. Brick office, two rooms, each 16' x 17' x 11', verandah, concrete floors on verandah, fittings, cupboards, &c.	Day labour	15 16 5	913 4
Crane	Repairs only	do Contract .	0 6 9 25 0 0	2,773 16
Station garden			71 4 4 41 18 5 160 10 0	
Additions to loco. workshops	Built of galvanized iron 200' x 40', two brick ashpits, 200 feet each, on brick foundations.			3,046 0
Fencing land, permanent-way	Land fenced, and permanent-way, carpenters' and black-	do .		1,251 18
Improvements to yards	smiths' shops erected. 5,445 lineal feet of line laid, 16,918 cubic yards of earthwork done, subway, brickwork, 220 cubic yards, ashput 100 feet long, brickwork on piles, drainage and	do		5,450 6
Platform	road improved, &c. 264 feet long 15 feet wide, 59 yards brickwork, 78 yards	do .		30 5
District Engineer's office	cement concrete, 264 feet coping. Brick office, two rooms, 14' x 6" x 14', one room 17 x 12, two rooms 12' x 8' each, hall 3' x 14' 6", verandah	do		645 15
W C. and urinals .	6' x 32', buggy and coal shed, office furniture, &c Dry carth brick closets roofed with galvanized iron	do .	•	17 15
Signals Interlocking apparatus	Removing signals	do		63 5
Permanent-way machinery Coal stage	do	do . do		4 16 1 11
Workshops	Blacksmiths' shops 68' x 33', nine forges, carpenters' shops 77' x 40', fitters' shops 41' x 40', engine-house 40' x 11'.	do		155 6
oggy Creek :— Water supply			58 11 8	
rth :— Crane	5-ton crane on brick foundation	Day labour do		306 2 71 2
Goods shed	iron, counter, fittings, &c 24' x 12', built of galvanized iron, 40 feet of staging 12'	do		7 2
Culverts 149.60m. and 150.43m.	wide. Material only	do .		1 1
eor e's Plains:— Additions to platform	Verandah 60' x 12' over platform	do do	141 1 1 72 6 11	
Wicket gate	Circular gate with wings Fairbank weighbridge set in brick and cement Stage lengthened 50 feet, approach road formed and and metalled.	do do do		8 2 122 12 133 19
imbledon:— Signals Ticket office	Material for four signals Material for office 12' x 12'	do do		37 2 9 2
ewbridge:— Cart weighbridge Loading stage Wire fence	Weighbridge only			60 0 81 7 1 15
layney:— Gatehouse			569 18 4	
Watchman's box Station-master's house Fencing	Weatherboard box 6' x 5'	do . do . do .	24 8 11 20 6 8	19 11
oring Grove: — Altering signals Tank and frame	Signal removed to better site	do do	35 12 2 20 17 8	1 4
Cart weighbridge	Material only	Day labour		14 15 31 12 0 2
oring Hill:— Signal Porters' cottages	2 new distant signals 4-roomed weatherboard cottage, 12' x 12' each, on brick	do .	83 14 10	0 2 11 5
Cart weighbridge	foundations, verandah, and 2 400-gallon tanks. Cart weighbridge fixed and office 7' x 5' on brick			145 4
Water supply	foundation. Brick lined well 25 feet deep, force pump, 2 400-gallon			106 4
Siding to loading stage	tanks, 200 feet 2" piping laid, &c. 5 chains 41 feet long Lengthened 1 chain 60 feet, to hold 7 trucks	do do		249 14 138 9
range:— Water supply	Well deepened 15 feet and lined, and timbers for carry- ing pump, and timber top provided.	do	. 118 17 5	
Signal	New shunting signal, 18 feet, to light	do . do . l do	66 15 0 92 3 7 816 13 5	

WESTERN LINE .- continued.

Description of Work,	Accommodation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
Orange—continued:—		<u>`</u>		
Ahspit		Day labour	£ s. d. 139 18 4	£ s. d.
Block siding 193 42m	271 feet long, to hold 15 trucks	•	279 15 1	**********
Watch-box	Weatherboad box 7' x 7', fitted with stove and pining	Day lahour	30 1 0	***************************************
Weighbridge and office	Material only provided	1 -	0 13 0	**********
Wiring fences west	1 mile of fencing wired	Day labour	18 14 0	•••••
i lattorin enclosing	50 feet galvanized iron fence and 100 feet 5-ft. picket fence.	do		19 19 3
Fencing yard	14 miles of 6-feet paling fence, 1 15-feet gate and 2	do		211 7 0
Improvements	12-feet gates.			
•	brick cesspit 10' x 6' x 6', 5 small brick and cement catch-pits 26" x 26" x 3".			148 17 8
Balcony, station-master's house	4 brick porches to support balconies, ornamental cast iron palisading, brickwork cemented, 2 pairs	do		279 10 11
Removing lamp-room	glass doors, 3 pairs glass sashes in porches. Room removed from platform	۵.		
Widening gates	Summer-street crossing gates widened to 36 feet	do		7 15 5
Mullion Creek :-	stands of opposing garden without to be icentification	do		12 5 9
W. C. urinal	Galvanized iron on wooden frames, weatherboard W.C.	do	42 6 1	***********
Block siding	with brick cesspit.	,		
New do	316 feet long, approaches made up	{ do	246 7 2	**********
Signal	Up distant wooden signal, 20 feet, to light, Down dis-		95 4 5	
9	tant iron signal, 16 feet, to light.		20 th 3	***********
Goods shed	20' x 12', built of galvanized iron on timber frame	do	130 15 3	**********
Tank	2 400-gallon tanks and stands	do		***********
Lamp-room	12' x 8' galvanized iron on timber frame, &c	do		10 11 10
Culverts:— Enlarging culverts at 196.24 m	New timber cultrante 10 feet 90 feet 1	,	000	
Kerr's Creek :	New timber culverts 10 feet, 20 feet long, in lieu of pipes		230 18 1	**********
Loop siding and block	New crossing, siding, and block siding, 4 chains 58 feet	do	372 16 6	494 15 8
Office porter in charge	long. Weatherboard office 12 x 12, galvanized iron roof, verandah, counter, drawers, and fittings.	do		101 6 7
Signals	Material for 3 signals		1	47 0 0
Staff and ticket office	Weatherboard office 8' x 10'	Day labour		47 9 6 11 16 7
Loading stage	Timber stage 40 feet long	do		53 15 9
Warne:— Goods shed and approach road	Galvanized iron shed 100' x 40', 4 feet staging on two sides, approach road formed, pitched, and	do	740 9 6	312 16 4
W.C. and urinals	metalled. Weatherboard W.C. 4' x 5', brick cess-pit, urinals, galvanized iron walls on wooden frames.	do	44 11 0	**;*******
Tank	2 400-gallon tanks and stands	do	11 16 1	
Watch-box at Cross Roads Lamp and parcels room	Weatherboard box 5' x 5' Weatherboards, on brick foundations, counters, fittings, &c.	do do	26 17 3 66 15 8	4 3 1
Loading stage	Stage 50' x 12' x 5', approach roads formed and metalled.	do	•	36 9 4
Hay gauge	Built in connection with loading stage	do	***********	18 3 0
Engine pits	Pits bricked 50 feet	do	170 3 7	10 10 10
Water supply	Tank stand 26' x 26', erected	۵.	170 0 7	18 19 10 27 7 0
Sand house	Galvanized house 8' x 6, for storing sand	do		48 3 7
Fencing dam	42 chains 3-rail fence, sheep proof	do	*********	62 19 9
Trial Borings, 221·20 m., 221·40 m.:— Sinking well	Trial bores put down, 15, 16, 68, and 70 feet respectively, well sunk, dam and large tank constructed, with	do	1,294 5 7	30 14 0
Stony Creek :	2,000 feet of supply pipes.		1	
Water supply	Loco. tank stand 18' x 18'	do	69 9 10	
Ironbarks:— Signal	Up distant signal, 18', to light; down distant signal,	do	70 19 11	*********
_	18', to light.			
Tank	2 400-gallon tanks and stands	do	15 11 2	
Wicket-gate	Wicket-gate, with wings	do	14 11 8	•••
Box for gatekeeperLamp-room	Weatherboard box 6' x 5', roofed with galvanized iron Galvanized iron 8' x 14', with counter, shelving, &c	do	24 15 2	19 9 0
Carriage dock	Timber dock 40 feet long, siding extended 63 feet	do ,		12 3 9 31 8 1
Springs:—	l I		1	-2 3 1
Additions to station	Office enlarged, waiting-room, 16' x 12', and parcels room, 12' x 12', verandah, 3 400-gallon tanks.	do	245 18 1	
Porter's house	Material for 4-roomed house and kitchen provided	***********		50 9 6
Apsley:—	•		***********	23 0 0
Platform Wellington:—	Timber platform 100 feet x 12 feet	Day labour		137 1 1I
Sand furnace	Material only provided		20 12 8	
Fitting pipes to tank	Pipes fitted for loco. purposes	Day labour	110 7 5	***********
Signal	Signal 18 feet, to light	do	70 13 10	***********
Cart, weighbridge, and office	Fairbank's weighbridge, on brick foundations, office, weatherboard, 7' x 5'.	do	92 2 7	4 7 11
i i		a	23 13 11	
Watch-box, gatekeeper	Weatherboard box 6' x 5'	י חם		
Watch-box, gatekeeper Do Gobolian-terrace	Weatherboard box 6' x 5' do do do	do	32 7 0	**********
Do Gobolian-terrace	do do do			125 8 5
Do Gobolian-terrace Additions, carriage examiner's house.	Weatherboard box 6' x 5' do do do	do	32 7 0	

Description of Work.	Accommodation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
		1	1001.	1002.
Wellington—continued :—			£ s. d.	£ s. d
Signal lamp and disc		Day labour.		
Enclosing platform	Material for picket fence	do		4 18 (
Water supply		do		578 0 10
Fence	crane erected. 4 chains of 2-rail fence	3.	•	000
Ashpit	Material only	do do :.		$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
Mary Vale:-		do ;.	•••••	21 12 (
Siding	New dead-end siding, 743' long	do	610 10 6	
Lengthening loop siding	Loop siding lengthened 168 feet	l do		110 11 11
Goods shed	Galvanized iron shed, 24' x 12', approach formed, pitched, and ballasted.	do	·	211 17
Lamp-room	Weatherboard room 10' x 12', on brick foundations	do		69 12
W.O. and urinal		<u>ر</u> ة		54 8 (
Loading stage	Timber stage, 100 feet long	do	1	74 5 2
Avrrumbidgerie:—	Material only	do		0 0 11
Murrumbidgerie :— Box office	Weatherboard office 10' x 12', iron roof, with necessary	do	89 15 11	***********
	fittings.		55 15 11	***************************************
Tank and stand	3 400 gallon tanks and stands	do	14 10 2	• • • • • • • • • • •
Water supply	15 feet gate on approach to station	do	15 9 7	**********
waser suppry	Boring at 260 miles 30 chains carried down to 101 feet and bricked, 10' 6"; boring at 263 miles 30 chains carried down to 251 feet, &c.	do	148 4 6	501 10 10
Lamps	Lamps and posts for station	do]	17 8
Pubbo :—				~ , \
Additional office accommodation	Two weatherboard offices 10' x 10', galvanized iron roof, counter, shelves, drawers, and all necessary	do	200 5 0	i
C 3 6	fittings.			
Sand furnace	Sand house, 8' x 12', built of galvanized iron	do	48 2 7	
Box office, cattle yards, alterations to signals.	Built of weatherboards, 8' x 10', with shelves and drawers; two distant wooden signals, each 20 feet, to light.	do	282 1 2	47 8 8
Cart weighbridge and office	Fairbank weighbridge on brick foundations; weather- board office, 6' x 8'.	do '	171 11 9	8 15 (
Extending siding	Siding extended 1,401 feet, loops, dead-end sidings, and through road extended, contractors siding laid in 685 feet.	do	630 6 11	202 11
Lengthening platform and goods shed.		do	199 19 6	31 6 8
Crane	New 10-ton crane		167 12 3	133 18
Draining station-yard	90 feet 18" drain pipes, two brick catch pits with iron gratings.	Day labour.	33 16 5	100 10
Draining cottages	100 feet 6-inch drain nines laid	do	20 9 11	
Kitchen for guards, &c	Two brick kitchens, each 14' x 16', galvanized iron roof,	do	234 19 11	123 4
, 111	1 &c.			
Water supply for employés Fencing	70° 6-4 ° 6.4 ' 7 4 6		73 14 7	187 9
Kitchen for stationmaster's house	195 feet 5-feet picket fence New American cooking stove fitted in kitchen	Day labour		9 14
Loco. office	Fittings for office	do		7 12 9 2 10
Goods office	Book-rack and shelves	do		603
Lengthening coal stage	Lengthened 60 feet x 20 feet, stone foundation, iron- bark superstructure.	do		199 18
Cottage, locomotive foreman	Stone cottage of 4 rooms, each 15' x 15' x 12', kitchen	do		522 15
	15' x 15', pantry, bathroom, verandah, 20 rods of 5- feet paling, and 66 feet picket fencing, dry carth closet, underground tank 10' x 12', stone wash-			
	house, water laid on.]	
Approach to stock-yards siding	Approach roads metalled	do	·	4 16 (
W.C	Weatherboard W.C., brick cesspit	do		3 5
* ** **		··· £	52,434 15 11	56,740 14 8
,	!		'	

MUDGEE LINE.

RETURN of Expenditure for alterations and additions to Railway Stations, Sidings, and Bridges, during 1881 and 1882.

(All the material used in works carried out by day labour was supplied under contract.)

Description of Work.	Accommodation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
Wallerawang to Mudgee. Piper's Flat:—	_		£ s. d.	£ s. d
Siding	wharf 198 feet long.	Day labour		208 5
	Temporary urinals for employés	do		6 17 570 7
Trangie:— Office	Material for booking-office provided	do		4 2
	·	£		789 12

RICHMOND LINE.

RETURN of Expenditure for alterations and additions to Railway Stations, Sidings, and Bridges, during 1881 and 1882.

(All the material used in works carried out by day labour was supplied under contract.)

Description of Work.	Accommodation given.	How carried out.	Amount expended in 1881.	Amount expended in 1882.
Schofield :—			£ s. d.	6 . 1
Land taken for office	***************************************		30 1 0	£ s. d.
Approach roads	Approach formed and metalled, about 7½ acres cleared	Day labour		34 14 10
	and stumped.	•	***************************************	94 14 10
Loading bank	Loading bank 420' long	do		12 4 0
Riverstone,—	i · · ·			12 1 0
Additions, station-master's house.	Additional room used as kitchen 12' 2" x 10' x 5'	do	250 4 9	14 8 5
Extending meat siding	Siding 3 chains long, to hold 11 trucks		113 1 11	16 13 4
Turnstile Loading stage for cattle	New turnstile fixed	Day labour		0 4 3
Mulgrave:—	45 feet long and 2 10-feet gates	do		61 0 5
Water supply	Now house over numerica and	2		
Additions, station-master's house	New house over pumping engine	do	88 17 8	109 19 9
Clarendon:—	2 additional rooms 15 x 10 6	do	302 4 1	41 4 0
Semaphore	37 feet wooden signal	a a		00 * 0
Platform	New platform 300' x 10'	do	•••••	20 1 2
Richmond:—		do		1 15 .8
Station-master's house	House containing 5 rooms, kitchen, and laundry, with underground tank.	do	253 11 8	**********
Land for workshops			159 6 9	
Station approach and temporary	New station built of brick, with slated roof, containing	Contract		4,633 9 9
offices.	general waiting-room $15'$ $4''$ x $16'$, booking-office $13'$ x $13'$, parcels-office $13'$ x $14'$, telegraph office $13'$ x $13'$, ladies' waiting-room $13'$ x $14'$, porter's room $10'$ x $12'$ $4''$, with necessary fittings, ante room $12'$ x $6'$ $6''$, urinals and W.C. $15'$ x $12'$, platform asphalted $335'$ x $13'$ $6''$, tank, force-nump, &c.			*,000 8 8
	Approach road formed to station, wooden structure 30' x 12', with verandah to front, containing booking-office and ladies' waiting-room.	Day labour	••••••••••••••••••••••••••••••••••••••	************
Siding	Siding 26 chs. 62 lks. long, to hold 97 trucks	do		1,709 5 11
Fencing land purchased from Mr. Orchard.	43 panels 6-feet paling fence	do		80 17 0
Water supply	Tank stand 52' x 13' 4"			1 17 11
-· •	Well 60 feet deep, 10 feet diameter	Λħ		•
77 11 0	330 feet of kerbing	do	***********	83 14 3
Kerbing, &c., station New goods shed	330 feet of kerbing	do	***********	796 5 10
	ancha.	۵	1105 5 7	
	1	ಕ್ರ	1,197 7 10	7,617 16 6

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAYS.

(RAILWAY STATIONS AND PLATFORMS, GREAT SOUTHERN LINE.)

Ordered by the Legislative Assembly to be printed, 26 August, 1884.

[Laid upon the Table of the House in accordance with promise made by the Honorable Mr. Secretary Dibbs, in answer to Question No. 6 on Votes and Proceedings No. 127 of the 8th July, 1884.]

Questions.

- 1. What is the number of Railway Stations on the Great Southern Line, and the name of each?
- Also the number and names of the Platforms on the same Line in charge of Porters?
- 3. What Stations on the same Line produce a less yearly revenue than the Murrumburrah Platform?

Answers.

- 1. (39.) Sydney, Darling Harbour, Macdonaldtown, Newtown, Petersham, Summer Hill, Ashfield Croydon, Burwood, Homebush, Rookwood, Granville, Fairfield, Liverpool, Campbelltown, Menangle, Picton, Mittagong, Bowral, Moss Vale, Bundanoon, Marulan, Goulburn, Breadalbane Gunning, Yass, Bowning, Binalong, Harden, Murrumburrah, Wallendbeen, Cootamundra' Bethungra, South Wagga, Junee Junction, The Rock, Culcairn, Gerogery, Albury.

 2. (25.) Eveleigh, Stanmore, Redmyre, Auburn, Clyde, Merrylands, Guildford, Cabramatta, Minto, Douglas Park, Redbank, Bargo, Hilltop, Colo Vale, Wingello, Towrang, Jerrawa, Rocky Ponds, Nubba, Illabo, Harefield, Bomen, Sandy Creek, Yerong Creek, Yambla.

 3. Macdonaldtown, Summer Hill, Croydon, Rookwood, Fairfield, Campbelltown, Menangle, Picton, Bowral, Moss Vale, Bundanoon, Marulan, Breadalbane, Gunning, Bowning, Binalong, Wallendbeen, Bethungra, Junee Junction, The Rock, Culcairn, Gerogery.

 It need hardly be pointed out that the importance of a Station does not depend upon its earnings.

- It need hardly be pointed out that the importance of a Station does not depend upon its earnings. The revenue for Murrumburrah in 1883 was £9,734 7s. 11d., of which £4,894 18s. 6d was for goods traffic, and the number of passenger tickets was 7,776, while at several Stations where the revenue was lower the actual work and responsibility were very much greater.

 At Macdonaldtown, for instance, where the revenue was only £1,873 2s. 4d., the number of
- passengers booked was 122,320.
 - At Summer Hill the revenue was £4,310 7s. 11d., and 156,645 passengers were booked.
- At Croydon the revenue was £4,040 3s. 7d., and the number of passengers booked, 106,352. At Rookwood the revenue was £2,786 8s. 9d., and the number of passengers booked was 60,551; and of that revenue £828 18s. 3d. was for goods traffic, which represented 9,239 tons against 4,459 tons at Murrumburrah
 - At Fairfield the number of passengers and the tonnage were greatly in excess of Murrumburrah. At Campbelltown the number of passengers and the tonnage were greatly in excess of Murrum-
- At Picton fewer passengers were booked than at Murrumburrah, but the merchandise tonnage was twice as great; besides Picton is an important marshalling station.
- At Bowral about 300 more passengers were booked and the tonnage was about equal to Mur-
- rumburrah At Moss Vale more passengers were booked, and the tonnage was more than twice that of Murrum-
- At Marulan fewer passengers were booked, but the tonnage was about five times greater than at Murrumburrah.
- At Bowning fewer passengers were booked, but the tonnage was greater. The same applies to
- Binalong.

 At Junee Junction the number of passengers and the tonnage were in excess of Murrumburrah.

 The officer in charge of Murrumburrah is paid at the rate of £150 a year and quarters, while porters in charge are only paid 48/ per week (=£124 16s. per annum) and quarters.

 Then again every Station given in answer to Question No. 3 is a Staff Station while Murrum-
- burrah is not.

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1883. (THIRD SESSION.)

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAYS.

(TRIALS OF COAL FROM COAL-MINES ON GREAT SOUTHERN RAILWAY.)

Ordered by the Legislative Assembly to be printed, 29 November, 1883.

RETURN to an Order of the Honorable the Legislative Assembly of New South Wales, dated 8 December, 1881,—

"That there be laid upon the Table of this House copies of all the Reports "made during the last five years as to trials of Coal from Coal-mines "situated on the Great Southern Railway."

(Mr. Kidd.)

	SCHEDULE.			
ΝО.	M. III. A.G. M. T.T.O. AND D. T. T. T. T. T. T. T. T. T. T. T. T. T.	PAGE		
	Messrs. Hunter & Co., Mr. J. J. O. Atkinson, and Messrs. Matthews and Arnfield, offering to supply Southern Railway Line with coal, together with minutes, letters, and reports thereon. July, 1877	2		
	David Smith, asking for trial to be made of 10 tons of coal from Nattai River, with minutes, reports, and letters thereon. 15 September, 1877	5		
3.	J. J. O. Atkinson and W. Davies, M.P., with reference to test of Berrima coal, together with minutes and letters	_		
4.	thereon. 18 November, 1878	7		
5.	2 January, 1879	9		
-	reports, &c. 4 Warch 1879	10		
	H. W. Jackson, asking that test may be made of coal from Nattai Coal Company's Mine, with minutes and letters thereon. 17 December, 1878	14		
7.	Secretary for Public Works, directing trial be made of Mr. Wallace's coal, and reports thereon. 11 November, 1879	16		
8.	J. de V. Lamb, asking that 4 tons of coal from Australian Kerosene Oil and Mineral Company may be tested,			
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	with letters, minutes, and reports thereon. 17 April, 1880	17 19		
11.	Manager, Australian Kerosene Oil and Mineral Company, suggesting that their coal be used in pumping-engines,			
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13.	with minutes and reports thereon. 29 August, 1881 John S. Martin, asking that trial may be made of a sample of coal, with minutes, reports, &c., thereon. 30	21		
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	S. R. Baker, offering to supply the Department with coal, together with reports of tests made, and minutes thereon. 14 October, 1881	24		
15.	Letters and reports respecting trial of Berrima Coal Company's coal proposed to be supplied to Department. 4 November, 1881	27		
16.	J. J. O. Atkinson, fowarding letter from Chairman, Berrima Coal Company, complaining of manner in which last			
17.	trial of coal was conducted, with minutes and reports thereon. 25 November, 1881	27		
18.	6 December, 1881	29 30		
19.	Reports, letters, and minutes respecting quality of coal supplied by Berrima Coal Company	31		
21.	Reports, minutes, &c., respecting supply of coal for Camden Tramway Complaints made against coal supplied by Berrima Coal Company	37		
22.	Minutes, &c., respecting the small quantity of coal ordered from the Berrima Coal Company	37 37		
	&c. thereon.	38		

RAILWAYS.

No. 1.

Messrs. Hunter & Co., to The Secretary for Public Works.

July, 1877.

We have the honor to submit the following proposal to yourself and colleagues. Having made arrangements for working some coal property near the Cataract, a few miles from Berrima, and taking into consideration that, in a minute written by Mr. Goodchap, it is stated that coal for the Great Southern Railway costs the Government twenty-six (26s.) shillings per ton, but if delivered at Berrima at ten shillings (10s.) per ton it would cause a saving to the State of some £6,000 per annum; we beg to make the following offer:—We will deliver coal for the supply of the Great Southern Railway

at Berrima at ten shillings (10s.) per ton, for a term of years to be mutually agreed upon.

This coal shall be equal, if not superior, to that tried for the Berrima Railway League, on the railway between Mittagong and Goulburn, on the 16th December, 1874, for result of which trial we have the honor to refer you to papers and correspondence relating to proposed branch railway to Berrima.

We have, &c. THOMAS HUNTER, E. G. LARKIN GEORGE HENSHAW

Trading as HUNTER & CO., Fitzroy Ironworks, Mittagong.

Mr. J. J. O. Atkinson to The Secretary for Public Works.

Oldbury, Moss Vale, 31 July, 1877. I have the honor of submitting the following proposal to yourself and colleagues.

Having some coal property about 4 miles west of Berrima Bridge, called the "Berrima Coal-mine,"

I beg to make the following offer:

I will deliver coal for the supply of the Great Southern Railway (similar to that tested between Nattai and Goulburn, on 16th December, 1874) at Berrima Bridge (terminus of proposed branch line), at eleven shillings per ton, for a term of years to be mutually agreed upon. I respectfully wish to point out:—

That at the price I offer the coal the Government would save 15s. per ton on their present outlay, it being computed that coal at present costs the State twenty-six shillings (26s.) per ton* (see minute No. 2, page 12 of papers and correspondence relating to proposed Branch Railway to Berrima).

That by getting coal at the reduced price named above, your Government could successfully undercarry the Victorian in the Riverina District, and secure the trade of that important part of the country

for New South Wales.

I may also state that in a short time, when the pit is in thorough working order, and a tramway constructed† to meet the Berrima Railway, the proprietors of the Berrima Coal-mine would be in a position to deliver coal at a considerably lower rate than that named in this offer.

As the offer I have now the honor to make is of considerable importance both to myself and the district generally (and in fact the whole Colony, by the saving it would occasion to the public expenditure), I trust you will take it into your immediate consideration, and favour me with the result of your deliberation at an early date.

I might mention that the late Premier, when at Berrima last year, said that if the Government received an offer of coal showing a saving of 10s per ton on what it at present costs them, they would construct a railway not only to Berrima, but to the pit's mouth.

I have, &c., J. J. O. ATKINSON.

Mr. Mason, for report.—J.R., B.C., 2/8/77. I can offer no opinion upon this subject until I have tested the coal, which I will do if the Commissioner considers it necessary.—W.M., 6/8/77. Com-

Minute of Secretary for Public Works.

I would suggest that the test to be adopted with this coal should be of such a character as to prove beyond any possibility of doubt its value for steaming purposes. It seems to me that the most effectual way to bring about such a result is for a quantity of coal (say not less than 20 tons) to be procured from the seam of coal on Mr. Atkinson's property, that such coal should be obtained or hewn from the seam under the actual supervision of a trustworthy officer of the Railway Department, and that such coal should be afterwards conveyed under such officer's supervision to the Southern Railway, and that afterwards the most careful tests should be made by the Locomotive Department of its value for steaming purposes. I could never give my assent to the construction of a Branch Railway to such an unimportant place as Berrima, unless the fact could be incontrovertibly demonstrated that a great saving would be effected in the use of coal for locomotive purposes on the Southern Railway by obtaining that mineral from near Berrima.—J.H., 10/8/77.

The

^{*}At the time stated it was costing that, but prices have altered and rates have been reduced since then.—Chas. A.G. + A company is now in course of formation for laying down tramway from Berrima to coal-mine.

The Commissioner for Railways to Mr. J. J. O. Atkinson.

Department of Public Works, Railway Branch, Sydney, 15 August, 1877.

In reference to your letter of the 31st ultimo, offering to enter into a contract to supply for the use of the locomotives on the Southern Railway coal from the Berrima mine at 11s. per ton, I have the honor to inform you that the Government have received similar offers from others owning coal-mines in the same locality; and the Secretary for Public Works has written a minute on the subject, of which the

following is a copy:

"I would suggest that the test to be adopted with this coal should be of such a character as to prove beyond any possibility of doubt its value for steaming purposes. It seems to me that the most effectual way to bring about such a result is for a quantity of coal (say not less than 20 tons) to be procured from the seam of coal on Mr. Atkinson's property, that such coal should be obtained or hewn from the seam under the actual supervision of a trustworthy officer of the Railway Department, and that such coal should be afterwards conveyed under such officer's supervision to the Southern Railway, and that afterwards the most careful tests should be made by the Locomotive Department of its value for steaming I could never give my consent to the construction of branch railway to Berrima unless the fact could be uncontrovertibly demonstrated that a great saving would be effected in the use of coal for locomotive purposes on the Southern Railway by obtaining that mineral from near Berrima."

I may add that, upon your intimating your willingness to allow a sample of your coal being taken in the way described for the purpose of being tested, the necessary arrangements will be made accordingly.

I have, &c. JOHN RAE,

Commissioner for Railways.

Messrs. R. J. Matthews and J. Arnfield to The Secretary for Public Works.

Berrima, 31 July, 1877. We, the undersigned, are prepared to deliver at Berrima the best coal, in any quantity, for railway and other purposes, at 11s. per ton.

> R. J. MATTHEWS. JOHN ARNFIELD.

Mr. Mason, for report.—J.R., 9/8/77. I have already stated in a previous paper that I can offer no opinion about this coal for locomotive purposes until I have tested it.—W M., 14/8/77. Commr. Mr. Arnfield might be asked to forward the necessary quantity for testing.—J.R., 20/8/77.

The Commissioner for Railways to Mr. J. Arnfield.

Department of Public Works, Railway Branch, Sydney, 31 August, 1877. In reference to your letter, dated the 31st ultimo, addressed by yourself and Mr. Matthews to the Minister for Works, offering to deliver best coal at Berrima in any quantity at 11s. per ton, I have the honor to inform you that the Engineer for Existing Lines states that he can offer no opinion about this coal for locomotive purposes until he has tested it. If therefore you wish the coal tried, I have to request that you will forward a sufficient quantity for that purpose, say 10 tons.

I have. &c. JOHN RAE,

Commissioner for Railways.

Mr. J. J. O. Atkinson to The Commissioner for Railways.

Oldbury, Moss Vale, 18 October, 1877.

I have the honor to acknowledge receipt of your letter of 15th ultimo, in answer to mine of July 31st, in reference to my offer to deliver coal at Berrima for railway purposes.

I have delayed replying till now, having placed my coal land under offer to a Company now in course

of formation to work the same.

The object of this Company is to lay down a tramway from coal land to Berrima, and to work the

coal for supply of Government or any other available market.

The following are the names of the gentlemen who have been appointed Provisional Directors to form this Company, viz.:—Messrs. P. M. Osborne, J.P.; M. Butler, J.P.; W. J. Cordeaux, J.P.; J. J. O. Atkinson, J.P.; G. C. Makin, R. N. Matthews, and T. P. Galbraith.

From the names of the Provisional Directors you will perceive that the initiatory movements are in bona fide hands, and when carried into effect will be the means of saving the Government some thousands of pounds annually in the outlay for coal, if the necessary provision is made to connect the Company's proposed depôt, Berrima, with the Great Southern Railway.

With regard to the trial of coal, I shall, and do most readily assent to your obtaining it in the

manner you propose, and will render every assistance in my power to facilitate its delivery

I presume, however, you are not aware that although the seam in my property alluded to is exposed to view under a cliff for some 2 miles, it has never been worked thereon, but about a quarter of a mile from my boundary the same seam of coal is now being worked and used at the Fitzroy Iron Works, Nattai, and 5 tons of coal therefrom, at an expense of some £30, were also, in the year 1874, at the special request of your Department, duly tested on the Great Southern and Great Western Railway, and pronounced by the Railway officials (see Berrima Railway papers, letter from Mr. Rae, dated 10/2/75) suitable for locomotive purposes

There would thus be no difficulty in obtaining from that same mine (the coal of which is, as before explained, identical with the seam I have offered to supply the Government from) the 20 tons of coal

required, at an outlay of (say) £20 delivered at the railway.

On the other hand, should the Department deem it absolutely necessary to obtain the 20 tons of test coal from my own property, to open, drive, mine, and deliver same on Great Southern Railway—say at Moss Vale—would require an outlay of about £50.

On receipt of information that the Railway Department is prepared to meet this necessary expenditure (and which will be more than half recouped by the 20 tons coal) I will immediately set miners to work to get out the coal, in the presence and under the superintendence of an officer of the Railway Department,

Considering the enormous saving likely to accrue to the State by being enabled to obtain coal for Southern Railway purposes in this district, I presume the trifling expenditure above alluded to will be assented to without hesitation.

I take this opportunity of drawing your attention to an answer given to our Member, Captain Onslow, on 3rd instant, to the effect that the consumption of coal on Great Southern Railway, when extension to Wagga is completed, will be 14,000 tons a year; and as the difference between the price at which I have offered you the coal and what you now pay is 9s. 6d. per ton, the saving to the State would be about £7,000 per annum.

An early answer to this letter will oblige.

I have, &c., J. J. O. ATKINSON.

Mr. J. J. O. Atkinson to The Commissioner for Railways.

Oldbury, Moss Vale, 24 November, 1877. I have the honor to call your attention to my letter of 18th ultimo, stating that you could obtain the desired quantity of coal for trial in the manner you suggest, namely, to be mined under the

immediate supervision of a person appointed by you.

As the same seam that I propose to obtain the coal from is now being worked by the lessees of the Fitzroy Works on an adjoining block of land, there would be no difficulty now in getting the coal you require for the test, though allow me to remind you that five tons (5) of same coal have already been tried on the railway, and approved of by the Railway Department, and I take this opportunity of repeating my offer to deliver similar coal at Berrima for railway purposes at eleven (11s.) shillings per ton for either one or a term of years.

An early reply will oblige,-

Yours respectfully, &c., J. J. O. ATKINSON.

Mr. Mason, 30/11/77.—J.R. This of proper way?—W.M., 3/12/77. Commissioner. This offer cannot now be entertained; why not tender in the

Show me copy of specifications for the supply of coal for S. and W. Does it not contain provision reserving to the Commissioner the right to obtain coal at any place along the line, should same be found suitable for locomotive purposes?—CH. A. G., 12/12/77.

We are not debarred, I see by clause 9 of the specification, from taking coal other than contract coal, and should Mr. Atkinson's coal be found after trial to be suitable for locomotive purposes, I presume the Commissioner will take it if it be offered at a cheaper rate than equal coal can be obtained elsewhere, but the subject of Mr. Atkinson's letter will not be dealt with by informing him of the terms of Mr. Mason's minute of 3/12/77—which would be "that his offer to supply coal at Berrima at 11s. a ton has been received too late, and that he should have tendered when offers were invited for locomotive coal for 1878." In the first place, tenders to supply coal other than Newcastle and Western coal were not invited, and therefore Mr. Atkinson could not very well tender; on reading however his letter of October 18th and November 24th, it will be seen that he is dealing with the proposal of Mr. Secretary Hoskins, that if he wishes his coal tested on the Government locomotives, with a view to base thereon an application to the Government or Parliament for the construction of a branch line to Berrima, the coal must be taken from the seam (from which he proposes to supply the Government at 11s. a ton) under the inspection of an officer of this Department, &c.

Mr. Atkinson says that it will cost £50 to do this, and he wishes to know whether the Government

will bear the expense. It is to this inquiry that he asks for an answer.—Chas. A. G., 5/12/77.

Minute of Secretary for Public Works.

This must be done at owner's expense.—J.S., 7/2/78.

The Commissioner for Railways to J. J. O. Atkinson, Esq.

Department of Public Works, Railway Branch, Sydney, 21 February, 1878. Sir. In reply to your letters of the 18th October and 24th November last, in reference to your offer to deliver a sufficient quantity of coal at Berrima, from your own seam, for the purpose of being tested in the locomotive engines, and asking whether the Government are prepared to pay the sum of £50, the estimated cost of opening drive, mining, and delivery of coal on the Great Southern Railway, I have the honor to inform you that any expense incurred in obtaining this coal must be borne by the owner or owners thereof.

I have, &c.,

CHAS. A. GOODCHAP,

Commissioner for Railways. .

Mr. J. J. O. Atkinson to The Minister for Works.

Oldbury, Moss Vale, 26 March, 1878.

I have just heard from the Secretary to the proposed Branch Railway to Berrima League that Captain Onslow informs him that, in course of conversation, you mentioned that you were unaware of any offer to deliver coal at 11s. per ton at Berrima for locomotive purposes.

If you will kindly cause inquiry to be made in the Railway Branch of your Office, you will find that I made an offer to deliver coal for the above purpose at 11s. per ton, for a term of years to be mutually agreed upon, such coal to be delivered at proposed terminus of Branch Railway, at or near Berrima Bridge;

the date of my letter containing such offer being 31st July, 1877. I now beg respectfully to repeat that offer, and also to remind you that coal from the same seam was tested on the railway between Mittagong and Goulburn on 16/12/74, and the result satisfactory. (See Branch Railway to Berrima—papers ordered to be printed by the Legislative Assembly, 29/3/76, page 3, Nos. 3, 4, and 5.)

I have, &c., J. J. O. ATKINSON.

Minute of Secretary for Public Works.

Seen, and refer him to letter sent in reply to his offer in July last.—J.S., 5/4/78.

The Commissioner for Railways to Mr. J. J. O. Atkinson.

Department of Public Works, Railway Branch, Sydney, 16 April, 1878. I have honor to acknowledge the receipt of your letter of the 26th ultimo, with reference to your offer to enter into a contract to supply for the use of the locomotives on the Southern Railway coal from the Berrima Mines at 11s. per ton, and in reply have to invite your attention to my letter of the 15th August, 1877, on this subject. I have, &c.

CHAS. A. GOODCHAP, Commissioner for Railways

No. 2.

Mr. D. Smith to E. Combes, Esq., M.P.

Eisenfels, Nattai, 15 September, 1877. I have the honor to inform you that I have "mined" 10 tons of coal, which I will deliver at Mittagong next week, and I shall esteem it a favour if you will order a trial of this coal on the locomotives working on the Great Southern Railway.

After satisfactory trials are made of this coal, the "Nattai Coal and Coke Company (Limited)," will be willing to contract for all the coals required on the Great Southern Railway for one or more years, at

a price considerably lower than that paid at present.

The Company are getting a very superior quality of coal, suitable for blacksmiths' fires, a sample of which will also be sent to station. Should the sample be approved, this district will be able to supply the Government workshops at Redfern and Liverpool (when the establishment is removed there) cheaper Will you kindly order two trucks to receive the 10 tons on or before Thursday than any other colliery. I have, &c., DAVID SMITH.

Engineer for Existing Lines.—E.C., B.C., 17/9/77. I see no objection to this coal being tried on the locomotives, provided it be delivered to the Commissioner free of all expense.—W.M., 19/9/77. Inform.—E.C., 24/9/77.

The Commissioner for Railways to Mr. D. Smith.

Sir, Department of Public Works, Railway Branch, Sydney, 29 September, 1877.

In reply to your letter of the 15th instant, stating that you have 10 tons of coal ready for delivery at the Mittagong Station, and requesting that an order may be given to have it tested for locomoderate the statement of the statemen tive purposes, I have the honor to inform you that I have no objection to this coal being tested in the locomotives, provided that it be delivered free of all expense.

I have, &c. JOHN RAE,

Commissioner for Railways.

Mr. D. Smith to The Commissioner for Railways.

Eisenfels, Nattai, 2 October, 1877. In reply to your letter of 29th September, I beg to say 10 tons of coals shall be delivered to

the Mittagong Station, free of all expense to the Government.

I shall esteem it a great favour if you will order an immediate trial of this coal, as the matter is of great importance to the Fitzroy Company, and also will effect a very considerable saving in all future coal I have, &c., DAVID SMITH. expenses on the Great Southern Railway.

/77. Mr. Scott to note and return.—R.J.S., 10/10/77. . Commr.—W.M., p. R.J.S., 15/10/77. Mr. Mason.—CH. A. G., B.C., 10/10/77. Noted.—W. Scott, 15/10/77. Mr. Mason.

Mr. David Smith to The Honorable Edward Combes.

Eisenfels, Nattai, 24 September, 1877. I have the honor to inform you that I have, in compliance with my letter of the 15th instant, the delivery of 10 tons of coals to the Mittagong Station. I regret to learn from the Station-Sir, commenced the delivery of 10 tons of coals to the Mittagong Station. master, Mr. Watsford, that he has not yet received from you an order to provide trucks to receive this coal. Will you oblige by giving Mr. Watsford instructions respecting the two trucks.

I have, &c. DAVID SMITH.

Approved, I think, on another paper, 26/9/77.—J.R. Traffic Manager. The coal is to be delivered without expense to Railway Department.—B.C., 26/9/77.—Chas. A.G. The Station-master, Mittagong, to note.—D. Vernon, 28/9/77. Noted, Jas. Watsford, 29/9/77. Traffic Manager,—If these coals are being loaded at Mittagong where are they being sent to?—D. Vernon, 2/10/77. Coals not yet loaded.—J. Watsford, 3/10/77. Traffic Manager. I have not seen any previous paper on this matter; are the coals to be carried free, or are there any special directions to be given concerning them ?-D. Vernon, per David Kirkcaldie, 4/10/77. Secretary. The Engineer for Existing Lines will arrange to try this coal; the coal is to be taken free to any portion of the line where he may require to use it; please arrange with Loco.—B.C., 6/10/77, Chas. A.G. When are these coals to be loaded, and to what station does Mr. Scott wish them sent?—D. Vernon, per David Kirkcaldie, 8/10/77. Mr. Scott, Loco. Supt. I would propose that this coal be loaded up and sent to Picton to be tested.—W. Scorr, 11/10/77. Approved, J.R., 18/10/77. Mr. Mason. Commissioner to see.—W.M., 15/10/77.

Memorandum

Memorandum to Mr. Webster.

Government Railways, Engineer's Branch, Sydney, 15 October, 1877.

10 tons of coal will be sent to Mittagong Station by Mr. David Smith for trial; I wish you to carefully test and report.

Instructions will be sent to Station-master to have this coal loaded up and sent to Picton.

W. SCOTT.

Memo. from Mr. W. Webster to The Locometive Overseer.

19 October, 1877.

I beg to report I have, according to your instructions, tested the sample of coal sent from Mittagong, and find it to be a very inferior coal for making steam, having a deal of small coal in it, and leaving a very large quantity of dirt, not only of ash, but of a slaty clinker, and there is not much smoke. I made three trials between Picton and Mittagong with the same engine, No. 44,—first on Wednesday night, 17th, assisting the through goods train which was light that night, and twice with the 10 30 a.m. train.

When with the through goods there was difficulty in getting steam, but having two engines and the train light it was not so noticeable. On Thursday, 18th, with 10 30 a.m. train we had a full load, eleven loaded trucks and brake way. We had to stop three times between Pictor and Mittagong to clean the fire

loaded trucks and brake-van. We had to stop three times between Picton and Mittagong to clean the fire, and lost one hour on the trip on Friday, 19th, with 10:30 a.m.; there were only eight loaded to take; we lost no time with them, but on arrival at Mittagong the fire-box was nearly full of dirt and clinker. The consumption of this coal has been 80 lbs. per mile, there having been 5 tons 5 cwt. consumed in the three journeys at 48 miles each, without getting up steam, and on the first and second trips, on cleaning the fire at Mittagong, a few lumps of the Bowenfels coal were taken to light the fire, as there were no lumps in the other.

The consumption of Bowenfels coal on the same run is 70 lbs. per mile.

WILLIAM WEBSTER.

Engineer for Existing Lines.—22/10/77. I consider this coal useless for locomotive purposes. W.M., 26/10/77. Commissioner. Inform.—E.C., 8/11/77.

The Commissioner for Railways to Mr. D. Smith.

Department of Public Works, Railway Branch, Sydney, 15 November, 1877. Referring to the coal forwarded by you for the purpose of being tested, I have the honor to enclose herein, copy of a report received from the Locomotive Overseer, from which you will perceive that the coal in question is not adapted for locomotive purposes.

I have, &c. JOHN RAE,

Commissioner for Railways.

W. WEBSTER.

Memorandum to Mr. Scott.

Sir, Picton Station, 19 October, 1877. There were 9 tons 14 cwt. of coal sent from Mittagong for trial, so that there are still 4 tons 9 cwt. on hand. Shall I keep this for further trial, or have it unloaded at once?

Engineer for Existing Lines.—J.C., 22/10/77. This coal is of no use for locomotive purposes, and may be returned if required.—W.M., 26/10/77. Seen.—J.R., 30/10/77.

Mr. D. Smith to The Commissioner for Railways.

Sir, Eisenfels, Nattai, 27 November, 1877. I beg to own receipt of the report upon the trial of the Nattai River coal made by Mr. With the result of this trial I am disappointed, as we have here coal suitable for every purpose Webster. to which coal can be employed.

I have the honor to hand you copy of a report of the same coal tried at the Fitzroy Iron Works on the 14th instant, which shows that by some mischance we must have sent you for trial a very inferior

sample of this coal.

We have two other seams of coal here from which I shall esteem it a favour if you will order a trial. Both these coals we have tried here and found them good, and in my opinion are better coals than the coal now being used from Lithgow on the Great Southern Line. On hearing from you, 5 tons from one or both of the seams shall be delivered at the Mittagong Station, free of any expense to the Government.

I have, &c.,
DAVID SMITH.

[Enclosure.]

1877.

Report upon a trial of Nattai River coal at the Fitzroy Iron Works, by Robert Longmore. To the Committee of the Nattai River Coal and Coke Co., Limited.

Gentlemen,

According to your request, I attended a trial of your coal made at the Fitzroy Iron Works (leased for a short term to Messrs. Hunter & Co.), and I beg to submit my report, which I have no doubt you will deem satisfactory.

In December, 1874, the Government made a trial of coal from the Cataract Mines near Berrima, which trial John Rae, Esq., Commissioner for Railways, reported to be satisfactory. It is with this coal now being used at the Fitzroy Works that I made comparative trials.

Works that I made comparative trials.

Two trials were made, the first in the "mill furnace," and the second in the "puddling furnace," both furnaces being used for the conversion of pig iron into merchant hars.

The mill furnace being in working order, the previous charge having been drawn, and the fire-bars eleansed, the time taken was from the time the doors were closed until the charge of iron was drawn and the doors closed again for Two

Two charges were heated, drawn and worked off under the forge hammer from your coal in four hours and four minutes. I must, however, mention that when the first charge was ready for drawing an accident happened to the machinery, causing a delay of fifteen minutes. The amount of coal consumed for the two charges was 11 cwt. 2 qrs. and the weight of iron rolled from the two trials 1 ton 3 cwt. During the first four hours and four minutes occupied in getting out the two heats the fire-bars were not cleaned, showing that this coal can be used with a minimum of trouble in this respect, and consequently will be a favourite fuel with the employes at the works.

The re-heating furnace was now charged with coal from the Cataract. Only one trial of this coal was made. The coal used for one trial was 7 cwt. 3 qrs. 14 lbs., and the weight of iron rolled was 11 cwt. 2 qrs. With this coal the furnace-bars require cleaning for every charge. Comparing the two trials, there is a saving of coal in using Nattai River coal of 20 per cent., and a saving of time sufficient to enable the same furnace to turn out 11 cwt. of additional iron every twenty-four hours.

four hours.

Trial at the puddling furnce. Two charges were worked with Nattai River coal, and one with Cataract, with about the same result. With this further advantage the iron from your coal required much less labour under the forge hammer and was more homogeneous, and consequently would make a better bar. This I attribute to the better puddling of the iron, and the greater heat of the "balls" when taken out of the furnace. The employes at the works took a lively interest in these trials, and have endorsed at foot all I have said as to the superiority of your coals over the coals they have hitherto used at these works.

ROBERT LONGMORE,

Mining Manager

Mining Manager.

We, the undersigned, workmen at the Fitzroy Works who assisted at the above trials, certify to the truth of the above report.

WILLIAM MILLER, Foreman Roller, WILLIAM LAWSON, Puddler, WILLIAM BOWEN, Mill-Furnaceman. WILLIAM JERVONS, Roller.

Inform-Inconvenient to be trying so many coals.-J.R., 13/12/77.

The Commissioner for Railways to Mr. D. Smith.

Department of Public Works, Railway Branch Sydney, 21 December, 1877. Sir. In reply to your letter of the 27th ultimo, applying to have a further sample of your coal tested for locomotive purposes, I have the honor to inform you that I am unable to accede to your request, as it is found inconvenient to be trying so many samples of coal.

I have, &c.

JÓHN RAE,

Commissioner for Railways.

Mr. D. Smith to Mr. Webster.

Sir, The Parsonage, Berrima, 13 February, 1878. The coal remaining over after the trial can be used, if you will kindly forward it to Mittagong This coal cost me nearly £50, and if you will return the 4 2 tons it will help to recoup some of Station. It was at Mr. Goodchap's request that we sent so much. this loss.

DAVID SMITH.

I presume if Mr. Smith wants the coal to be sent to Mittagong it will be at his expense.—W. WEBSTER, 15/2/78. Mr. Scott. Yes.—W.M., 25/2/78.

No. 3.

J. J. O. Atkinson to The Minister for Works.

Sir,

Oldbury, Moss Vale, 18 November, 1878.

I have the honor to inform you that we have had the Berrima Coal Mine opened for the purpose of obtaining a few tons of coal to hand over to the railway authorities for trial on the Great Southern Railway.

This coal will in all probability be ready for delivery at Moss Vale early next week.

As it is believed to be of superior quality, we trust you will cause such arrangements to be made as will ensure a proper test of its suitability for railway purposes.

Be good enough to inform me what number of tons you will require for this test and what arrangements you will be pleased to make for its reception and trial.

I respectfully beg to request the favour of an early reply.

I have, &c., J. J. O. ATKINSON.

The Locomotive Engineer will please make arrangements for detaching an officer to see that the coal offered is taken out of the mine—the depth taken from, and all particulars. He will then see it brought to Sutton Forest (Moss Vale) Station, and the Locomotive Engineer will give directions for its being tested for locomotive purposes. I have stated that 20 tons will suffice for the purpose.

Write to-day to Mr. Atkinson and forward to Mr. Burnett.—B.C., 27/11/78, Chas.A.G.

The Commissioner for Railways to Mr. J. J. O. Atkinson.

Department of Public Works, Railway Branch, Sydney, 27 November, 1878. Sir. In reply to your letter of the 18th instant, intimating that you are prepared to supply a few tons of coal from the Berrima Coal Mine for the purpose of being tested on the railway locomotives, and asking what number of tons will be required for the trial, I have the honor to inform you that 20 tons. will suffice for the purpose, and an officer has been detailed from the Locomotive Engineer's staff to see that the coal is taken from the mine, the depth taken from, and to attend to all matters connected with the test. I have, &c.

CHAS. A. GOODCHAP, Commissioner for Railways. W. Davies, Esq., M.P., to The Minister for Works.

Goulburn, 16 November, 1878. I have the honor to bring under your notice the fact that coal is being obtained on the land of Mr. Atkinson about 8 miles from the Moss Vale Station, Southern Line. It is believed that this coal is suitable for engine purposes, and my object in writing you is to request that a trial, or trials, of his coal may be made by the Government to ascertain its fitness as steam coal.

I need not point out the great saving to the Government, if an ample supply of coal can be had on

the Southern Line of Railway, and thus avoid the haulage from the Western coal-fields.

Perhaps you would wish that a competent officer should visit the coal seam and superintend the whole trial, in which case Mr. Atkinson, of Oldbury, near Berrima, the owner of the coal seam, will place himself and men at the direction of such officer, and will deliver coal at the Moss Vale Station at any time and in any quantities you may order.

Respectfully requesting an early reply,-

I have, &c., WILLIAM DAVIES.

Minute of Secretary for Public Works.

Inform that an officer will be sent, as requested, when we require a tender for supplying the coal we require, or that the Company can supply weekly for the year 1879, or for five years. be done at once, as contracts are about being entered into for the year 1879.—J.S., 18/11/78.

The Commissioner for Railways to W. Davies, Esq., M.P.

Department of Public Works, Railway Branch, Sydney, 18 November, 1878. Sir, In reference to your letter of the 16th instant, pointing out to the Secretary for Public Works that coal is being obtained on the land of Mr. Atkinson about 8 miles from the Moss Vale Station, and suggesting that as this coal, if serviceable for the locomotive, would effect a great saving in the working expenses of the Southern Railway, an officer of the Department should visit the coal seam, with a view to see that a fair sample is taken out for trial, I have the honor to inform you that Mr. Secretary Sutherland has approved of your suggestion, and an officer will be sent directly it is ascertained that the proprietors of the mine are prepared to tender to supply, weekly, a certain quantity of coal for locomotive purposes for the year 1879, or for four or five years. I may add that no time should be lost in this matter, as contracts for the supply of coal are about being entered into for the year 1879.

I have, &c.

CHAS. A. GOODCHAP,

Commissioner for Railways.

W. Davies, Esq., M.P., to The Commissioner for Railways.

Goulburn, 30 November, 1878. Sir, Replying now to your letter to me, dated 18th instant, and on account of Mr. Atkinson, to your letter addressed to him, and dated the 27th instant, I have to say that the 20 tons of coal required for trial on the railway locomotives will be got out without any delay. Mr. Atkinson thinks it best to get out a few tons before touching that to be supplied as a test, and which may be supposed fairly to represent the quality of the seam. It will be, however, a few days before he will have all in readiness for inspection.

Mr. Atkinson requests the favour of a free pass for himself upon the train when the coal is being tested; or if tested upon more than one train at the same time, then for some one or more appointed by him

to be present during the trial. I think this reasonable, and trust you will consent.

I deem it my duty to inform you that one at least of the engine-drivers on the Southern Railway is interested in a coal mine not far from Jordan's Crossing, and that he was heard to say, upon looking at some of Mr. Atkinson's coal then lying at Moss Vale Station, and consigned to Goulburn, "This will spoil my little spec." This, while paying a tribute to the goodness of Mr. Atkinson's coal, will suggest a caution as to the thorough supervision of the trial or trials which you may give to this coal.

I fear Mr. Atkinson will not be in a position to tender for the supply of coal for 1879, for a tramway must be laid down from Moss Vale to the mine, and this will take a few months to do; but I would respectfully suggest that the saving to the Government will be so great by drawing the supply of coal from Berrima, as compared with Bowenfels or Newcastle, that possibly the Secretary for Public Works will have a clause inserted in the form of tender or in the contract that the supply obtained from the places above named may be diminished at pleasure, and then a quantity could be drawn from Berrima.

Meanwhile I have no doubt Mr. Atkinson will push on his works so as to deliver coal as speedily as possible, and probably by the end of the present year he will be able to name the price per ton at which he will deliver coal at Moss Vale Station so soon as the tramway is finished.

I have, &c., WILLIAM DAVIES.

Inform that a fair test will be given the coal, and that there is no objection to representatives of the mine-owners travelling by the train, the engine of which is testing the coal, and that this can be arranged by the Locomotive Engineer.--Chas. A.G., 2/12/78.

The Commissioner for Railways to W. Davies, Esq., M.P.

Department of Public Works, Railway Branch, Sydney, 2 December, 1878. Sir. I have the honor to acknowledge the receipt of your letter of the 30th ultimo, and in reply thereto, beg to inform you that a fair test will be given to the coal supplied by Mr. Atkinson, and that there is no objection to the representative of the colliery owners travelling by the train, the engine of which is testing the coal. This can be arranged with the Locomotive Engineer, who has been instructed accordingly.

I have, &c.,

CHAS. A. GOODCHAP,

Commissioner for Railways.

Mr. J. J. O. Atkinson to The Commissioner for Railways.

Sir Oldbury, Moss Vale, 4 December, 1878. I beg to acknowledge receipt of yours of 27th ultimo, informing me that an officer from the Locomotive Engineer's staff has been detached to see the coal is taken from the Berrima Coal-mine for

I have the pleasure to inform you that the mine is ready for said officer's inspection at once.

I have, &c.,

J. J. O. ATKINSON.

Locomotive Engineer to arrange for Inspector to meet Mr. Atkinson at the Moss Vale Station, on Monday next. If not convenient, inform Mr. Atkinson, and arrange for early day.—B.C., 4/12/28, CHAS. A. G.

No. 4.

Mr. J. J. O. Atkinson to The Commissioner for Railways.

Oldbury, Moss Vale, 2 January, 1879. Would you be good enough to cause me to be furnished with copies of reports on the various tests taken of my coal, as I am anxious to see the results.

J. J. O. ATKINSON.

Will Locomotive Engineer enable me to comply with this request.--Cнаs. A. G., В.С., 3/1/79. Copies of reports herewith for Mr. Atkinson's information. Unless the sample tried is an exceptionally bad lot, and can be very materially improved upon, the coal would seem to be quite unfit for locomotive purposes.—R.H.B., 9/1/79. Inform Mr. Atkinson, with copies of reports.—G.B., 13/1/79.

The Commissioner for Railways to Mr. J. J. O. Atkinson.

Department of Public Works, Railway Branch, 14 January, 1879. In compliance with the request contained in your letter of the 2nd instant, I have the honor to forward herewith copies of reports received of the tests made of your coal, and to state that the Locomotive Engineer reports that unless the sample tried is an exceptionally bad lot, and can be very materially improved upon, the coal would seem to be quite unfit for locomotive purposes.

I have, &c.

CHAŚ. A. GOODCHAP, Commissioner for Railways.

Locomotive Drivers' reports respecting coal.

Mr. W. Webster to The Locomotive Overseer. Sir

Picton, 27 December, 1878. I beg to report that according to instructions I visited the Berrima coal-mines, saw a quantity of coal taken therefrom brought to the Moss Vale Station, and have tried it on two occasions on goods trains, once from Picton to Mittagong and back, and once from Picton to Goulburn.

The mine is situated in a deep ravine, about 4 miles from Berrima, through which the Wingecarribee flows; the seam of coal is 5 feet 5 inches in thickness where worked, and nearly 300 feet from the top of the cliff; the coal is obtained by tunnelling at that depth; the tunnel is in to the cliff about 34 feet, where

the coal was got which was tested.

In both trials I found there was a large quantity of dirt in the coal. In the trial between Picton and Mittagong, a distance of 48 miles, with about an hour's shunting, 32 cwt. of coal were consumed, and there were 11½ cwt. of dirt left; the train had to stop once on the road to prick up the fire, and the fire had to be thoroughly cleaned at Mittagong. In the trial between Picton and Goulburn there were 51 cwt. of coal consumed, but I am unable to give the quantity of dirt, as the ash-pan had to be cleaned out three times on the road; besides the fire thoroughly cleaned at Mittagong half-an-hour was lost on the journey through waiting for steam and cleaning the fire, although from Mittagong to Goulburn there was not a full train. The coal makes steam fairly while the fire is clean, but in consequence of the large quantity of dirt, the fire would require cleaning every ton of coal that was burnt; for this reason I have not tried it on the passenger trains, as I do not think it suitable coal for locomotive purposes.

WILLIAM WEBSTER.

Sydney, 23 December, 1878.

Report on the Berrima Coal with the No. 9 Down Western Goods, &c., No. 20 Up Western Goods. Sydney to Penrith and back; 68 miles.

This is a bad steaming coal; will not steam well even at the start when the fire is clean; makes an enormous quantity of ashes and some clinker; had to stop at Parramatta Junction this morning with dead ashes nearly up to fire-hole door and knock it all out and make up a fresh fire. It is, in my opinion, much inferior to the worst kind of Bowenfels coal. Consumed 35 cwt. on the two trips, with light load; fifteen waggons out and thirty-one waggons in.

JOHN JONES.

No. 15 Engine from Sydney to Picton, with a train of five vehicles, the new coal steamed all right to Liverpool, and from Liverpool to Picton middling. On arrival at Picton there were 16 or 17 inches of ash in the fire-box and not much clinker. I would have had to clean the fire before going any further. More of this coal is used, and is not so good as the Bowenfels.

The above coal is a portion of that sent by Mr. Atkinson for trial.—J.C., 24/2/78. Locomotive

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Overseer.

No. 5.

Mr. J. J. O. Atkinson to The Commissioner for Railways.

Oldbury, Moss Vale, 4 March, 1879. Referring to the recent test of my coal on your railways, and your letter of 14th January, accompanying the reports of Messrs. Webster, Jones, and Graham, I notice that out of some 16 tons delivered at the request of your Department for test purposes, and which has cost us in opening mine, &c., some £200, less than half that quantity has been utilized; and I have waited expecting perhaps to hear additional reports as to further trials made. However, as those received are all the Railway Department appear in a position to furnish, I would now beg to state that in the trial alluded to in Mr. Webster's report I was present on the engine; we started from Picton at a pressure of 100 lbs. (some forty minutes behind the time appointed, coal burning all the time), and although the gradient is one in forty from the station, before we had gone many miles on the journey the steam had risen to 120 lbs. to the square inch, showing that although we were ascending rapidly with a full train (fourteen trucks) that the coal was When we arrived in sight of watering place (Bargo Lagoon) the train that had preceded us was still standing there, and moved away as we approached. On reaching the top of the Big Hill the smoke from preceding train was visible ahead, and we arrived at Mittagong to time and immediately after the other train, thus showing that although the coal is reported as "unfit for locomotives," the journey was done in usual time. As to "having to stop on the road to prick up the fire," I am given to understand that it is usual for the goods trains to stop on top of the Big Hill, which is the only place we stopped at. On arrival at Mittagong, Mr. Webster directed the furnace to be cleaned out (the engine being of course suddenly stopped whilst under a fair steam, and fired up to nearly the last), with a view, as he explained, of making up a fresh fire to return to Picton, and having the ash weighed. Now, I wish to point out that the contents of this furnace were found to consist of large quantities of partially burnt, and still blazing coal, and cinders, a considerable quantity of pure coke, and a quantity of ordinary coal ashes (this I presume is the "dirt" spoken of in Mr. Webster's report), the weight of which is said to have been 11½ cwt. It will be seen from the foregoing that the percentage of "dirt" must necessarily be excessive under such a mode of test as this, particularly when it is taken into consideration that the trial was over a portion of the line, where there is always more than double the coal used per mile than on any other part of the Southern line, and up a rise of over 2,000 feet in some 20 miles. I desire further to point out the great discrepance between the reports of Jones and Graham. The former (of the Western line) states he could do nothing with the coal, even at the start; whereas Graham states that from Sydney to Liverpool the coal "steamed all right," and thence to Picton middling. Notwithstanding this fact, the Locomotive Engineer reports the coal "quite unfit for locomotives." The coal I delivered to the Government is known locally to be excellent burning coal, and the analysis will bear favourable comparison with most coal of the Colony, except in regard to ash, which is a trifle degree in excess, accounted for by the fact of the coal not being proved a sufficient distance from outcrop of seam. Moreover, we have the fact that coal taken from within 400 yards of where my coal was obtained, and "out of same seam," was acknowledged by the Railway officials five years ago as "suitable for locomotives"; the same coal is now condemned by them. Taking these points into consideration I must express my dissatisfaction with the recent trial, and also my decided disapproval of the mode of trial. I do think that, considering the immence importance to the Government in being able to get, in the Southern District, a coal suitable for locomotive purposes, that some more interest should be taken in the matter than was apparently the case in the trial of my coal. I do not think so important a matter should be left entirely to the subordinate officials of the Railway Department, and I now beg to apply for a fair trial of my coal, to be made in the presence of some scientific gentleman on behalf of the Government, who may be enabled to thoroughly investigate the matter, and who may see that before a really good and useful coal is condemned in this wholesale manner, that there is good reason for that condemnation, which in the present instance I must decline to admit. Another thing, although my coal is a hard semi-bituminous, it was treated the same as, and put into a furnace adapted for, the mountain splint coal, and therefore totally unfit, from the bars being too close together, to test coal of the description of mine. It is a notorious fact that for years the greatest difficulty was experienced by the owners of the Western coal to get it accepted by the Railway Department, owing to the constant informal reports of engine-drivers, &c. It would seem now that no other than the Western coal will suit, whilst it is well known that the coal here is absolutely superior to it, though, strange to say, "unfit for locomotives."

I have, &c., J. J. O. ATKINSON.

Can the Locomotive Engineer suggest any mode of testing the coal which would, or should remove Mr. Atkinson's suspicion that prejudice has influenced in any way the result of test?—Chas. A.G., 15/3/79.

Mr. W. Davies to The Commissioner for Railways.

Sir, Goulburn, 24 March, 1879.

I understand that Mr. Atkinson complains that his coal did not have a fair trial, and he has ited that another trial of it may be ordered and that appeared are prepared to accomplains the

asked that another trial of it may be ordered, and that special arrangements be made to ascertain the suitability or otherwise of this coal for steam purposes.

Mr. Atkinson says that not more than one half of the coal he supplied to the Government has been used in the trials made; that the journey from Picton southwards was accomplished in usual time; that the furnace-bars were too close for this coal, which is of a different character to that usually consumed by the Government on this line; and that coal from the same seam was tried on the South and West Lines some years ago and pronounced "good," and "equal to Bowenfels."

I am, &c.,

WILLIAM DAVIES.

Send this also to Locomotive Engineer.—Chas. A. G., B.C., 29/3/79.

Memorandum to Mr. Scott.

Government Railways, Locomotive Engineer's Branch, Redfern Station, 20 March, 1879.

Referring to the accompanying papers, re trial of Berrima coal, which please retain, and then return to me with your reply, I shall be glad to learn what quantity of coal was actually tried, detailing the lots in each case in the locomotives, and how much remained untried, and what has become of it. R.H.B., 20/3/79.

Mr. Webster.—J.C., 21/3/79.

Sir,

Report from Mr. W. Webster.

Picton, 22 March, 1879.

In reference to Mr. Atkinson's decided disapproval of the mode of trial of the Berrima coal, contained in his letter M.P.1,003, I regret that he did not express this disapproval at the time of trial, as if he had suggested any other mode which would have done justice equally to the coal and to the Government it would have been adopted at once. In reference to Mr. Atkinson's request to have a fair trial in the presence of a scientific gentleman, I beg to state that it was not a "scientific trial" but a practical trial that I made, and it makes little difference whether the refuse is called "fine coke," "coal ash," or "dirt," or even if it be described as "matter in the wrong place," so long as it is of no more practical use in making steam, which was the east in the instance of the direction of the instance of the direction of making steam, which was the case in the instance referred to.

In regard to Mr. Atkinson's complaint that his coal, being a semi-bituminous coal, was treated as a splint coal, and put into a furnace totally unfitted through the bars being too close for testing coal of this description, I beg to say I had no instructions to alter the fire-bars, nor notice that the coal required that it should be done, neither would it have made any difference had it been done, as no alteration of the fire-bars will effectively dispose of the dirt, and I am not aware that "bituminous" coal

necessarily requires bars further apart than splint.

I would respectfully suggest that Mr. Atkinson be requested to name some "scientific gentleman" in whom he has confidence, in whose presence a trial should be made, either of the coal still remaining at Goulburn or other coal to be supplied on any part of the Southern Lines, and if desirable let the fire bars be arranged and the firing done under his directions.

WILLIAM WEBSTER.

See report from Mr. Webster, which I entirely endorse. The 4 tons 13 cwt. sent to Sydney was all used by John Graham on No. 55 Engine, and John Jones, on No. 64 Engine. I cannot suggest any other method for a further trial than that proposed by Mr. Webster.—W. Scott, 3/4/79. Locomotive Engineer.

Memorandum from the Locomotive Engineer to The Commissioner for Railways.

Subject: -Mr. Atkinson's letter relative to the trial of Berrima coal.

Department of Public Works, Railway Branch,

Locomotive Engineer's Office, Sydney, 7 April, 1879.

1. I feel convinced that Mr. Atkinson is labouring under some misapprehension in thinking that there has been any unfairness in the trial of his coal, or any want of desire on the part of the Department to give

every opportunity for its merits being proved.

2. As Mr. Atkinson was present at the trial of the coal, every facility he asked for to enable him to supervise the trials having been conceded; it is to be regretted that he did not then and there make it known, that he was dissatisfied with the way the trial was being carried out, and that he allowed close upon two months (i.e., from 9th January to 4th March) to elapse between the time at which the reports were sent in, and his letter of complaint before recording his "decided disapproval of the mode of trial."

3. If Mr. Atkinson had expressed any opinion at the time of trial as to the space between the bars requiring to be enlarged, the bars would have been adjusted to suit his views. On this point, I may remark, in passing, that Mr. Atkinson affords no little evidence that the bars were, after all, quite far enough apart, by his statement that the refuse consisted of "large quantities of partially burnt and still blazing coal and With bars wider apart this quantity would necessarily have been greater, and the useful effect even less than it was.

4. The papers bearing on the trial referred to by Mr. Atkinson as having taken place five years ago, with coal "taken from within 400 yards of where his coal was obtained and out of same seam," and which he states the Railway officials reported as "suitable for locomotives," have not reached me.

5. If, however, this were so, and the suitability of the coal for locomotives were thus established (which is, as I understand it, Mr. Atkinson's contention), it is not very clear what was the object of again testing a sample which, having been taken, as Mr. Atkinson states, not "a sufficient distance from the outcrop of seam." could hardly be expected to give any better result, and could not therefore establish any new

6. I have thought it right to go into these several points, not from any desire to discourage a further trial of the coal, but because of the charges of "unfairness" advanced by Mr. Atkinson.

7. I feel sure the desire of the Department is to give every facility for testing the suitability for the Railway of any coal that is readily accessible; and if Mr. Atkinson should wish to make a further test, either with the coal that remains (of which there are still 5 tons unused), or with any better sample he may be able to send, in the presence of any one whom he may name, and under any circumstances he may suggest, I will see that every facility is afforded him.

Send Mr. Atkinson an extract from the Locomotive Engineer's report, paragraphs 1, 2, 3, 6 and 7, and say that, concurring as I do in Mr. Burnett's views as expressed in the concluding paragraph of his report, I shall be glad to give directions for a further trial of the coal in any way which Mr. Atkinson may suggest. Add that I attach great importance to this matter, as the discovery of a suitable locomotive coal on the Southern Railway Line cannot fail to be most beneficial to the Railway Department in reducing its working expenses.—Chas. A. G., 9/4/79.

The Commissioner for Railways to Mr. J. J. Atkinson.

Sir, Department of Public Works, Railway Branch, Sydney, 17 April, 1879.

In reply to your letter of the 4th ultimo, with reference to the alleged unsatisfactory manner in which the coal supplied by you for railway purposes was tested, and in which you request that another trial may be made in the presence of some scientific gentleman on behalf of the Government, I have the honor to inform you that the matter has been referred to the Locomotive Engineer, who reports as follows:—

1. I feel convinced that Mr. Atkinson is labouring under some misapprehension in thinking that there has been any unfairness in the trial of his coal, or any want of desire on the part of the Department to give every opportunity for its merits being proved.

2. As Mr. Atkinson was present at the trial of the coal, every facility he asked for to enable him to supervise the trials having been conceded, it is to be regretted that he did not then and there make it known that he was dissatisfied with the way the trial was being carried out, and that he allowed close upon two months (i.e., from 9th January to 4th March) to elapse between the time at which the reports were sent in and his letter of complaint, before recording his decided disapproval of the "mode of trial."

3. If Mr. Atkinson had expressed any opinion at the time of trial as to the space between the bars requiring to be enlarged, the bars would have been adjusted to suit his views. On this point, I may remark, in passing, that Mr. Atkinson affords no little evidence that the bars were after all quite far enough apart, by his statement that the refuse consisted of large quantities of partially burnt and still blazing coal and cinders. With bars wider apart this quantity would necessarily have been greater, and the useful effect even less than it was.

4. I have thought it right to go into these several points, not from any desire to discourage a further trial of the coal, but because of the charges of "unfairness" advanced by Mr.

5. I feel sure the desire of the Department is to give every facility for testing the suitability for the Railway of any coal that is readily accessible; and if Mr. Atkinson should wish to make a further test, either with the coal that remains (of which there are still five tons unused) or with any better sample he may be able to send, in the presence of any one whom he may name, and under any circumstances he may suggest, I will see that every facility is afforded him.

I may state that, concurring as I do in Mr. Burnett's views, as expressed in the concluding paragraph of his report, I shall be glad to give directions for a further trial of the coal in any way you may suggest.

I may also add that I attach great importance to this matter, as the discovery of a suitable locomotive coal on the Southern Railway Line cannot fail to be most beneficial to the Railway Department in reducing its working expenses.

I have, &c.,

CHÁS. A. GOODCHAP, Commissioner for Railways.

Mr. J. J. Atkinson to The Commissioner for Railways.

Sir,

Moss Vale, 6 May, 1879.

In reply to your letter of 17th ultimo (No. 79-5,720), containing report of Locomotive Engineer on my communication of March 4th, I have the honor to inform you that I have read that report with considerable surprise, and am astonished that its contents (that is contents of my letter) could have been so misunderstood. If you will be good enough to peruse my letter of March 4th before alluded to, you will find that my reason for not communicating with your Department before then, was that I was "waiting for further reports," as those to hand only showed that some $7\frac{1}{2}$ tons out of four truck-loads had been tried, and those trials by subordinate officers. As to every facility being granted me to supervise trial, I may state that I only asked to be present at trial from Picton to Nattai, which request was granted, but I had to pay my fare to go to Picton* to see that trial, although giving the Government some £20 worth of coal, and I was not made aware of when the other trials were to take place.

In third paragraph of Mr. Burnett's report, he states that I afforded no little evidence that the bars were wide enough apart, by my statement that the refuse consisted of large quantities of partially burnt.

In third paragraph of Mr. Burnett's report, he states that I afforded no little evidence that the bars were wide enough apart, by my statement that the refuse consisted of large quantities of partially burnt and still blazing coal and cinders. Mr. Burnett is quite mistaken, as I never called it "refuse," and do not consider it as such. If you will be kind enough to again refer to my letter, you will see that I stated that the "contents of the furnace on being emptied were found to consist of partially burnt and still blazing coal and cinders, and a considerable quantity of pure coke." You will pardon me when I say that I do not consider partially burnt and still blazing coal and coke "refuse," as it was taken from inside the furnace (above the bars) not underneath, and certainly decline to have it called "dirt," as stated in Mr. Webster's report, and weighed as such.

In fourth paragraph of Locomotive Engineer's reports, he repeats the word "unfairness," and puts it as a quotation from me. The word does not occur in my letter of March 4th at all. I certainly pointed out the discrepancy between reports of Jones, of the Western, and Graham, of the Southern Line; and as this is an important matter both to myself and I may say to the country, as mine is the only good coal on Southern Line, I should wish you to refer to those reports to satisfy yourself, that though the same coal was tried by each party, yet the reports are very different. The reports referred to are contained in your letter to me of January 14th. I may add that I do not attach any blame to Mr. Burnett in the matter of last trial, further than leaving it to subordinate officers, if that responsibility rests with him, and I am sorry he should feel aggrieved at my communication to you of March 4th, as from the tenor of his report he evidently is, and I quite understand that in your position as Commissioner for Railways you are anxious, and see the importance of getting good coal on the Southern Line, and am convinced you will see that the coal is thoroughly and properly tested.

I have now the honor to inform you that I shall in all probability have a truck-load of coal ready for trial latter end of this month, and shall feel obliged by your informing me whether you will appoint a Should you wish to appoint a person to see it hoisted out of scientific gentleman to supervise such trial. the mine, I will inform you of the day we shall be ready.

I have, &c.,
J. J. ATKINSON. I do not consider that the report of the Locomotive Engineer is open to the objection taken by Mr. Atkinson; the last paragraph (No. 7) should have been accepted by Mr. Atkinson as indicating a desire on the part of Mr. Burnett to meet in every way his views and wishes.

I shall be obliged to the Locomotive Engineer if he will place me in a position to reply early to the

last paragraph of Mr. Atkinson's letter now forwarded to him.—B.C., 19/5/79, C.A.G.

Mr. J. J. Atkinson to The Commissioner for Railways.

Sir.

I have the honor to inform you that we will be hoisting coal on Tuesday next, 27th instant, from the Berrima Coal-mine, for the purpose of supplying you with some for trial. As this coal, should it meet with the approval of the Department, is intended for supply of Southern Railway, I wish to stipulate that the first trial should take place from Nattai or Moss Vale towards the south, and that I, or somebody whom I may appoint should see the fire lighted and view test, in addition to the gentleman appointed by the Government. I should therefore feel obliged by your making the necessary arrangements for the trial of the coal, which will be at Moss Vale end of next week (weather permitting), and furnishing me or my agent with a free pass to view such trial.

From the report of Inspector of Locomotives I gather that my coal is held to be no better, or rather inferior, to Bowenfels, and as I find that Bowenfels is never used without a certain proportion of Newcastle coal being mixed with it, I wish the trial to take place under the conditions that accompany the use of that coal. I should also feel obliged by your directing that the furnace bars be placed further apart, in fact that the furnace should be arranged the same as for the Bulli or Mount Keira coal. In the event of the trial

being satisfactory, it will be easy to test the coal by itself afterwards.

I have, &c., J. J. ATKINSON. 21/5/79.

Inform to-day that I have forwarded his letter to the Locomotive Engineer, who will make the requisite arrangements for testing the coal. Enclose the pass, available from the 27th instant to 5th June, within which dates the tests will no doubt be made. If further passes are required I shall be glad to furnish them.—C.A.G., 23/5/79.

Then forward to Mr. Burnett, who will kindly place himself in communication with Mr. Atkinson

on the subject of his letter, B.C., 23/5/79.—C.A.G.

The Commissioner for Railways to Mr. J. J. Atkinson.

Department of Public Works, Railway Branch, Sydney, 23 May, 1879. Sir.

In reply to your letter of the 21st instant, with reference to the testing of your coal from the Berrima Coal-mine, I have the honor to inform you that I have forwarded your letter to the Locomotive Engineer, who will make the requisite arrangements for testing the coal.

I enclose herein a free pass available from the 27th instant to the 5th June, within which dates the

tests will no doubt be made, but should further passes be required, I shall be glad to furnish them.

I have, &c., CHAS. A. GOODCHAP, Commissioner for Railways.

The Locomotive Engineer to Mr. J. J. Atkinson.

Department of Public Works, Railway Branch, Locomotive Engineer's Office,

Sir. Sydney, 27 May, 1879.

Your letter of the 21st instant, to the Commissioner, reached me yesterday, and I now write to say that I am making arrangements to give your coal a further trial. I shall in the meantime be glad to learn from you what width apart you would like the bars to be.

These bars, from the way the grate is constructed, cannot be moved closer or put further apart at pleasure, but the bars which support them must be specially drilled and fitted with pegs at the required

distance apart.

Our fire-bars are made of W.I., 3 inches deep and 1 inch wide; the pegs are placed 2 inches apart, c. to c., which gives a clear space between the bars of 1 inch. How much do you require?

I observed that you are under the impression that the Bowenfels coal is used mixed with Newcastle. This is an entire mistake, and under these circumstances it would be, I think, only a loss of time to make trial of your coal under the conditions you propose, but I shall have much pleasure in directing that the

fresh trial shall be made on the easier portions of the line towards the south, as you suggest.

It will take some days, after I have your reply about the bars, to prepare the engine and to make final arrangements for the trial, but I will advise you when we are ready to begin, so that you or your

representative can be present at the lighting up, &c.

If you should happen to be in town in the meantime, and would favour me with a call, it would enable the matter to be talked over, and thus any little matters of detail that might tend to facilitate the carrying out of the trial to your satisfaction could be arranged.

> I have, &c., ROB. H. BURNETT, Locomotive Engineer.

Mr. J. J. Atkinson to The Commissioner for Railways.

Moss Vale, 10 June, 1879. I have the honor to inform you that owing to the excessive wet weather (the road being almost impassable) the carter has been unable as yet to get the coal for trial over to Moss Vale, but promises to do

so before end of week. I shall be in town on Friday, and should feel obliged if you would make it convenient to see me. I will be at your office at 10 a.m.. Herewith I beg to return the pass.

I have, &c., J. J. ATKINSON:

I have issued another pass for Mr. Atkinson. He is very anxious that the next trial of his coal should be made under the most competent authority, and I assured him that he might rely upon the desire of the Department to give the coal a fair trial.—C.A.G., 18/6/79.

Memorandum to the Commissioner.

Sydney, 12 July, 1879.

On the 20th ultimo I instructed Mr. Inspector Cobb to make a trial of Mr. Atkinson's coal. I attach a copy of Mr. Cobb's report, dated 4th July, 1879, for your information.

R. H. B.

Memo from Mr. J. Cobb to The Locomotive Overseer.

Sir,
Sydney, 4 July, 1879.
In accordance with your instructions I proceeded to Mittagong on Tuesday, 1st July, and weighed 42 cwt. of Mr. Atkinson's coal on to engine No. 19, driver John Graham; I saw that the fire-boxes and tubes were clear, and on Wednesday left there at 10 15 a.m. with the ordinary pick-up goods train for Goulburn, having a full load of twenty-four loaded waggons and brake-van, arriving there with thirty-six trucks to time as per sheet attached. Mr. Atkinson and Mr. Westcott (chief engineer at Botany Waterworks) both rode on the engine. On arrival at Jordan's Siding the ashes had to be cleaned on the fire-box and smoke-box, and also at Marulan, no delay being caused, there being plenty of time allowed on the time-table with this train. The consumption of coal was rather more than the average, $37\frac{1}{2}$ ewt. against 30 cwt. of Bowenfels. There were 5 cwt. 0 qrs. 5 lbs. of ash in the fire-box, and 2 qrs. 25 lbs. in the smoke-box on arrival at Goulburn, and I estimate that about half that quantity was taken out at Jordan's Siding and Marulan. This coal steamed very well until too much ash formed, which in my opinion renders it unfit for our use. The trial should have been made, and if any further is asked for I would suggest that it be tried, in one of the goods engines working the ordinary goods trains between Picton and Goulburn, and not between Mittagong and Goulburn.

JOHN COBB.

Loco. Engineer.—W. Scott, 5/7/79.

Send copy to Mr. Atkinson at once.—Chas. A. G., 14/2/79.

The Commissioner for Railways to Mr. J. J. O. Atkinson

Department of Public Works, Railway Branch, Sydney, 15 July, 1879. In compliance with the promise made to you, I have the honor to forward herewith copy of a report received from the Locomotive Engineer on your coal tested for locomotive purposes.

I have, &c.,

CHAS.

Commissioner for Railways.

No. 6.

Mr. H. W. Jackson to The Commissioner for Railways.

320, George-street, Sydney, 17 December, 1878. With reference to the conversation held between you and Mr. E. A. Baker, on Saturday, 14th Sir. instant, in the matter of the Nattai Coal-mining Company (Limited), I have the honor to request that you will cause to be tested, on the Government Railways, coal taken from the seam at Mittagong now being worked by that Company.

I have, &c., H. WILLIAM JACKSON,

Sec. pro tem.

Acknowledge, and inform that request will be complied with if Company will arrange for delivery of some 15 or 20 tons, say at Mittagong Station.—D.V., 20/12/78.

The Commissioner for Railways to Mr. H. W. Jackson.

Department of Public Works, Railway Branch, Sydney, 23 December, 1878. In reply to your letter of the 17th instant, applying to have some of the coal obtained from To be delivered the Nattai Coal-mining Company's seam at Mittagong tested on the railway locomotives, I have the honor Railway Station to inform you that 15 to 20 tons will suffice for the purpose, and an officer has been detailed from the Locomotive Engineer's Staff to see that the coal is taken from the mine, the depth taken from, and to attend to all matters connected with the test.

GEO. BERNER,

Pro Commissioner for Railways.

Mr.

Mr. W. Marshall to The Locomotive Engineer.

Sir, Nattai Coal Company (Limited), 320, George-street, 15 January, 1879. In reply to your letter of the 30th December, I am instructed to inform you that we are now ready to produce the coal for testing, and merely await your convenience.

Please to let me know two days before you send an officer to inspect the getting of the coal.

Yours truly

W. MARSHALL,

Secretary.

Dear Sir

Thursday.

The Nattai Coal-mining Company has applied to you to test some of their coal on the railway, and you have agreed to do so and to send up an officer to see the coal taken from the mine.

I am going up to Mittagong to-morrow, Friday night, to make arrangements, being personally

interested in this Company.

Can you inform me when it will be convenient for the officer to be at Mittagong, so that I may prepare our Manager. We are ready at any time. Could the officer be at Mittagong say on Monday? Yours truly,

The Locomotive Engineer will please arrange that a competent person to test this coal is at Mittagong on Monday the 20th instant.—Chas. A. G., 16/1/79.

Memorandum to Mr. Scott.

Government Railways, Locomotive Engineer's Branch, Redfern Station, 17 January, 1879. Please send a competent officer to Mittagong to be present at the testing of coal belonging to the "Nattai Coal-mining Company, Limited," on Monday next the 20th instant. He will take note of the place from which the coal is taken, &c., and report fully the result of the trial.

R. H. B.,

Locomotive Engineer.

Mr. Webster to carry out.—J.C., 18/1/79.

Dear Sir 28 January, 1879.

You said there would be no objection to Nattai Coal-mining Company being represented at the trial of the coal which is about to take place, I believe, this week. We wish Mr. Self to be at one at least of the trials, and we should like one of our shareholders, a Mr. Ruane, to be present. Will you be kind Yours truly, E. A. BAKER. enough to make an order or send me passes?

Approved.—Chas. A. G., 28/1/79. Inform, and say Locomotive Engineer has been instructed.

The Commissioner for Railways to E. A. Baker, Esq., M.P.

Department of Public Works, Railway Branch, Sydney, 28 January, 1879 Sir. In acknowledging the receipt of your letter of this day's date, requesting that Messrs. J. Self and Ruane may be allowed to be present at the testing of the Nattai Coal Company's coal, I have the honor to inform you that your request is complied with, and the Locomotive Engineer has been instructed to make arrangements accordingly. I have, &c..

CHAS. A. GOODCHAP,

Commissioner for Railways.

Locomotive Engineer.—B.C., 28/1/79, Chas. A. G. The Commissioner.—W.S., 3/9/81.

Memorandum to Locomotive Overseer.

Picton Locomotive Station, 22 January, 1879. I beg to report I went to Mittagong, as directed, on Monday the 20th, and saw the Manager of the mine, but could do nothing on account of the wet weather, but will commence to-morrow. As this will take me more than a week, I will leave driver John Palmer in charge at Picton during my absence.

WILLIAM WEBSTER.

Approved.—W. Scott, 23/1/79. Report herewith.—10/2/79. Locomotive Engineer.

Mr. W. Webster to The Locomotive Overseer.

Picton, 8 February, 1879. I beg to report that according to your instructions I have visited the mine of the Nattai Coalmining Company; have seen some coal taken therefrom and tested. The coal is taken from a drive about 70 yards into the side of a ridge, about 150 feet from the bottom and 200 feet from the top. The seam from which it was taken is about 7 feet thick, but has a large number of small bands running through it, trom which it was taken is about 7 feet thick, but has a large number of small bands running through it, which cannot be taken out; consequently the coal is very dirty. The sample sent for trial was tested in a goods engine, with a full train, between Picton and Mittagong, on the 7th. I find the consumption was very heavy, having burnt 40 cwt. 1 qr. 5 lbs. in the 48 miles, with only a very light train on the up journey. 37 cwt. were burnt on the down journey, which is 7 cwt. more than the average. We had also great difficulty in getting steam after the first 10 miles, as the fire got dirty, and had to be pricked up four times, and once cleaned from the top, as the ash had caked and the draught was stopped. We were 1 hour and 25 minutes longer than usual on the down journey.

There were 5 cwt. 3 qrs. 2 lbs. of ash in the fire-box when the trial was over, but that is only a portion of what was made, as the ash-pan had to be raked out four times on the journeys. This coal makes far too much ash to be of any service for locomotive purposes.

makes far too much ash to be of any service for locomotive purposes.

WILLIAM WEBSTER.

No. 7.

Minute of Secretary for Public Works.

APPLICATION has been made to me, verbally, by some residents of Mittagong, to allow them to have a sample of coal tried. Would the Commissioner give instructions that this be done. Mittagong Station, and Mr. Wallace is the name of the person interested.—J.L., 11/11/79. Commissioner for Railways.

Mr. Scott, in Mr. Burnett's absence, will please direct this to be done at once.—Ch. A.G., 11/11/79. Mr. Scott.—C.A.N., 11/11/79. Mr. Webster to arrange to have this coal tested in the usual way in a goods engine with train, between Picton and Goulburn. Allow Mr. Wallace or his representative to travel on the engine when the coal is being tested.—J.C., 15/11/79. Report attached.

Mr. W. Webster to The Locomotive Overseer.

Sir. Picton, 18 November, 1879. I beg to report I have to-day tested the sample of coal sent for trial by Mr. Wallace, of Mittagong, in goods engine No. 48 with a full train of goods, and find it to be an inferior sample of coal, there being considerable difficulty in getting steam, through there being so much dirt in the coal, and there was considerable dimedity in getting steam, through there being so much dirt in the coal, and there was considerably more of this coal used on the trip than is ordinarily used of the Lithgow Valley coal (about one-third more). There were $44\frac{1}{2}$ cwt. used on the journey from Picton to Mittagong and back, a distance of 48 miles, without shunting.* I am unable to say what ash was made, as it was necessary to rake out the ashes at four different places on the down journey, and there was then a very large quantity in the fire-box on arrival at Mittagong; we were also 55 minutes beyond our time going from Picton to Mittagong although there is ample time allowed on the time-table for this train. I therefore think this coal is not well suited for locomotive purposes.

WILLIAM WEBSTER.

Comr.—W. Scott, 21/11/79. Seen.—J.L., 5/12/79. * About 104 lbs. per mile.

No. 8.

J. de V. Lamb, Esq., to The Commissioner for Railways.

The Australian Kerosene Oil and Mineral Company (Limited).

Sydney, 9-February, 1880. I have requested the Manager of the Australian Kerosene Oil and Mineral Company (Limited), at Joadja, to forward 4 tons of coal to Mittagong for trial on the Government locomotives.

Will you kindly give the necessary instructions to have it tested?

Yours faithfully, J. DE V. LAMB.

I approve of this coal being tested. If suitable coal be discovered at Mittagong, a great saving in fuel for Southern locomotives would be effected. Mr. Burnett, B.C., 10/2/80.—CH. A.G. result of the test of this coal warrants a more extended trial, provided only that the coal be better screened, to lessen if possible the large amount of dirt which the trial test produced.—R.H.B., 1/4/80. Mr. Lamb.—CH. A.G., 3/4/80.

The Commissioner for Railways to J. de V. Lamb, Esq.

Department of Public Works, Railway Branch, Sydney, 7 April, 1880. In reply to your letter of the 9th February last, relative to the Australian Kerosene Oil and Mineral Company's coal which you wished tested, I have the honor to inform you that the Locomotive Engineer reports that the sample supplied warrants a more extended test of the coal, but that it must be

better screened, to lessen, if possible, the large quantity of dirt which the trial test produced.

2. I have therefore to request that you will be good enough to direct the Manager to have a further

and thoroughly screened sample supplied for the purpose of a further test.

I have, &c. CHAS. A. GOODCHAP,

Commissioner for Railways.

I should like to see the detailed report.—Chas. A.G. Locomotive Engineer.—G.B., B.C., 8/4/80. Report now attached.—W. Scott, pro Loco. Engineer, 10/4/80.

Mr. W. Webster to The Locomotive Overseer.

Sir, Picton, 24 March, 1880. I beg to report I have made two trials of the coal sent for that purpose by the Australian

I beg to report I have made two trials of the coal sent for that purpose by the Australian Kerosene Oil and Mineral Company, with goods engine No. 20 with goods train from Picton to Goulburn. The first on the 16th March, when Mr. Fell the Company's Manager was present, with a full load of heavily loaded waggons, the average weight of train for the whole distance being 180 tons; on this occasion the boiler was rather dirty, causing the engine to "prime" and waste the water, and from this cause the water ran short, and the engine had to run from Mittagong to Wingecarribee for water, which put the train out of its running time, causing 12 miles extra running, and a detention of two hours on the road; I thought it best therefore to have another trial, which I did on the 22nd March.

This coal as at present supplied is a very fair steaming coal, but very small, having a slight percentage of small kerosene shale, which improves its steaming qualities, but it has a large proportion of dust which increases the consumption, as a large quantity goes through the tubes partially burnt, filling the smoke-box.

smoke-box.

On the first trip 58 cwt. of the coal were consumed in running 93 miles, including 12 miles for water, which gives a consumption of 70 lbs. per mile, or very nearly 4 lbs. per ton per mile. Than an ordinary quantity of shunting by this train both at Mittagong and Moss Vale. There was also more

On the second trip, after having made a little alteration in the fire-bars to prevent so much of the small falling through, with a clean boiler and no more than an ordinary amount of shunting, there were 42 cwt. used in the 81 miles, with an average weight of train of 155 tons, which gives a consumption of 58 lbs. per mile or a fraction less per ton per mile.

On the first trip it was necessary to empty the ash-pan twice, and the smoke-box once on the journey, and on arrival at Goulburn there were 560 lbs. of ash in the fire-box and smoke-box together. On the second trip neither ash-pan nor smoke-box were touched on the journey, and on arriving at Goulburn 738 lbs. of ash were in ash-pan and smoke-box, which is not more than is made by the coal ordinarily in use.

I think if the dust were taken out of this coal, by screening, it could be used very well in goods

engines, and the consumption would not be excessive.

WILLIAM WEBSTER.

Loco. Engineer.—W. Scott, 25/3/80.

No. 9.

Mr. J. W. Fell to The Commissioner for Railways.

Sir, Australian Kerosene Oil and Mineral Co., Limited, Sydney, 17 April, 1880. I have to acknowledge the receipt of your favour of the 7th instant, respecting the result of trial of our coal.

I submitted your offer of 10s. per ton for 100 tons, for a further practical trial, to my directors, who

. have agreed to accept the same.

I will commence delivering the end of next week.

Yours truly, J. W. FELL, General Manager.

The coal may be accepted and tried.—Ch. A. G., 19/4/80. Storekeeper a Engineer.—B.C., G.B., 19/4/80. W. Scott.—C. A. Neale, p. Loco. Engineer, 22/4/80. ordered.—A.R., 22/4/80. The Loco. Engineer. Storekeeper and Locomotive Noted and

Memorandum to Mr. Webster.

Government Railways, Locomotive Engineer's Branch, Sydney, 22 April, 1880. Please arrange to have the Kerosene Company's coal tested in all trains; 50 tons to be sent to Mr. Proctor for the same purpose.

The Company will of course have to deliver the coal into our trucks.

W. SCOTT.

Note and send to Mr. Proctor. Noted.—W. Webster, 23/4/80. Noted.—J.P., 24/4/80. Has this coal been delivered yet?—J.C. Mr. Webster.—4/5/80. This coal has not yet been delivered. I saw Mr. Fell on the 30th last month; he said it would not be in before next week.—W. Webster, 4/5/80.

Bill for coal.

The Commissioner for Railways

Sydney, 30 April, 1880.

Bought of the Australian Kerosene Oil and Mineral Company. April 22, 1880. To 100 tons coal, at 10s. Delivered at Mittagong.

Storekeeper.—G.B., B.C., 6/5/80. This coal is not included in Mr. Proctor's return for April.— A.R., 10/5/80. Mr. Scott.

Memo. to Locomotive Overseer.

Picton, 8 May, 1880. I beg to report that one truck of coal has arrived from the Kerosene Company's Joadja Creek Mine, but it is too small to be of any use, unless it is screened, when there would not be more than onefourth of the quantity left. I have written to the Manager to send no more until further advised unless of a better quality, as it is impossible to use it. W. WEBSTER. Storekeeper to see.—W. Scott, 10/5/80.

It will be seen that the account has been sent in prior to delivery. I would suggest that the Manager of the Company now be written to in the matter, as the coal does not seem likely to suit unless improved upon.—A. R.

Inform unless better screened coal is supplied it cannot be taken.—Chas. A. G., 17/5/80.

The Commissioner for Railways to Mr. J. W. Fell.

Sir. Department of Public Works, Railway Branch, Sydney, 20 May, 1880. Representations having been made to me that the first truck-load of coal supplied on account of the order recently given your Company for the supply of 100 tons from the Joadja Creek Mine is too small to be of any use for locomotive purposes, I have the honor to inform you that no further supplies can be accepted by the Department unless the coal is better screened.

I have, &c., CHAS. A. GOODCHAP,

Commissioner for Railways

Mr. W. Webster to The Locomotive Overseer.

Picton, 1 June, 1880.

I beg to report I have received five trucks (about 25 tons) of coal from the Kerosene Oil and Mineral Company, Joadja Creek. I find it is much smaller than that sent for trial on a former occasion, and although it is a free burning and very good steaming coal, if it were larger, it is far too small to be serviceable for locomotive purposes, as it is impossible to keep a good fire with it by itself; mixed with Bowenfels coal at a proportion of about one-third it may be used, but even then a large quantity will go through the tubes unburnt. The coal in the last two trucks was thoroughly saturated with water when it arrived, which was not the case with the first two trucks, and from the quantity of water which the dust will absorb the coal is thus made to weigh much heavier, the second two trucks weighing 2 tons more than the first two with apparently no more coal.

I have tried this coal between Picton and Mittagong in four goods engines, Nos. 43, 52, 56, and 59; they have all experienced great difficulty in keeping a fire with it, through its being so small, and have been

compelled to use Bowenfels coal with it.

I have not tried it in passenger engines, as I do not think it suitable and would certainly cause delay. I would recommend that the remainder of the hundred tons ordered be used mixed with Bowenfels coal, and that no more be ordered unless it can be sent with the small taken out by screening. WILLIAM WEBSTER.

Mr. W. Webster to The Locomotive Engineer.

Sir, Picton, 2 June, 1880. In my report on the coal from the Kerosene Oil and Mineral Company's Mine, Joadja Creek, In my report on the coal from the Kerosene On and Filmer Company of Trino, coalgo I omitted to state that this coal could be used to advantage for pumping-engines and for drying sand on the Southern Line, which would take about 50 tons per month, which would be a saving in haulage.

W. WEBSTER.

Locomotive Engineer.—W. Scott, 3/6/80. For the information of the Commissioner.—R.H.B., 23/6/80. Send copy of this to Manager of Company.—CH. A. G., 26/6/80.

The Commissioner for Railways to J. W. Fell, Esq.

Department of Public Works, Railway Branch, Sydney, 28 June, 1880. In adverting to my letter to you of the 20th ultimo, intimating that unless the coal supplied on Sir. account of the order given your Company for a trial 100 tons was not better screened no further supplies could be accepted, I have the honor to inform you that complaint has again been made of the smallness of the coal supplied, and to state that unless an improvement takes place in the size, &c., of that supplied the acceptance of further supplies from your mine must cease.

I have, &c., CHAS. A. GOODCHAP,

Commissioner for Railways.

Mr. Fell has been informed that unless larger coal can be supplied no further quantity will be taken. If they have not supplied the 100 tons, and the supplies from this date continue to be unsatisfactory, the receipt of the coal should be stopped.—Ch.A.G., B.C., 28/6/80.

Locomotive Engineer. Noted.—R.H.B., 1/7/80. Storekeeper, B.C., 5/7/80.—G.B.

Is the coal which has been received and made use of, and which is reported to be inferior, to be paid for at 10s. per ton, the price at which the 100 tons were ordered by the Commissioner's directions ?—A.R., Secretary

Yes, I think it should be paid for. It must have cost nearly 10s. to deliver, and I wished this coal tried more in the interests of the Department than in those of the vendors or proprietors.—Ch.A.G. 8/7/80. Storekeeper, B.C., 9/7/80.—G.B. Noted.—A.R., 12/7/80.

J. W. Fell, Esq., to The Commissioner for Railways.

Australian Kerosene Oil and Mineral Co., Limited, Sydney, 9 July, 1880. In reply to your favour of the 28th ultimo, respecting coal supplied by this Company in execution of your order for a trial lot of 100 tons, that the smallness was considered an insuperable objection, I beg to state we are now making such arrangements at the mine as will enable us to obviate to a large extent the breaking up of the coal. Until these are completed, will delay delivering the balance of

I would further point out that, so soon as we are in a position to deliver at the new siding, the breakage arising from loading into waggons will be obviated.

Yours truly, J. W. FELL, General Manager.

Storekeeper, B.C., 14/7/80. Noted.—A.R., 16/7/80. Secretary.

J. W. Fell, Esq., to The Commissioner for Railways.

Joadja Creek, 15 November, 1880. Referring to the trial you had with this Company's coal some three months since, when your Department approved of the quality but found they could not use it for locomotive purposes, owing to the large proportion of slack it contained, I now beg to inform you that we have completed our arrangements whereby we can deliver the coal screened and fairly round. I shall be glad therefore if you will give the necessary instructions for a further trial at your earliest convenience. I have every confidence that the quality of the coal we will now supply you with will meet with your approval. I have, &c.

W. FELL, General Manager, Australian Kerosene Oil and Mineral Co. I think a further trial should be given to this coal.—Ch.A.G., 22/11/80. If Mr. Burnett is unaware of any objection to this, perhaps he will be good enough to give effect to it.—Ch.A.G., 22/11/80. Write to Manager of Company to send coal for trial not exceeding 10 tons.—R.H.B., 24/11/80.

The Locomotive Engineer to James W. Fell, Esq.

Department of Public Works, Railway Branch,

Sir,

Locomotive Engineer's Office, Sydney, 24 November, 1880.

Referring to your letter of the 15th instant, requesting a further trial of your Company's coal, I have the honor to request that you will be good enough to deliver (say) a quantity not exceeding 10 tons at the Mittagong Station, when your request shall be complied with. I shall be glad to hear from you when you have delivered the coal.

I have, &c.,

RÓBT. H. BURNETT, Locomotive Engineer.

Memorandum to Locomotive Overseer.

Sir,

I saw Mr. Fell, the Manager of the Kerosene Oil and MineralCompany, Joadja Creek, who says the Commissioner for Railways has agreed to take some more of their coal. I have also received notice from Mittagong Station that there is a truck of this coal loaded at that station for Locomotive Department. Will you please say if I am to receive it.

WILLIAM WEBSTER.

Locomotive Engineer, 8/12/80. Received, 8/12/80. Please see copy of my 80/5974 herewith, to which no reply has yet been received. I shall be glad to have your report when the trial is completed.

Mr. W. Webster to The Locomotive Overseer.

Sir,

I beg to report I have tested the coal sent by the Kerosene Oil and Mineral Company for trial, in engine No. 50, running between Picton and Mittagong. This coal, although considerably larger than that previously sent by the same Company, is still far too small for use in locomotives; and as there is such a large quantity of it goes through the tubes without being burnt, the consumption is very large, and causes loss of time in emptying the smoke-box frequently. The consumption is about one-fifth greater than that of the coal in general use, 6 tons of it having been used in running three trips between Picton and Mittagong, a distance of 144 miles; the average quantity used by the same engine is 32 cwt. per trip. If this coal can be obtained at a sufficiently reduced price to compensate for the additional consumption, a quantity of it, say 25 tons per week, might be used for drying sand and for pumping engines, but it is not fit for use by itself for locomotive purposes.

WILLIAM WEBSTER.

I expected Mr. Webster in Sydney, and would have explained the necessity of such a quantity of coal being required for drying sand and for pumping engines. If for pumping engines it would only add to expense, as we have to pay a high rate for cartage to such places as Bargo and Yass, and I think would be more economical to have the best coal.—W. Scott, 30/12/80.

Where heavy extra expense is involved in cartage, it is always most economical to use only the best coal.—R.H.B., 10/2/81.

Mr. J. J. Madden to The Commissioner for Railways.

The Australian Kerosene Oil and Mineral Co., Limited, Sydney, 3rd February, 1881.

I shall be obliged if you will be so good as to report on the coal supplied to the Locomotive Department by this Company on the 3rd and 6th December last.

Yours truly,

JAS. J. MADDEN,

pro General Manager.

Locomotive Engineer.—5/2/81, D.V. It has not proved suitable for locomotive purposes.—R.H.B., 10/2/81. Inform.—Ch.A.G., 21/2/81.

The Commissioner for Railways to J. W. Fell, Esq.

Sir, Department of Public Works, Railway Branch, Sydney, 24 February, 1881.

In reply to your letter of the 3rd instant, asking that you may be furnished with a report on the coal supplied by your Company for trial in December last, I have the honor to inform you that the coal has been carefully tested, but the Locomotive Engineer reports that it is not suitable for locomotive purposes.

I have, &c.,

CHAS. A. GOODCHAP, Commissioner for Railways.

No. 10.

Messrs. Barber & Slocombe to The Commissioner for Railways.

Sir,

We are the proprietors of several mineral purchases in the parish of Murrimbah, upon which is now being opened what is believed to be a valuable coal-mine.

The mine is situated about four or five miles from the railway line, and the coal can be delivered at a point on the railway about 28 miles from Goulburn.

The coal is of good quality, and as we are anxious to have it tested for engine purposes, we beg to request that you will be good enough to allow us the opportunity of having a trial in one of the Government locomotives from this station.

We are, &c.,

J. B. BARBER.

J. B. BARBER. JOHN SLOCOMBE. Inform

Inform that I consider it next to useless to test this coal in the locomotives, unless the mine has been in some degree developed. If taken from the outcrop, the coal, if used on the engine, will have the effect of delaying the trains. I think it only right to have a report from the Examiner of Coal Fields, that there is a reasonable prospect of the mine proving a workable one.—CII. A. G., 4/10/80.

The Commissioner for Railways to Messrs. Barber and Slocombe.

Department of Public Works, Railway Branch, Sydney, 6 October, 1880.

In acknowledging the receipt of your letter of the 27th ultimo, stating that you are the proprietors of a coal-mine in the parish of Murrimbah, near Goulburn, and asking that authority may be given to have the coal tested for engine purposes, I have the honor to inform you that before authority can be given for the test to be made, I shall require to know further particulars respecting the mine in question, as I consider it next to useless to test the coal unless the mine has been in some degree developed, as taken from the outcrop, the coal, if used on the engines, will have the effect of delaying the trains.

It is necessary also that I should have a report from the Examiner of Coal Fields, to the effect that there is a reasonable prospect of the mine proving a workable one

I have, &c.

CHAS. A. GOODCHAP.

Commissioner for Railways.

Messrs. Barber and Slocombe to The Commissioner for Railways.

Sir, Goulburn, 19 October, 1880.

We are in receipt of your favour of 6th instant with thanks. In re prospect of our coal-mine, we beg to inform you we are following the seam in a tunnel driving direct into the high table-land. At present we are in 110 feet, coal looking well. We intend carrying the drive in 200 feet, which we consider will be a good test as to quality and quantity. When asking for permission to test the coal for engine purposes, we did not intend taking the sample for trial until we had completed the 200 feet of tunnel. We quite agree with you it would be useless attempting to fire an engine with the outcrop coal.

We are arranging for the Government Mineralogist to inspect and report on the mine. If convenient

for you to receive a bag of coal, we would be pleased to send you one for inspection.

We have proved the seam to extend 6 miles through the high land. Again thanking you for your We remain, &c.

BARBER & SLOCOMBE. Seen. Coal will be tested when the conditions I have named are fulfilled. I trust (in the interest of the Department) that this or some other coal seam in the Southern District may be proved to be workable, and the coal found suitable for locomotive purposes. Put by.—C.A.G., 27/10/80.

No. 11.

Mr. M. J. Moloney to The Commissioner for Railways. Trial of Joadja Creek coal in pumping engines.

Australian Kerosene Oil and Mineral Company (Limited),

Sir.

Joadja Creek, 31 March, 1881.

Mr. Webster, Locomotive Superintendent, Picton, reports that our coal is very satisfactory as regards quality, but cannot use it for locomotive purposes with the furnace bars set to burn Bowenfels coal, as there is too much slack.

I beg to suggest that you use the coal for all the pumping stations from Marulan southwards, for which purpose it is admirably suited. I remain, &c.

M. J. MOLONEY pro General Manager.

What quantity is consumed, and what saving would be effected by the use of this coal at 10s. a ton for the purpose stated? Will the Locomotive Engineer be good enough to ascertain.—CH. A. G., 6/4/81. Please see Mr. Scott's report below.—R.H.B., 26/4/81. Commissioner.

The thirteen pumping-engines on South line, Picton to Albury, consume on an average about 1 ton per week each—about 176 tons a year. By using Joadja Creek coal, freight on the whole of this would be saved (except in the case of that sent to Picton), viz., about 13/3 per ton. As a set-off against this is the higher price of the southern coal, viz., 2/9 per ton—the difference between 10/ and 7/3 per ton. The net saving would therefore be 10/6 per ton, or £355 on the total consumption. The above calculation, however is based on the assumption that each constitute of each kind of each would be required. het saving would therefore be 10/6 per ton, or £355 on the total consumption. The above calculation, however, is based on the assumption that equal quantities of each kind of coal would be required; but as a matter of fact the southern coal being small, its consumption would be greater; and which fact would also involve greater cost of freight, and also cartage, in those cases where the pumping-engine is not near the line, viz., Yass and Bargo, for which 4/ per ton is paid. The saving therefore from the use of this coal will not be great. There would be no objection to giving this coal a fair trial, for say six months in the pump-engines on South lines; after which a report could be furnished.—W. Scott, 25/4/81. Locometica Engineer. motive Engineer.

The trial suggested by Mr. Scott may be made.—Chas. A. G., 27/4/81. Inform and return to Locomotive Engineer.—Chas. A. G.

The Commissioner for Railways to Mr. M. J. Moloney.

Sir,

Department of Public Works, Railway Branch, Sydney, 28 April, 1881.

With reference to your letter of the 31st ultimo, suggesting that the coal supplied by your Company should be used for all the pumping stations from Marulan southwards, I have the honor to inform you that it has been decided to give this coal a trial for six months for use in the pumping-engines named, and the Locomotive Engineer has been instructed to make the necessary arrangements, and to whom I have to refer you for further particulars. I have, &c.,

CHAS. A. GOODCHAP, Commissioner for Railways.

Memorandum

· Memorandum to the Storekeeper.

I have to inform you that it has been decided to use, on trial for six months, the coal supplied by the Australian Kerosene Oil Company for the pumping-engines on the Southern Line between Picton and Albury. G.B.

B.C., 29/4/81.

Locomotive Engineer also informed, with the papers.—G.B. Noted. Has any arrangement nade as to price?—A.R., 3/5/81. Secretary.

The papers are with Locomotive Engineer; please been made as to price !—A.R., 3/5/81. Secretary. inspect them.—G.B., B.C., 5/5/81. inspect them.—G.B., B.C., 5/5/81. Storekeeper,—Will Mr. Burnett kindly lend them to me for this purpose; I will return them without delay.—A.R. The Locomotive Engineer, 7/5/81. Herewith; please return early.—C. A. Neale, pro Locomotive Engineer, 7/5/81. Herewith; please return early.—C. A. Neale, pro Locomotive Engineer, 10/5/81. Storekeeper. I presume orders for this coal, as required, will be sent through this branch in the usual way.—A.R., 11/5/81. Mr. Scott. Yes.—p. W. Scott, J.D.M., 12/5/81. Storekeeper. Papers returned to the Locomotive Engineer.—A.R., 12/5/81.

Memorandum to Mr. Scott.

Government Railways, Locomotive Engineer's Office, Sydney, 5 May, 1881. Referring to your minute of 25/4/81, re using Joadja Creek coal for pump-engines on Southern Line, please note that your suggestion is approved. The owners have been advised.

C. A. NEALE,

pro Locomotive Engineer.

Mr. Webster to note.—J.C., 6/5/81. Not Proctor, and Mr. Park to note.—W. Scott, 9/5/81. Noted,—W. Webster, 6/5/81. Mr. Webster, Mr. Noted.—W. WEBSTER, 10/5/81. Noted.—J. Noted.—H. H. PARK, 19/5/81. PROCTOR, 16/5/81.

Reports as to the quality of the Joadja Creek Coal.

I beg to report that, on comparing the amount of Joadja coal used at the pumping-engines in this district with the amount of Bowenfels coal used to do the same amount of work, I find that there is no appreciable difference in the quantities. H. H. PARK.

Sir,

I beg to report that after six months' trial I find the Joadja Creek coal very nearly, if not quite equal, to the Lithgow Valley coal, although it is very small and requires more careful attention; its steaming properties are very nearly as good, and the consumption is about the same.

W. WEBSTER.

Mr. J. Close to The Locomotive Overseer.

Sir,

In re the use of Joadja coal for pumping-engines, I have to report that I have made a number of experiments with Joadja coal as against Bowenfels. My experience is that with careful firing, Joadja coal is slightly superior to Bowenfels; with careless firing the difference would probably be the other way. The conclusion I have come to is that weight for weight Joadja coal is fully equal to Bowenfels for pumping opening.

pumping-engines.

From the three reports from Inspectors attached, it will be seen that after a six months' trial the Joadja Creek coal has been found to answer well for pumping-engines, and I would recommend that its use be continued for south lines.—John Cobb. Recommended for approval.—W. Scott.

use be continued for south lines.—John Cobb. Recommended for approval.—W. Scott.

Approved for the present; it may be that other coal will compete with it; what do we pay for it?—Ch.A.G., 23/11/81. Loco. Engr.

Seen. 10s. per ton was paid for the coal delivered. I presume we pay the same price now.—W. Scott, Acting Locomot ve Engineer, 5/12/81. Yes; I suppose it cannot be got cheaper.—Chas. A. G., 7/12/81.

No. 12.

Mr. S. R. Baker to The Commissioner for Railways.

Sir. Erith Coal-mine, Jordan's Crossing, 29 August, 1881. I beg to inform you that I have recently opened a coal-mine at a place distant a mile from the new siding, which you caused to be constructed, at my request, a little beyond the Bundanoon platform on the Southern Railway. The coal from my mine has been sent to Goulburn and tried by competent engineers and others, and is pronounced to be of superior quality. One certificate supplied to me states

that 20 cwt. of my coal is equal to 25 cwt. of the best Lithgow.

I am aware that the Government are necessarily at present paying a great price for the coal they use on the Southern Railway, and, should the coal from my mine be suitable for railway purposes, I could, even with my present appliances, supply coal to the Government at a considerably less price than they now

pay for what they use, and thus a considerable money saving would be effected.

Perhaps it would be well before quoting price, to have the coal properly tried by the Government,

and, should it be found suitable, then for me to make a proposal as to quantity, price, &c., &c.

Will you be good enough to inform me if you will have a trial made, and what quantity of coal I should supply, and in what way, &c.

I am, &c., S. R. BAKER.

Inform that if he will send 10 tons free of cost to the nearest station, it will be tested in the locomotives.--C. A. G., 8/9/81.

The

The Commissioner for Railways to Mr. S. R. Baker.

Department of Public Works, Railway Branch, Sydney, 12 September, 1881. Sir, In acknowledging the receipt of your letter of the 29th ultimo, I have the honor to inform you that if you will send 10 tons of your coal free of cost to the nearest station, it will be tested in the locomotives, and the result communicated to you. I have, &c.,

CHAS. A. GOODCHAP,

Commissioner for Railways.

Mr. Scott, B.C., 13/9/81. Mr. Cobb will be good enough to make the necessary arrangements for testing Mr. Baker's coal on an early date, and report to me the result of the test.—W. Scorr, 14/9/81.

Mr. Webster to carry out.—J.C., 15/9/81. Report attached Acting Locomotive Engineer.—Pro. J.C., W.D.M., 12/10/81. Report attached.—W. Webster, 10/10/81.
D.M., 12/10/81. Inspector Webster's report here--W.S. 12/10/81. Commissioner. See subsequent offer to supply 100 tons a week, at 13s. per ton.—C.A.G., 17/10/81.

Mr. W. Webster to The Locomotive Overseer.

Picton, 10 October. I beg to report I have made two trials of the sample of coal sent from the "Erith Mine" for that purpose, in goods engine No. 20 on the 6th instant from Picton to Goulburn, with a special goods train composed, on leaving Picton, of eleven waggons loaded with coal and one goods brake-van, eight waggons loaded with coal were attached at Mittagong, and two waggons loaded with sand were attached at Marulan, making a full load for that class of engines for the whole distance.

The second trial was made in goods engine No. 57 on the 8th, with an ordinary goods train from Picton to Mittagong and head

Picton to Mittagong and back.

This coal is a very fair steaming coal, no difficulty being experienced in getting steam, or in keeping time with the trains with which the coal was tried, but the consumption of the coal is large, and it leaves

a large amount of ash.

On the first trial 54 cwt. of coal were consumed between Picton and Goulburn, a distance of 81 miles, being 746 lbs. per mile, the average consumption being about 65 lbs., but the train was heavier than the average. I cannot say what was the exact amount of ash, as the fire had to be cleaned at Mitta-

gong; there were 460 lbs. on arrival at Goulburn and about the same quantity was taken out at Mittagong.

On the second trial 40 cwt. of coal were used from Picton to Mittagong and back, a distance of 48 miles, being equal to 93 lbs. per mile, the average consumption being about 83 lbs. per mile. 400 lbs. of ash was taken out at Mittagong and the same quantity at Picton, when the fire was dropped, making 800 lbs. of ash to 40 cwt. or 4,480 lbs. of coal.

This coal is not so suitable for railway purposes as the coal at present in use, first on account of the additional consumption, and next on account of the extra amount of ash, rendering it necessary that the fire should be cleaned more frequently.

The following will show the results of the trial as compared with coal at present in use:-

•	Miles traversed.	Total coal consumed in cwts.	lbs. per mile.	Quantity of ash in lbs.
With Engine No. 20, using—Coal from Erith Mine	81	. 54	74.6	900
Coal from Lithgow Valley	81	47	65	700
With Engine No. 57, using—Coal from Erith Mine	448	40	93	800
Coal from Lithgow Valley	48	35	83.7	500
			\mathbf{WM} .	WEBSTER.

Acting Locomotive Engineer. - J.C., 12/10/81. Mr. Baker offers to supply coal at the siding 1 mile on Goulburn side of Bundanoon Platform for 13s. a ton screened into trucks. If Locomotive Engineer concurs, orders for 100 tons per week might be given. Coal delivered at Mittagong costs us 18s. at present.—Ch. A. G., 15/10/81. I suggest 100 tons more for trial before a regular supply be obtained.—W.S, 18/10/81. Approved.—Chas. A. G., 19/10/81.

No. 13.

Mr. J. S. Martin to The Commissioner for Railways.

Marrickville, 30 August, 1881. I have the honor to request that you will permit a sample of coal now lying at the Railway Station, Mittagong, but which will be forwarded thence to Sydney Station, to be used on one of the Government locomotives, as a test of the quality of such coal, and that the driver or stoker may report thereon accordingly.

In support of my request I beg to state that the coal referred to is taken from a seam lately opened by myself and others, near the railway, Mittagong. I believe, from testing the coal myself, that the discovery is a valuable one, and will be of great benefit to the community; and I think that a report from the Government on the subject would be the surest means of enabling the proprietors to successfully develop I have, &c.

JOHN S. MARTIN. There is no objection to the coal being tried. The Traffic Manager will please arrange for its being kept in a suitable place for the purpose, and the Acting Locomotive Engineer will direct a trial of it in the -Сназ. А. G., 30/8/81.

Mr. Paull, Darling Harbour, to note and arrange for the truck of coal in question being handed over to Locomotive Department. Let me know when done.—W. V. Read, per D.K., 31/8/81.

Received the coal on 30/8/81, and delivered it to Mr. Scott, Loco. Department, on Mr. Martin's order. Will you please say in the Chas. Paull, 2/9/81. Traffic Manager.

Chas. Paull, 2/9/81. Traffic Manager.

W. V. Read, per D.K., 3/9/81. Will you please say if the freight, as shown on ticket attached, is to be collected from Mr. Martin.

Please see 81-5,582 herewith.

Driver

Driver Baker to Mr. Cobb.

Sir,

I beg to state that yesterday, September the 8th, I used Mittagong coal with engine No. 106 on No. 15 down goods train to Picton. I find the coal very inferior to the ordinary Bowenfels coal. I had to clean the fire three times between Sydney and Picton; the first time at Liverpool, the fire-box being full of dirt; the second time at Campbelltown, the fire-box being again full of dirt; and again at Picton. There is fully three times the amount of dirt in this coal to what there is in the ordinary Bowenfels coal. It would be impossible to work any train to time with this coal in its present dirty state. The amount used on the trip was 61 cwt. against 47 cwt. of ordinary coal. I lost twenty minutes on the down trip cleaning the fire and getting steam.

Mr. W. Webster to The Locomotive Overseer.

Sir,

I beg to report I travelled with the engine in which the coal sent from Mittagong was being tested. It is a very strong coal, and makes steam without any difficulty while the fire is clean, but the consumption is very large, and it leaves far too much ash to be of service in locomotives; the fire had to be partly cleaned at Liverpool, and thoroughly cleaned at Campbelltown (causing a delay of 20 minutes), and then the dirt was level with the fire-hole on arrival at Picton, which is what would have been with the Bowenfels coal for the whole journey.

WILLIAM WEBSTER.

This coal was tested in goods engine No. 106, running a "through" goods train between Sydney and Picton. From the reports it appears to be very dirty coal; and the consumption is also large, 61 against 47 cwt. Mr. Martin accompanied the engine, and I believe expressed himself quite satisfied with the trial.—J.C., 10/9/81. Acting Locomotive Engineer.

Inform and then return to Manager for collection of freight.—D.V., 19/9/81.

Mr. D. Vernon to Mr. John S. Martin.

Sir, Department of Public Works, Railway Branch, Sydney, 22 September, 1881.

With reference to your letter of the 30th ultimo, requesting that a sample of coal from a seam opened by yourself and others, near the railway station at Mittagong, might be tested for locomotive purposes, I have the honor to inform you that a trial of the coal has been made, and I enclose herein copies of the reports received, from which it will be seen that it is unsuitable for locomotive purposes.

I have, &c.,

D. VERNON,
Pro Commissioner for Railways.

Mr. Paull to collect freight.—W. V. Read, per D.K., 23/9/81. Freight into Revenue, 23/9/81.—Chas. Paull, 26/9/81. Traffic Manager. Secretary.—

Freight duly collected and paid Secretary.—W. V. READ, 26/9/81.

Mr. John S. Martin to The Commissioner for Railways.

Sir,

A short time ago we obtained permission to try 5 tons of coal from our mine at Mittagong on one of the Government locomotives. The result of that trial, although demonstrating that the coal supplied was unfit for locomotive purposes, showed that it was of such a character as to lead us to persevere in the further development of the mine. After further working we find the coal so improved as to appear to answer the required qualifications.

Under the circumstances, we beg to request that you will be good enough to direct that we may be permitted to try 5 tons of the coal now being worked (with a view to testing its fitness for locomotive purposes) on one of the Government locomotives.

We need hardly draw attention to the fact that the production of a superior coal close to the station on the Southern line would be of very great importance.

An early answer will oblige.

We have, &c.,
JOHN S. MARTIN,
For self and partners.

Another trial may be allowed.—Chas. A. G., 1/2/82.

The Commissioner for Railways to Messrs. J. S. Martin & Co.

Gentlemen, Department of Public Works, Railway Branch, Sydney, 3 February, 1882.

In acknowledging the receipt of your letter of the 24th ultimo, asking that a further trial may be made of coal obtained from your mine at Mittagong, I have the honor to inform you that another trial will be allowed, and have to refer you to the Acting Locomotive Engineer to make arrangements for the delivery of the coal, &c.

I have, &c., CHAS. A. GOODCHAP, Commissioner for Railways.

Mr. Cobb will please arrange for a thorough test of the coal and report the result.—W.S., per C.A.N., 6/2/82. Mr. Cobb. Arrange to test this coal in a goods engine between Picton and Goulburn; let me know when you are ready and I will send driver John Jones to Picton to carry out the test.—J.C. Mr. Webster. Mr. Martin, on his representation to accompany the engine.—J.C. This coal has been tested, driver John Jones will report the result.—W. Webster, 22/2/82. Commissioner.—W. Scott, 24/3/82. Seen. If result of test be applied for it can be supplied in general terms.—Chas. A. G., 6/4/82.

Driver Jones to Mr. Cobb.

Picton, 22 February, 1882. I beg to report on the quality of the coal supplied by Messrs. Martin & Co., tested on No. 188 Sir, engine, with ordinary goods train between Picton and Goulburn on 21st. This is a pretty fair steaming. coal, but makes a large percentage of ashes; it steams well as long as the fire is clean, but the ashes quickly accumulate, and the only difficulty is to get rid of them; we had to thoroughly clean the fire twice on the journey but managed to keep time. It has the look of coal that will soon improve in quality, as from its appearance it has evidently been taken from near the surface. There was also a large quantity of sakes in it, which retarded its steaming powers and added to the quantity consumed as well as to the weight of ashes made. The engine, too, was not in as good order as the one which tested the Berrima and Erith coal, having considerable blow on her slide valves, which would act slightly against it. This coal, although it would be useful for many purposes, is scarcely suitable at present for locomotive use, although I have tested worse than this from the Southern mines. If it improves in the manner that I think it will, it will soon bid fair to become equal to any coal produced from the Southern mines.

The following shows the consumption, &c.:-

Date.	No. of Engine.	Load.				Coal consumed.		Ashes made.		Miles run.	fbs. per mile.	
21 Feb	188	Picton to Mittagong Mittagong to Bowral Bowral to Austermere Austermere to Bundanoon Bundanoon to Baker's siding Baker's siding to Cable's siding Cable's siding to Morrice siding Morrice siding to Marulan Marulan to Towrang Towrang to Goulburn	18 17 18 19 21	aggons and	l bv.	t. 2	c. 9	q. 15s. 0 0		q.	81	67 ‡

Yours respectfully, J. JONES.

No. 14.

Mr. S. R. Baker to The Commissioner for Railways.

Sir,

Erith Coal-mine, Bundanoon, 14 October, 1881.

I understand that the trial of my coal which you were good enough to have made has shown that it can be used with advantage on the Government railways. I beg to say that I shall be prepared to supply the Department within five weeks from the present time with coal equal, if not better, than that which was tried, at 13s. per ton, screened into the railway trucks at the siding situated 1 mile on the Goulburn side of the Bundanoon platform.

The quantity I could supply at first would be 100 tons per week, which I could increase very shortly

if the Department desired it. I am, &c.,

The coal delivered at Mittagong costs us at least 18s. per ton. I think it will be desirable to give an order for the delivery of 100 tons of this coal weekly till end of year, when Mr. Baker and others interested in southern coal will be able to tender for the quantity required in 1882. In the meantime, by using 100 tons per week for six weeks or so, we shall be able better to judge of the quality of the coal. the Locomotive Engineer concurs, an order may be given.—C.A.G., 15/10/81.

I would suggest that (say) 100 tons be obtained for further trial before ordering a regular supply.

Approved. Inform the writers to-day.—C.A.G., 19/10/81. W. Scott, 18/10/81. Commissioner.

The Commissioner for Railways to Mr. S. R. Baker.

Department of Public Works, Railway Branch, Sydney, 19 October, 1881. Sir, With reference to your letter of the 14th instant, in which you state that you will shortly be in a position to supply coal equal to, if not better than, that which was tried by this Department, I have the honor to request that you will be good enough to supply 100 tons, with a view to a further trial being made of this coal. I have, &c.

D. VERNON,

pro Commissioner for Railways.

Mr. S. R. Baker to The Commissioner for Railways.

Erith Coal-mine, Jordan's Crossing, 20 October, 1881. Sir, I have the honor to acknowledge the receipt of your letter of the 19th instant.

I understood that the trial of my coal, which you were good enough to have made a short time since, was of such a satisfactory character that you would order 100 tons per week of it for so long a period as you might deem advisable. By your letter just received, it would seem you require another lot of coal for trial

Allow me to point out that you have about 5 tons of coal left which I sent for trial, and if that be not enough I could send you 10 tons more; but to supply 100 tons for trial would necessitate me constructing expensive works, which, before I do, I desire, if possible, to enter into some arrangement to supply you for regular use.

Perhaps

Perhaps you might see fit to give me an order to supply 100 tons per week for such a time as may be suitable to yourself, reserving to yourself the right to cease taking any more coal from me at any time you If you do so, I desire to say that should you at any time intimate to me that you do not require more coal to be sent by me, I shall not consider that by your so doing I am entitled to any compensation or any consideration from you. I am, &c.,

S. R. BAKER.

Mr. Scott, for report. I can quite understand that to get out 100 tons some considerable expense will have to be gone to—construction of a tramway, &c. It seems to me that the Department cannot incur much risk, under the condition stated in the last paragraph of this letter. Of course, if Mr. Scott has any reason for supposing that the coal will not turn out as well as the sample supplied, or that the test and report thereon made are unreliable, we should not give an order for even 100 tons. Should there be any ground for entertaining any suspicion of bona fides, we should either take advantage of the proposal to take 10 tons for a further test or abandon the proposal altogether.—C.A.G., 20/10/81.

I think it would be more satisfactory to take 10 tons, as proposed by Mr. Baker, for a further trial, before committing ourselves to taking any larger quantity.—W. Scott, Actg. Loco. Engineer, 25/10/81. I gather from this that Mr. Scott is uncertain about the accuracy of the test. An Commissioner.

additional 10 tons may therefore be tested.—C.A.G., 25/10/81.

The Commissioner for Railways to Mr. S. R. Baker.

Department of Public Works, Railway Branch, Sydney, 26 October, 1881. Sir, Referring to your letter of the 20th instant, stating that to supply 100 tons of the coal from your mine would necessitate the construction of expensive works, and asking that an additional 10 tons may be accepted for the purpose of making a further test of the coal, I have the honor to inform you that I cannot at present give you an order for the delivery of 100 tons per week as you request, but the quantity to be tested will be reduced from 100 to 10 tons.

I have, &c.,

CHAS. A. GOODCHAP Commissioner for Railways.

Memorandum to Mr. W. Webster.

22 October, 1881.

THERE will be delivered at the Bundanoon Siding 100 tons of coal from the Erith Coal-mine. Please send four trucks (24 tons), to Mr. Tipping, Penrith, and two trucks (12 tons) to Sydney, and have the other 64 tons used in the usual manner, and then report on same.

Pro J. COBB, W.D.M. Please say if any of this coal is to be sent to Goulburn and beyond.—W. Webster, 23/10/81. Cobb.

Mr. Baker cannot send the 100 tons and has been asked to send 10 tons, which I wish you to send to Mr. Tipping for trial. Please book to him, and inform him when it leaves Jordan's Crossing.

If you have any more of this left, send it to Mr. Proctor and ask him to test it and forward report to me.—J.C., 24/10/81. Mr. Webster.

Memorandum to Mr. Cobb.

Picton Station, 24 October, 1881. I have one truck of the coal sent for trial by Mr. Baker still on hand, which I will, in accordance with your instructions, send to Mr. Proctor in Goulburn to be tested.

WILLIAM WEBSTER.

Mr. J. Proctor to The Locomotive Overseer.

Sir, Goulburn, 31 October, 1881. rial in our engines. I tested One truck of coal received at Goulburn from Mr. Baker for trial in our engines. this coal on engine No. 104 with a goods train Goulburn to Harden on 28/10/81, sixteen loaded trucks and break-vans, total weight of train 154 tons; the quantity of coal consumed on trip 94 miles was 46 cwt.; the weight of ash from this coal was 17 cwt. 3 qrs. 24 lbs. This coal steams well for 50 miles; at Yass the fire-box was full up to the door and had to be cleaned out; there is no clinker in the ash, though it will not fall through the bars unless knocked out with the pricker. The quantity consumed is about the same as Bowenfels coal it makes a little more ash. I consider this sample of coal suitable for same as Bowenfels coal; it makes a little more ash. I consider this sample of coal suitable for locomotive engines working goods trains. J. PROCTOR.

Mr. S. R. Baker to The Commissioner for Railways.

Erith Coal-mine, 2 November, 1881. I am in receipt of your letter (No. 81-19,198), in which you state you require another 10 tons

of my coal for trial, which I shall be willing to supply. There have been already two trials from 5 tons out of the 10 tons I have supplied, and I hear that the 5 tons left have been sent to Goulburn for another two trials, so that perhaps if I now supplied 5 tons, which would give two trials more (in all a sufficient quantity for six trials), that might be enough to test the coal properly. I will therefore send 5 tons as quickly as possible, and if the officers of the Depart-

ment want more I will supply it. As I cannot now say the exact day when I can have the 5 tons ready, on account of the alteration I am making in the tramway to connect my line with the Southern Railway, perhaps I had better communicate when ready with the Locomotive Superintendent.

I may say, however, that I shall be able to put the 5 tons at my siding probably in about a week's

I shall be glad to be allowed, in company with my engineer, to be on the locomotive when the next trials are made. I am, &c.

S. R. BAKER.

I see no objection to a compliance with this request. At the same time, to prevent any dispute hereafter I wish some one from the Locomotive Branch to go to the mine, and see the coal taken from it, in order that there may be no doubt as to the place where the coal came from. As the coal will be required for use on the Southern Line, its trial may be confined to that line. Mr. Baker fears that the prejudice against Southern coal if used on the Western Line would militate against an impartial report. I do not believe that there is any foundation for any such belief, but as a trial on the South will answer all purposes it may be confined to the south.—C.A.G., 3/10/81.

Mr. Scott, B.C. Mr. Cobb to arrange and report.—W.S., 4/11/81.

Mr. W. Webster to The Locomotive Overseer.

Picton, 14 November, 1881. Sir, I beg to report that in accordance with instructions I visited Mr. Baker's coal-mine, about

2 miles from the Bundanoon platform, on the Southern line of railway; the mine is situated in the bottom of a gully, and has one main tunnel about 150 feet long, with six branch tunnels out of it; the seam is about 3 feet in thickness, having several bands running through it, which require to be carefully

picked out with present appliances; about 25 tons of coal per day could be put into the trucks at the railway.

I saw 4½ tons of coal taken from the mine, and had it brought to Picton and tested in goods engine No. 42, Driver Henry Matthews, with a special goods train from Picton to Goulburn; the trial was made as nearly as possible under the same circumstances as before, except that it was not the same engine; the train was composed, on leaving Picton, of eleven waggons loaded with coal, and brake-van; three waggons of coal, and five of material were attached at Mittagong, making a full load for this classof engine.

The consumption of coal was greater on this occasion than before, the quantity consumed being 55 cwt. 5 qrs. on the journey of 81 miles as compared with 54 cwt. before, making a difference of $2\frac{1}{2}$ lbs. per mile; the total quantity of ash made was 1,320 lbs., being 1,130 lbs. taken out of the ash-pan (which is a very large quantity), and 190 lbs. from the smoke-box (which is not large).

The fire on this occasion had to be cleaned at Colo and pricked up at Bundanoon. 10 minutes time was lost between Picton and Mittagong, although the train was run the whole distance from Picton to Goulburn in time, but I have still to report that this coal is not so well adapted for our work as the Bowenfels coal, both on account of the extra consumption and the extra trouble and delay in getting rid of the ash.

WILLIAM WEBSTER.

Acting Loco. Engineer.—J.C., 15/11/81. The results of the trials of this coal are not so favourable as could be desired, but I think we may commence to use it for some of the goods trains on south line, with the view of proving whether the trains can be worked with it or not. I would suggest that (say) 50 tons per week be ordered, but I think Mr. Baker should be informed that the Commissioner does not bind himself to take any particular

quantity of coal, unless it be found in practice to sufficiently answer our requirements as regards quality.

Commissioner.

W. SCOTT. Commissioner.

To be considered in connection with the tenders for the supply of coal for 1882.—Chas. A. G., 19/11/81.

Mr. W. Scott to S. R. Baker, Esq.

Department of Public Works, Railway Branch,

Locomotive Engineer's Office, Sydney, 7 December, 1881. I have the honor to request that, with the view of a further trial being made, you will be good enough to deliver at Austermere Siding not less than 5 tons of the coal you tender to supply this department with during next year.

I shall be glad to hear from you when the coal is delivered.

I have, &c., W. SCOTT, Acting Locomotive Engineer.

Will Mr. Scott be good enough to give directions to allow Mr. Baker and his engineer to be in attendance when trial is being made of their coal.—D.V., pro Commissioner, 13/12/81.

Mr. Webster to arrange.—J.C., 14/12/81.

Memorandum to Mr. Webster.

Redfern Station, 16 December, 1881.

Mr. Baker called this morning and stated that the sample of coal to be tested is now ready at his Siding. Please arrange with the Traffic Department to have it brought to Picton; also, if possible, arrange to have it tested by driver Jones (without mixing it with other coal) on Wednesday next, in goods engine between Picton and Goulburn. Mr. Baker, junr. and his engineer to be allowed to accompany the engine.

JOHN COBB.-

I saw Mr. Baker, junr. yesterday, and arranged with him to test his coal on Thursday; please send pass for that day to him.—William Webster, 17/12/81.

Papers herewith.—J.C., 17/12/81.

This coal was tested as desired, and will be reported on by driver J. Jones.—W. Webster, 28/12/81. These trials have been completed.—W. Webster, 29/12/81.

Picton, 23 December, 1881.

I beg to report on the quality of the Erith Colliery coal, tested on engine No. 183 with the ordinary goods train from Picton to Goulburn, on the 22nd instant.

This is a fair steaming coal, but makes rather a heavy percentage of ashes. It lights up and burns very freely, makes no clinker, and much resembles Bowenfels coal in its action. Of course there would be some little difficulty with it at present, and the fire would have to be cleaned once, or perhaps twice, on

the journey; but it is quite possible to use this coal alone on these goods trains if the fire be cleaned on the journey. We managed to keep time all the way running from Picton to Mittagong without cleaning the fire, and being the heaviest part of the road I consider this to be very fair, although the journey was performed under favourable circumstances, with a new engine and dry rails.

The following is the consumption:

Consumption of Coal. Date No. of Engine. ec. 22 183 lbs. per mile. 58 Tons cwt. qrs. lbs. 2 1 3 25 Dec. 22 Picton to Mittagong, 11 waggons and brake... Mittagong to Bowral, 22 Bowral to Austermere 20 Austermere to Moss Vale, 17 Moss Vale to Bundanoon, 19 Bundanoon to Marulan, Marulan to Goulburn, 17 Ashes made, 8 cwt. 0 qrs. 9 lbs. Miles run, 81.

This was a light train the latter part of the journey, which would reduce the consumption of coal and also the weight of ashes.

JOHN JONES.

Acting Locomotive Engineer.—J.C., 30/12/81.

Sir,

Picton, 28 December, 1881.

I beg to report on the trial of the Berrima coal and Bowenfels coal, mixed in equal parts, and tested on No. 183 engine, on ordinary goods train from Picton to Goulburn, on the 27th instant.

The mixture of Bowenfels greatly assisted the Berrima coal in burning and making steam, and both together they steam pretty fairly. By cleaning the fire twice on the journey we were enabled to keep time.

Mixing these coals is the only way I can suggest to make it go. As the Berrima coal gets better, which I think it will, the Bowenfels coal can be diminished by degrees until it can be dispensed with altogether. This, I think, could be left to the discretion of the drivers, who would discover from day to day how much the Berrima coal improved, and so increase the quantity to suit their requirements. I have no doubt there would be some difficulty with it at first with some of the engines, but still it can be used in this manner on these goods trains, and as the Berrima coal improves in quality this difficulty will disappear.

The following is the consumption, &c.:-

D . 37 479 .					Coa	l con	sum	ed.	
_Date No. of Engine		Load.			Tons	cwt.	grs.	lbs. lb	s. per mile.
Dec. 27 183	Picton to Mittagong,	11	waggons and	brake					57 ¾
*	Mittagong to Moss Vale,	19	"						1
	Moss Vale to Bundanoon,	, 18	,,,						
	Bundanoon to Marulan,	20	,,						
	Marulan to Towrang,	19	,,						
•	Towrang to Goulburn,	30	,,						
	Ashes made, 8 cwt.	3 qrs	s. Miles run	, 81.					

Yours, &c., JOHN JONES.

Assistant Locomotive Engineer,—J.C., 30/12/81.

No. 15.

Mr. W. Scott to The Chairman of the Berrima Coal-mining and Railway Company, Goulburn.

Department of Public Works, Railway Branch,

Sir,

Locomotive Engineer's Office, Sydney, 4 November, 1881.

Referring to your tender for the supply of coal required at Picton, Goulburn, and Harden, I have the honor to request that you will be good enough to deliver at Austermere (for trial) a sample of the coal you propose to supply.

I shall be glad to hear from you when you have delivered the coal.

I have, &c., W. SCOTT,

Acting Locomotive Engineer.

Mr. J. J. Atkinson to The Acting Locomotive Engineer.

Sir

Moss Vale, 12 November, 1881.

Mr. Davies of Goulburn has forwarded me your letter of 4th instant in which you request a sample of our coal (for trial) to be delivered at Austermere platform.

I have the honor to inform you that I caused a load of this coal to be delivered at Moss Vale Station on Friday last (11th instant) and wired you to that effect. I find on inquiry that the coal has been sent on to Sydney. As we should wish our engineer, Mr. Swinney, to be present at the proposed trial, would you be kind enough to inform me on what day and from what place such trial will take place, and give directions for Mr. Swinney to be allowed a seat on the locomotive.

I have, &c., J. J. ATKINSON,

Managing Director for Berrima Coal-mining and Railway Company (Limited).

Copy of my letter (81 No. 6,711) to Mr. Davies herewith. Mr. Cobb will please make the necessary arrangements for having the coal tried as early as practicable. Please say upon what date and from what place the trial will take place, so that I may inform Mr. Atkinson.—W.S., 15/11/81. Mr. Cobb. Mr. Webster, 15/11/81.

Sir,

Picton, 15 November.

I beg to report on the quantity of the Berrima coal tested to-day between Picton and Mittagong, on No. 42 goods engine, with a full load of sixteen empty sheep-vans, cattle waggons and brake. This is a very poor steaming coal, and makes nearly 20 per cent. of ash but no clinker. Had to clean the fire and wait for steam four times on the journey, and exceeded the running time by an hour and fifteen minutes. At present it is perfectly useless by itself for locomotive purposes, but a certain portion of it may perhaps be used in conjunction with Bowenfels coal until it improves in quality, and so increase the quantity as it becomes more suitable.

Coal supplied.
Tons. cwt. grs.
1 15 1

Coal consumed. Tons. cwt. qrs.

Ash made.

Miles run. 24

Acting Locomotive Engineer—J.C., 17/11/81.

JOHN JONES.

Memorandum to Locomotive Overseer.

Picton Station, 15 November, 1881. I wrote to Mr. Atkinson last night that there was not sufficient coal for the trial required, the sample that was sent was tried to-day between Picton and Mittagong, in the presence of the Company's Engineer, with, I think, not very satisfactory results, as the train was delayed an hour on the journey. there was no more coal here and no word of any more coming, Jones returned this evening to Penrith, and I presume will have his report at your office in the morning. I think it is a mistake that a truck of coal has been sent to Sydney, as I wired to the Station-master, Moss Vale, yesterday, and his reply was that we had got all he had received. Telegram attached.

WILLIAM WEBSTER. No coal has been received at Sydney; see memo. attached.—J.C., 17/11/81. Acting Locomotive

Engineer.

Memorandum to Goods Department.

Redfern Station, 15 November, 1881.

PLEASE say if you have received one truck of sample coal from Moss Vale to Sydney, 11th instant, invoiced to Locomotive or Mr. W. Scott, from Mr. Atkinson, Director Berrima Coal Coy.

JOHN COBB.

I have not received a truck of coal from Moss Vale, either for Mr. Scott or for Locomotive Branch, as yet, but it may be in to-night or to-morrow. -W. P. Jones.

No. 16.

Mr. J. J. O. Atkinson to The Commissioner for Railways.

Oldbury, Moss Vale, 25 November, 1881. Sir. I have the honor to enclose herewith letter from our Chairman. I should feel obliged if you would kindly give instructions for Mr. Swinney (our engineer) and myself to be present on the locomotive when next trial of coal comes off, and that I should have timely notice of time of trial.

I have, &c., J. J. O. ATKINSON,

Managing Director.

Forward to Acting Locomotive Engineer.—C.A.G., B.C., 6/12/81.

Mr. W. Davies to The Commissioner for Railways.

Mr. W. Davies to The Commissioner for Railways.

Sir,

Berrima Coal-mining and Railway Company (Limited), Goulburn, 23 November, 1881.

As Chairman of the above Company it is my duty to place before you a statement which, it is hoped, may lead to a much more satisfactory trial of our coal than has yet been practicable.

When Mr. Scott informed me that coal was requested for trial he did not name any quantity. A dray-load of 35 cwt. was sent, and ere more could be supplied that was sent on to Picton. On Monday, the 15th instant, a note was sent to the Managing Director (Mr. Atkinson) to the effect that a trial of our coal from Picton to Goulburn would take place in the morning at 6 30. That this note reached Mr. Atkinson at all was accidental, for it did not go through the Post Office, and it came into his hands after dark on Monday evening, when there was no time for arrangements. Knowing that the coal supplied was insufficient, a cart-load was sent to Moss Vale Station to meet the train on Tuesday morning, but this was not used, as the engine did not go beyond Mittagong.

Coming now to the trial itself, I beg to mention some circumstances which were against us.

The engine, No. 42, was an old one, and too light for the state of the rails, owing to the rain which fell all the time.

The train load was estimated at 115 tons, which I understand is sufficient for a heavier engine.

I am informed that the chief cause of failure was the mode of firing. Our engineer says that he has frequently been on engines on the South-west and North of England lines, and has invariably seen used a pricker to loosen the fire.

The Berrima coal is bituminous, and needs different treatment from splint coal; but during the trial no pricker was used, and the consequence was that the ash accumulated over the bars and the fire went down.

I have been informed that much of the western coal makes a great deal of ash, but owing to its nature the same difficulty may not be experienced.

difficulty may not be experienced.

I would also direct attention to the reports of Mr. Wilkinson in report for 1880, Department of Mines, and to the place awarded to a section of the seam now being worked, and from which the coal for trial was obtained, at the International Exhibition, Sydney, 1879–1880. The coal has also been used in furnaces in Goulburn and at the hoisting machinery

at the Company's mine.

In conclusion, I cannot refrain from the expression of a fear that unless the trials are conducted under the supervision of an officer above suspicion and thoroughly competent no better result will be obtained. Only on the day before the last trial was made, a statement was overheard at a station on the railway that the Berrima coal was to be tried

to-morrow, and the worst engine in the shed would be used.

I can now leave the matter in your hands, and am confident you will take such steps as will secure a thorough, fair, and conclusive trial, seeing that the interests involved are of a serious character and of a public nature.

I have, &c., WM. DAVIES,

This letter is also forwarded to Mr. Scott; a similar one was sent to him a day or two since. An exhaustive trial must be given to this coal, not necessarily in the interests of the Company, but in those of the Department.—C.A.G., 8/12/81. Mr. Webster 13/12/81. Actg. Loco. Engineer.—J.C., 14/12/84. Mr. Webster to note.—J.C., 10/12/81. -W. WEBSTER, 13/12/81.

Memorandum

Memorandum to Mr. W. Webster.

9 December, 1881. Please let me have your report on letter from Mr. W. Davies, Goulburn, dated 23/11/81, attached. JOHN COBB. Report attached.—W. WEBSTER, 12/12/81.

Memorandum from Mr. W. Webster to The Locomotive Overseer.

Sir,

In reply to the attached statement from the Chairman of the Berrima Coal-mining and Railway Company, I beg to state that a communication from the above Company to the acting Locomotive Engineer to the effect that 5 tons of coal had been delivered for trial was sent to me with instructions to arrange for having the coal tested from Picton to Goulburn. I at once inquired from the Station-master at Moss Vale if any of this coal had been received, when he informed me that a quantity of coal, stated to be 3 tons, had been received and would be forwarded to Picton. I at once arranged to have this coal tried by the same engine (No. 42) and the same driver and fireman who had previously tested coal sent for that purpose from the Erith Coal-mine, my reason for so doing being to avoid the very appearance of partiality. I at the same time arranged with the Station-master, Moss Vale, that as soon as I knew if the trial would take place on the Tuesday, I would send through him a communication to the Managing Director Mr. Atkinson, to be by the Station-master delivered to Mr. Atkinson's own man, who would be at Moss Vale Station on Manday marning with milk which communication was duly delivered as be at Moss Vale Station on Monday morning with milk, which communication was duly delivered, as Mr. Swinney, the Company's Engineer, informed me that he received notice at 3 p.m. on Monday, so that it was not altogether by accident that the communication reached Mr. Atkinson in the manner it did, but was sent that way as being the safest and quickest, and if the Engineer received his instructions at 3 p.m. it must have been delivered before "dark," and that there was time to make arrangements is proved by the Engineer, Mr. Swinney, being present in Picton in time for the trial. As regards the trial itself I have nothing to say, as I had not the charge of it, but as regards the weight of train, I may say that the maximum load for this class of engine, as per return supplied January, 1878, is 122 tons.

In reply to the complaint that the pricker was not once used during the journey, I have only to say that it is evident that the gentleman does not understand the subject, for the pricker was there to be used if required, yet every experienced driver knows that the frequent use of the pricker is an evidence of bad firing, and the less frequently it is used the better, as every time it is put into the fire is a waste of

The reflection on the honesty and competency of those under whose supervision the trial was made is an unworthy one, and I trust needs no reply from me.

WILLIAM WEBSTER.

Mr. Webster's explanation I think fully meets the charge that timely notice of the trial was not given. Mr. Webster also sufficiently replies to the statement that the engine was too light. I may add that it was in first-rate condition. It received new boiler in October, 1879, and was recently thoroughly repaired. I regret that Mr. Davies should have thought it necessary to make remarks impugning the integrity and competency of officers of this Branch. I believe there are no more trustworthy men in the Service than inspector Webster and driver John Jones. The latter has many years experience as a first-class driver. For some years past he has always been selected (on account of his peculiar fitness) to make any special test of oil or coal, or for other work demanding particular care and conscientiousness.—John Cobb, Acting Locomotive Engineer, 18/12/81.

No. 17.

Mr. W. Scott to The Chairman of the Berrima Coal-mining and Railway Company, Goulburn.

Department of Public Works, Railway Branch,

Locomotive Engineer's Office, Sydney, 6 December, 1881. I have the honor to request that, with the view of a further trial being made, you will be good enough to deliver at Austermere siding not less than 5 tons of the coal you tender to supply this Department with during next year.

I shall be glad to hear from you when the coal is delivered.

I have, &c. W. SCOTT,

Acting Locomotive Engineer.

Mr. William Davies to The Acting Locomotive Engineer.

Goulburn, 7 December, 1881. I have the honor to acknowledge receipt of your letter dated 6th instant, and conveying a request for me to deliver at Austermere siding not less than 5 tons of coal, with the view of a further trial being made.

The managing director, Mr. Atkinson, has been advised by me of your request, and he will at once

forward the coal. I have, &c.

WILLIAM DAVIES,

Chairman B. Coal and R. Co. (Limited).

Mr. J. J. O. Atkinson to The Acting Locomotive Engineer. Sir, Oldbury, Moss Vale, 10 December, 1881. Referring to your letter marked 81/7,338 to Mr. W. Davies, of Goulburn, and which has been forwarded to me by that gentleman, requesting him to deliver not less than 5 tons coal at Austermere siding, with a view to a further trial, I have the honor to inform you that I have made arrangements for the delivery of that quantity at Moss Vale Station on Tuesday, 13th instant, there being no road to Austermere and our railway line not being completed. I made an application to your Department, in a letter to the Commissioner dated 25th ultimo, for instruction to be given for Mr. Swinney (our engineer) and myself to have permission to be present on the locomotive at the trial, and should feel obliged by your furnishing me with the necessary permits, and advising me of the date when trial will take place, and place and time of departure.

I have, &c.,

J. O. ATKINSON,

J. J. O. ATKINSON, Managing Director, B.C.M. & R. Co.

Mr. Cobb.—W.S. per C.A.N., 13/12/81. Please arrange for this coal to be tested in goods engine between Picton and Goulburn, and inform Mr. Atkinson in time for him and Mr. Swinney to be present. Give me a day's notice in order that I can arrange for driver J. Jones to come to Picton to conduct the trial.—J.C., 18/12/81. Mr. Webster. Trials completed.—W. Webster, 29/12/81.

Driver Jones to Mr. Cobb.

Picton, 21 December, 1881.

I beg to report on the trial of the Berrima Company's coal, tested on engine No. 183 with the

ordinary goods train from Picton to Goulburn, on the 20th instant.

This coal was tested about a month ago, and has improved a little in quality; it burns more lively, and makes more steam and rather less ashes, but it is still unsuitable for these trains through the large amount of ashes it makes, and could not be used alone until it very much improves in quality. It makes so much ashes that we had to knock them out four times during the journey, losing over an hour's actual running time. At the request of Mr. Atkinson (who accompanied us) we used the pricker very freely on one part of the journey, but only succeeded in producing a large amount of clinker and a momentary rise in the steam only.

7	The following	ng shows the consumption, &c. :		•						
							al cons			**
Date.	No. of Engine.			Load.		Tons.		qrs.	lbs.	ibs. per mile.
Dec. 20	183	Picton to Mittagong,	11	waggons and	brake-van	2	12	3	13	72
	•	Mittagong to Bowral,	21	,,						
		Bowral and Moss Vale,	18	,,						
		Moss Vale and Morris siding,	20	,,						
		Morris siding to Marulan,	25	,,	,					-
		Marulan to Towrang,	24	. ,,	•	•				
		· Towrang to Goulburn,	26	,,						
		Ashes made, 12 cwt.	0 0	qrs. 23 lbs. 🛚 🛚 1	Miles run,	81.				

Yours, &c., JOHN JONES.

No. 18.

Mr. S. A. Stephen to The Minister for Public Works.

Sir,

I am interested in a coal mine near Marulan, the quality of which is, I am instructed, equal to any to be obtained from Newcastle, and well adapted for steam purposes, and that the same can be delivered to you at the railway at considerably less cost than the Government has been paying. I therefore have to ask whether the Government will be prepared to take (say) 20 tons on trial, and negotiate as to a contract for the supply of such coal as may be required. An early answer will oblige.

I have, &c.,

S. A. STEPHEN.

Mr. Stephen might be informed that a trial of the coal referred to will be made.—J.L., 4/7/81.

The Commissioner for Railways to S. A. Stephen, Esq.

Sir,

In acknowledging the receipt of your letter of the 1st instant, bringing under attention the coal from your Marulan mine, which you represent to be equal to Newcastle coal and well adapted for steam purposes, and that it can be delivered at the Redfern Station at a price considerably less than that hitherto paid by the Government, and asking whether the Department will take 20 tons of this coal to be tested for locomotive purposes, I have the honor, by direction of Mr. Secretary Lackey, to inform you that if you will deliver 20 tons of your coal, free of cost, a careful test will be made and the result communicated to you.

I have, &c., CHAS. A. GOODCHAP,

Commissioner for Railways.

Memorandum to the Storekeeper.

Locomotive Engineer's Office, Regent-st., Redfern, Sydney, 12 July, 1881.

I shall be glad if the Storekeeper will be good enough to order for trial from Mr. S. A. Stephen—20 tons of coal from his mine near Marulan, as per letter attached, 81–3,979.

The coal is to be delivered at Marulan Station.

R. H. B.

This coal has been ordered.—The Loco. Engineer, A.R., 14/7/81.

Memorandum to Mr. Scott.

Locomotive Engineer's Office, Regent-st., Redfern, Sydney, 12 July, 1881. Mr. S. A. Stephen will shortly deliver at Marulan 20 tons of coal for trial on locomotives. Please make the necessary arrangements for having it tested, and let me have your report.

R. H. B.

Mr. Proctor to have tested.—W. Scott, 14/7/81. Mr. Stephen has not sent this coal for trial on locomotives.—J. Proctor, 3/9/81. Loco. Overseer. Acting Loco. Engineer.—5/9/81, J.C. Did Mr. Stephen inform Inspector Proctor verbally or in writing that the coal was not sent for trial

on locomotives? If the former, I should like to know exactly what was said on the matter; if the latter, then the papers should be attached.—W.S., 12/9/81. Mr. Cobb.

The papers should be attached.—W.S., 12/9/81. Mr. Cobb. Mr. Proctor.—J.C., 12/9/81. I have not seen Mr. Stephen or received any letter from him.—J. Proctor. Acting Loger.—14/9/81. J.C. Mr. Proctor should be attached.—Wr. Proctor. Acting Locomotive Engineer.—14/9/81, J.C. Mr. Proctor should say how he knows that the coal was not sent for trial on locomotives.—W.S., 15/9/81. Station-master informed me that no coal had been received at Marulan for Locomotive Department.—J. Proctor, 16/9/81.

comotive Department.—J. Proctor, 16/9/81. Acting Locomotive Engineer.—J.C., 17/9/81.

The Commissioner to see, in connection with his 81-11,714, returned on 8th inst.—W.S., 19/9/81.

ssioner. Inform Mr. Stephen.—C.A.G., 26/9/81. Mr. Stephen, 29/8/81.

The Commissioner for Railways to S. A. Stephen, Esq.

Department of-Public Works, Railway Branch,

Sir. Sydney, 29 September, 1881.

In further reference to your letter of the 1st July last, relative to the coal from your Marulan mine which you pronounced to be equal to Newcastle, and well adapted for steam purposes, and asked whether the Department would take 20 tons to be tested, I have the honor to inform you that a reply was forwarded to you on the 7th of the same month, stating that if you would deliver 20 tons of your coal free of cost a careful test would be made and the result communicated to you, but from reports received it appears that up to the present time no coal from your mine has been sent for trial on locomotives.

CHAS. A. GOODCHAP. Commissioner for Railways.

Mr. S. A. Stephen to The Commissioner for Railways.

Sir, Sydney, 3 October, 1881. I have the honor to acknowledge the receipt of your letter of the 29th ult., respecting the coal from the Marulan mine.

As the proprietors are desirous that the sample of coal to be tested by the Government should be of fair average quality, they have delayed supplying you with the 20 tons until they have a larger quantity in stock. I hope that arrangements will be perfected in a short time to enable us to supply an unlimited quantity, and I will then address you respecting the sample.

I am informed by the Manager that the coal at bank at present time would be admirably suited for the working of your pumping stations, but that it would not be a fair quality to be tried in the locomotives. I have, &c.,

S. A. STEPHEN.

Locomotive-Engineer to see.—D.V., 8/10/81. Has Mr. Stephen yet supplied any coal for trial? Commissioner.—W.S., 1/2/82. Seen.—C.A.G., W.S., 27/1/82. No.—J. Proctor, 30/1/82. The Commissioner.—W.S., 1/2/82.

No. 19.

Memorandum from Mr. W. Webster to Locomotive Overseer.

Government Railways, Locomotive Engineer's Branch,

Sir, Picton Station, 23 February, 1882. When the Berrima coal was brought into use at the beginning of this month, the supply of coal from the Western mines very nearly stopped, six trucks only being received in ten days instead of two trucks per day, so that a larger proportion of Berrima coal than one-half had to be used, and that caused more delay than would have occurred otherwise; but so long as one-half of the coal used is from the Berrima mine, it will be necessary that time should be allowed at Mittagong for cleaning the fire, and then it is not certain but that there will be further delay from the same cause.

WILLIAM WEBSTER.

Acting Loco. Engineer.—J.C., 24/2/82. Traffic Manager to see, and please return.—W. Scott, 27/2/82. Seen. Should not the Commissioner's attention be called to the quality of the Berrima coal? Perhaps it may improve as the Company gets further into the seam.—W. V. Read, per D.K., 4/3/82. Mr. Scott. Commissioner.—W. Scott, 8/3/82. Write to Company to say that, in justice to the interest they are developing, they should see that only the best coal is supplied, as if it does not improve in quality it will have to be abandoned.—C.A.G., 15/3/82.

The Commissioner for Railways to Mr. W. Davies.

Sir, Department of Public Works, Railway Branch, Sydney, 15 March, 1882. I have the honor to inform you that complaints have been received from the Locomotive Branch that the quality of the coal supplied by your Company has on several occasions caused considerable delay to the trains on the Great Southern Railway line. I need hardly point out to you that it is of the utmost importance that the trains should be run with punctuality; and, in justice to the interest you are developing, it is desirable that you should see that only the best coal is supplied, for should it not improve in quality its use by this Department will have to be abandoned.

I may add that I should regret to have to take any such measure, but if complaints continue to be received of delays in the train service I shall be compelled, in the interests of the Department, to take the step indicated. I have, &c.

CHAS. A. GOODCHAP, Commissioner for Railways.

Mr.

Mr. W. Davies to The Commissioner for Railways.

Berrima Coal-mining and Railway Co. (Limited), Goulburn, 17 March, 1882. I have the honor to acknowledge receipt of your letter dated the 15th instant, informing me that complaints have been made of the quality of the coal supplied by my Company.

I can only account for this by supposing some carelessness at the colliery; and I proceed by mail train to-night to make inquiries, which will I trust have the effect of removing all cause of complaint. I have, &c.,
W. DAVIES,

Chairman.

Mr. W. Davies to The Commissioner for Railways.

Berrima Coal-mining and Railway Co. (Limited), Goulburn, 21 March, 1882. I have the honor to inform you that, in accordance with promise, I visited the colliery and inspected the coal being obtained. Generally the coal seemed very good; but in order that no further complaint might be made, I directed that a man should be placed in the truck while loading and carefully

exclude all doubtful pieces

I would respectfully direct your attention to the fact, that with the same quality of coal now being supplied the trials were made, and since then frequent trains have been run to time. Only to-day, while Mr. Cooper, Secretary to the Company, was conversing with your Mr. Watts, a goods train arrived at

Goulburn Station to time.

It may be that owing to one or two conditions necessary to the successful using of this coal not having been attended to the complaints have arisen. One of these is the width of the furnace-bars apart. I understand the width of the spaces is 1 inch, while some are only \(\frac{3}{4}\)-inch; and I am informed by a recent letter from England that in some locomotive engines there the bars are as much as 13 inch apart. There are, I believe, in some of the American engines shaking bars, and it might be found advantageous, in view of the saving in haulage and cost of coals, to have some engines running on the Southern line fitted with this modern appliance. The second condition is that the fire should be stirred with a pricker; and from our own experience in the little engine on our railway, and in the stationary engine at the mine, if these two conditions are complied with there will be small cause for complaint.

I cannot but fear that some of the men may find in their new coal a convenient cover for other Certain it is that trains failed to keep time before this coal was used, and will do so, I

apprehend, should its use be discontinued.

My co-Directors and I have so much confidence in your rectitude that we are sure you will not allow indiscriminate complaint to injure an enterprise of such moment; and while we will use every means within our power to secure the sending in of coal without any admixture of bands, we rely on your giving such instructions as will ensure the use of right methods in burning the coal.

I have, &c., W. DAVIES.

Forward to the Locomotive Engineer. I wish every reasonable effort made to make this coal a successful fuel for our locomotives. I have no doubt it will prove to be so, if the Company be careful to supply us with the best, and the drivers use it well.—C.A.G., 22/3/82.

Mr. W. Webster to Locomotive Overseer.

Picton, 4 April, 1882. Sir,

In reference to the attached letter from the Chairman of the Berrima Coal Company, I beg to state that, in accordance with instructions, I have been using this coal, mixed in equal proportions with coal from the Western Collieries, on engines working ordinary goods trains; but the result has not hitherto been such as to warrant its use in even small proportions on passenger engines, and the delay caused in having frequently to clean the fire was found to be such that I have had to use it in much smaller proportion on

engines running fast goods trains, such as No. 15 down and No. 6 up.

The average width of space between the fire-bars in engines running in this district is 1 inch, which has been found sufficient for the coal from the Western mines, and it is matter for consideration whether it is worth while incurring the expense and inconvenience of altering the fire-grates to such a width that ; they would be unsuited for use in any other district, for the sake of bringing into use an inferior coal, which at its present price does not compete successfully with the Western coal in Picton (as I have previously shown), for while the cost including carriage is some 5 per cent. less, the consumption is fully 10 per cent.

If this coal is to be brought into general use for goods engines, it will not only be necessary to provide "shaking" fire-bars, but it will also be necessary to provide ash-pits at all watering places, and dispense with fast goods trains, as not only is there delay in cleaning out the ashes, but the coal being a slower burning coal than that from the Western mines requires more time on the journey.

It is no doubt true that at times "trains failed to keep time ere this coal was used," but as the cause of delay is invariably shown on the guards' time and occurrence sheet, it can be seen what has been the cause of such delay, unless these are the men referred to in the unworthy insinuation as finding "a

convenient cover for other causes of delay."

*See page 33)

As regards the instructions given for burning this coal, it is difficult to understand why a "compact bituminous coal" necessarily requires such very wide bars, or should require so much "stirring," which is held by all competent locomotive engine-men to be an evidence of either bad fuel or bad firing.

WILLIAM WEBSTER.

Attach previous reports, and if any subsequent. Done.

The following is a copy of the instructions issued re burning Berrima coal:—This being compact bituminous coal, it is necessary that the furnace-bars be $1\frac{1}{2}$ to $1\frac{1}{2}$ inch apart, and that the fire be occasionally stirred with the pricker to prevent the coal from caking. In lighting up, the large pieces should be first put on, then the smaller ones. By attention to these simple instructions the coal will burn well and throw out a great heat.

Mr. William Allan to The Locomotive Overseer.

Sir. Goulburn, 26 April, 1882. Re Berrima coal, I beg to report for your information that I have been using this coal according to instructions, and the result has been very unsatisfactory. There is scarcely one train that is not detained through this coal, owing to have to clean the fire out at almost every staff station. On special live stock trains I have had to put on \(^3\) Bowenfels, or the mails and other trains would be detained for a considerable time. I have tried this coal on several engines with seven or eight fire-bars out, which leaves a space of about 2 inches. The only good that this did was that it was easier to knock down the fire, the engine did not steam any better, as the coal seems to run over the bars so much that all the stirring up will not been the bars along. They had a good deal of experience on the continue at home and They will not keep the bars clear. I have had a good deal of experience on the engines at home, and I have never seen any fire-bars any wider than 5 of an inch, and I think that will be found to be the very outside, as the majority of the engines in England are from \$\frac{3}{8}\$ to \$\frac{1}{2}\$-in. fire-bars.

If this coal is to be continued to be used as at present, the time-table now in use will have to be altered, as goods engines have to run so fast down the banks to make up the time lost by cleaning out fires, and besides there will have to be hose fitted up at every convenient place where water can be got, as engines are often caused to run hot through the dust getting into the bearings.

As regards the directions for using this coal, they have been strictly adhered to, and the result has been that the engines have come to a stand-still, and it has been found better to allow the driver and fireman to use their own judgment in the matter of using this coal.

WM. ALLAN.

No. 20.

Memorandum to Mr. Hackett, Harden.

Government Railways, Locomotive Engineer's Branch, Redfern Station, 2 May, 1882. Are you adhering to the instructions respecting the use of Bowenfels and Berrima coal in equal proportions; if not, why?

Memorandum to Locomotive Overseer.

Government Railways, Locomotive Engineer's Branch,

Sir, Harden Station, 3 May, 1882. I have not strictly adhered to the instructions of the Department in ordering equal quantities of Bowenfels and Berrima coal. My reason for the slight departure is, there are several mail engines that take Bowenfels coal here, besides what is consumed by the bogie No. 126, stationed at Harden, and if not replaced by ordering occasionally more of the latter than the former coal, I should be in time run out of Bowenfels coal altogether.

In all other respects I am adhering to instructions, that is, by compelling an equal quantity to be

taken on all goods engines.

Below is the quantity of coal ordered, and the quantity received during the month of April, 1882 :-

							Uraer	ea.
							Bowenfels.	Berrima.
veek	trucks	• • •	•••				18	` 12
,,	"	•••		•••	•••		6	6
,,	"	• • •	•••	•••	•••		12	6
"	"	•••	•••	. •••	•••		${\bf 12}$	12
	•						· ·	
						,	48	36
ntity	havianar						20	9.0
uoroy	LCCCITCU	•••	•••	•••	•••	•••	90	36
t trud	cks		•••				18	
	•							
	", ntity))))))))	" " " "	" "	" "	" "	" "	Bowenfels. 18 18 18

It will be seen by the above return that I have had more Berrima than Bowenfels coal; the return in tons is:-

Berrima	•••	•••	•••	•••	•••	184 14 0
Eskbank Vale of Clwydd }	····	•••	•••	•••	•••	177 7 0
Excess of Berrima		•••		•••	··· .	7 7 0 JAMES HACKETT.

*Memorandum to Locomotive Overseer.

Government Railways, Locomotive Engineer's Branch,

Sir, Picton Station, 23 February, 1882. I beg to submit for your consideration the question whether it is worth while attempting to use the Berrima coal at Picton. The price paid for the Berrima coal delivered at Austermere is 13s. per ton, the carriage from there is 3s. 6d., making the cost at Picton 16s. 6d. The consumption of this coal is found to be about 10 per cent. greater than that of the Bowenfels, the cost of which at the mine is 7s. per ton. The carriage from there to Picton is 10s. 3d. per ton, which makes the cost of that 17s. 3d., or 9d. per ton. The carriage from there to Picton is 10s. 3d. per ton, which makes the cost of that 17s. 3d., of 3d. per ton more than the Berrima; but taking into consideration the greater consumption of the latter, it makes the Bowenfels coal the cheaper by about 5 per cent., without taking into consideration the additional labour and delay of trains through being compelled to clean the fire so frequently on the journey.

WILLIAM WEBSTER.

Mr. Webster, I should like to confer with you on this matter when you are next in Sydney.—
Thos. Middleton, 25/4/82. Saw Mr. Webster herein on the 8/5/82, and I think every effort is used to make this coal a success.—J.M., 17/5/82. Loco. Engineer. 294-E

No. 20.

Railway Department, Office of Engineer for Existing Lines, Sydney, 28 February, 1882. Memorandum to Storekeeper.

A TRUCK of natural coke will be required at Campbelltown for Tramway use by Tuesday, 7th March; A TRUCK of natural coke will be required at Campbellown to Lamber to Camden when the engine goes up.

GEO. DOWNE.

P.S.—If you have any contracts for coal that can be delivered cheaper it may be used.

GEO. DOWNE.

I will in this case order two trucks of Bowenfels coal, as being by far the simplest expedient. natural coke would have to be carted to the station and then be loaded into trucks, which would make it far more troublesome and equally expensive. I notice that this memo. refers to two trucks, but it does not appear that any arrangement has been made for a continuous supply for working the line.—A.R., 1/3/82. Mr. Downe.—G.C., 2/3/82. Mr. Cowderv.

A definite quantity cannot yet be fixed; if the storekeeper will arrange for five trucks every fortnight—that is three trucks within the first week of opening, and two trucks the second, and so on alternately, I think it will meet the requirements.—Geo. Downe, 2/3/82. Mr. Richardson.—G.C., per G.L., 4/3/82. Will Mr. Scott oblige me by his opinion as to whether or not Berrima coal would be likely to answer for the tramway work, Campbelltown to Camden.—A.R., 6/3/82. Acting Loco. Engineer. I think this matter had better be referred to Mr. Cowdery.—W. Scott, 8/3/82. Storekeeper.

I am quite aware that this is a matter affecting Mr. Cowdery's department; but Mr. Cowdery has,

I imagine, had no opportunity whatever of testing the quality of the Berrima coal, and this is the reason why I asked Mr. Scott to favour me with his opinion after having made a trial of this coal for railway locomotive purposes. I feel sure Mr. Cowdery would also feel obliged for this information. to see if it will be cheaper to get Berrima than Bowenfels coal.—A.R., 9/3/82. Mr. Scott.

Please see my minute of this day's date.—W.S., 13/3/82. Storekeeper.

Memorandum to the Storekeeper.

Locomotive Engineer's Office, Regent-street, Redfern, Sydney, 13 March, 1882. Storekeeper, 82/1,401, Loco. Engrs., 82/1,266.

THE result of the trial of the Berrima coal proved that it could not be used for railway locomotives hauling heavy loads. It was therefore found necessary to mix Bowenfels coal with it. As however the circumstances under which the coal would be used on the trainway, as compared with the railway, are so different, I think it would be better, as I before stated, to refer the matter to Mr. Cowdery, with the view of having a trial made with special regard to the adaptability of Berrima coal for tramway purposes.

W. SCOTT.

Forwarded to Mr. Cowdery for his information, and for any action which he may like to take.-A.R., 14/3/82. The Engineer for Existing Lines. Mr. Downe.—G.C., 15/3/82. Better have two trucks sent, one for Campbelltown and one for Camden. I will have them tried, and report accordingly. GEO. DOWNE, 17/3/82.

Telegram from Moss Vale Station, addressed to Commissioner for Railways.

WE can supply Campbelltown and Camden branch line with coal at 7s. per ton at Austermere. Shall I send for trucks; if so, how many?

J. J. O. ATKINSON, Managing Director.

Mr. Cowdery for report.—From whence is it proposed to obtain the coal for this tramway; I think we should use southern coal if it is economical.—C.A.G., 11/3/82. Mr. Downe, for report.—G.C., 13/3/82. Better let me have two trucks for trial.—Geo. Downe, 16/3/82. Commissioner to see.—20/3/82. Write to Company to send down 10 tons for trial.—C.A.G., 23/3/82.

D. Vernon to J. J. O. Atkinson, Esq.

Department of Public Works, Railway Branch, Sydney, 24 March, 1882. Referring to your telegram of the 10th instant, offering to supply the tramway line from Campbelltown to Camden with coal from your Company's mine at 7s. per ton, I have the honor to request that you will be good enough to have 10 tons sent to Campbelltown in order that its suitability for use in I have, &c., D. VERNON, the tramway engines may be tested.

pro Commissioner for Railways.

Mr. Cowdery.—G.B., B.C., 25/3/82. Mr. Downe to see.—G.C., 27/3/82. I should like Seen. to be informed when they are going to deliver. Geo. Downe, 28/3/82. Commissioner.—G.C., 29/3/82.

Memorandum to the Storekeeper.

Railway Department, Office of Engineer for Existing Lines, Sydney, 18 March, 1882. I was at Campbelltown last night and found the engine without coal. It appears you sent a truck forward but it overran its destination; by wiring they managed to get it down just in time to prevent a doubt know by thom this work stoppage of traffic. Kindly have the number of trucks asked for sent regularly, to prevent a break. Coal stages are now erected at both places. Do you empty the contents of trucks into the stages, or is it a charge appertaining to the locomotive branch? if it belongs to me I will arrange on hearing from you. GEO. DOWNE.

Before making any arrangement with the Bowenfels mine for a permanent supply, I would like to f the Berrima coal is likely to suit. I referred this matter to Mr. Cowdery on the 16th instant. know if the Berrima coal is likely to suit. Mr. Downe, 24/3/82.

Mr. Downe to see. The coal will have to be unloaded by your men.—G.C., 23/3/82. -Geó. DOWNE, 24/3/82.

J. J. O. Atkinson to The Commissioner for Railways.

I have the honor to inform you that, in compliance with request contained in letter from your Department, Ms. 82–944, I have given instructions for two trucks coal to be forwarded to Campbelltown for the Campbelltown and Camden Tramway Line, and trust it will be found suitable for your purpose. I may inform you that we burn this coal in our own locomotive without any admixture of other coal and that it burns splendidly, but being bituminous requires a judicious use of the pricker, and the furnace-bars should be rather wider apart than for the splint coal.

I have, &c., J. J. O. ATKINSON, Managing Director, Berrima Coal Company.

Mr. Cowdery.—B.C., 31/3/82, G.B. Mr. Downe to see.—G.C., 3/4/82.

Seen, and instructions issued to ascertain if this coal can be used, and with what result. Details of trial shall be forwarded when completed.—Geo. Downe, 3/4/82. Commissioner.—G.C., 6/4/82.

Resubmit end of April. Resubmitted, 1/5/82. Mr. Cowdery. B.C., 2/5/82, G.B. Mr. Downe.

G.C., 4/5/82.

Minute of Commissioner.

From what source is the coal for Camden Tramway being obtained, at what price, &c.? If the Berrima Company will deliver at 7s. a ton, will it not be economical to take it—delivery at Austermere?—C.A.G., 31/5/82. Storekeeper, B.C.

Camden Tramway supplied with Lithgow coal, cost at Lithgow, 8s. 6d., at Campbelltown, 17s. 1d. Berrima coal received at Austermere at 7s. would cost at Campbelltown 12s. 3d. Before any arrangement is made with Berrima Co., it would be well to get Mr. Downe to report upon the relative value of the two coals, &c.—H.C., pro Storekeeper. Commissioner, 1/6/82.

I have not received any report upon the coal used on the Camden Tramway. There is an apparent saving of 4s. 8d. per ton in using Berrima coal. Mr. Scott, who has now charge of the Locomotive Branch of Camden line, will please report.—C.A.G., 5/6/82.

As the papers notifying that the charge of this line is to be handed over to this Department only reached me this morning, I presume Mr. Downe will be able to supply the information required.—W. Scott. 7/6/82, The Commissioner. Mr. Cowdery, B.C., 7/6/82.—G.B. Mr. Downe, for report.—G.C., 9/6/82. Report herewith.—G.C., 12/8/82. Commissioner.

Geo. Downe to The Engineer of Existing Lines and Tramways.

Sir,

Attached are papers showing the relative values of Berrima and Lithgow coals for steaming purposes on motors running on the Camden line.

It will be found the Berrina has been worked out at two different prices per ton, one at 12s. 3d. per ton, assuming it can be bought for 7s. at Austermere, as per Commissioner's minute of 31/5/82, and the other at 18s. 3d., the price actually charged for that used on the trial; the Lithgow has been taken at 17s. 1d., present price at Campbelltown.

It was found on trial that the Lithgow coal maintained steam easily; was fairly clean; its consumption was 28 lbs. per train mile, and cost 2.56d. per train mile.

The Berrima coal sent for trial was found to be very dirty, could only be worked by having a very light quick fire, and with frequent use of the blower; it produced a large proportion of ashes; the consumption was 40.25d. lbs per train mile, and cost 2.64d. per train mile at 12s. 3d. per ton and 3.93d. per train mile at 18s. 3d. per ton.

The quantity in each case included the amount required for lighting up.

It will be seen the cost per train mile of Berrima coal at 12s. 3d. per ton is 2.64d. against 2.56d. of Lithgow; and this, considering the extra stoppage of thirty minutes on the Berrima trial makes the cost about the same in each case.

If the seam of Berrima coal should improve in quality, and could be supplied at 12s. 3d. per ton, the cost to the Department would be about equal in each case.

TRIAL of Berrima Coal.—Results of trial run on the Camden line.

No. and maker of engine used during trial, Baldwin.

Do. car, Hudson.

No. of trips from Camden to Campbelltown and back, four.

Distance actually run with passengers, 32 miles.

Time actually running with passengers, including stoppages, 40 minutes. Time occupied in stoppages on journeys, 6 minutes.

Distance shunting at termini, I mile.

Time occupied in shunting at termini, 45 minutes.

Time standing still at termini, $3\frac{1}{2}$ hours.

Total time of trial, 7 hours.

Average boiler pressure during trial, 105 lbs.

Total number of passengers carried, 68.

Weight of passengers carried (15 pass. = 1 ton), 36 tons.

Total dead weight hauled (engine and car $18\frac{1}{2}$ tons), 604 tons.

Gross load hauled, 640 tons.

Kind of fuel used, Berrima coal.

Weight do. 1,288 lbs.

Consumption of fuel per train mile, 40.25 lbs.

Do. do. per mile, running and shunting, 39.03 lbs.

Do. do. per ton gross load, 2.01 lbs.

Do. do. per hour, 184 lbs.

GEO. DOWNE.

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Average speed run between stoppages (per hour), 14·117 miles.
       Cost of fuel consumed, 7s. 01d.
                     per train mile, 2 64d.
             Do.
                     per mile, running and shunting, 2.56d.
             Do.
             Do.
                    per ton gross load, 132d.
                    per hour, 12.071d.
             Do.
                       Trial of Berrima Coal.—Results of trial run on the Camden line.
       No. and maker of engine used during trial, Baldwin, No. 6 engine.
                             car, Hudson Brothers.
               Do.
       No. of trips from Camden to Campbelltown and back, four.
       Distance actually run with passengers, 32 miles.
       Time actually running with passengers, including stoppages, 40 minutes.
       Time occupied in stoppages on journeys, 6 minutes.
       Distance shunting at termini, 1 mile.
       Time occupied in shunting at termini, 45 minutes.
       Time standing still at termini, 3\frac{1}{2} hours.
       Total time of trial, 7 hours.
       Average boiler pressure during trial, 105 lbs.
       Total number of passengers carried, 68.
       Weight of passengers carried (15 passengers = 1 ton), 36 tons. Total dead weight hauled (engine and car 18\frac{1}{2} tons), 604 tons.
       Gross load hauled (engine, car, and passengers), 640 tons.
       Kind of fuel used, Berrima coal.
       Weight of fuel used, 1,288 lbs.
       Consumption of fuel per train mile, 40.25 lbs.

Do. per mile running and shu
                               per mile running and shunting, 39.03 lbs.
                               per ton gross load, 201 lbs.
                 Do.
                               per hour, 184 lbs.
                 Do.
       Average speed run between stoppages (per hour), 14:117 miles.
       Cost of fuel consumed, 10s. 6d.
                     per train mile, 3.93d.
            Dο.
                      per mile running and shunting, 3.81d.
            Do.
            Do.
                      per ton gross load, 196d.
                      per hour, 1s. 6d.
            Do.
        Engine No. 6.—Trial of Bowenfels coal.—Result of trial runs Camden line, 28 April, 1882.
       No. and maker of engine used during trial, Baldwin, Loco. Works.
                             car, Hudson Brothers.
       No. of trips from Camden to Campbelltown and back, four trips.
       Distance actually run with passengers, 32 miles.
       Time actually running with passengers, including stoppages, 40 minutes.
       Time occupied in stoppages on journey, 5 minutes. Distance shunting at termini, 1\frac{3}{4} mile.
       Time occupied in shunting at termini, 1 hour (four trips).
       Time standing still at termini, 2\frac{3}{4} hours.
       Total time of trial, 6h. 25min.
        Average boiler pressure during trial, 105 to 110 lbs.
Total number of passengers carried, 62.
        Weight of passengers carried (passengers 112 lbs. each), 33 tons.
       Total dead weight hauled (engine and car 18½ tons), 604 tons.
       Gross load hauled (engine, car, and passengers), 637 tons. Kind of fuel used, Bowenfels coal.
        Weight of fuel used, 896 lbs.
        Consumption of fuel per train mile, 28 lbs.
                                per mile running and shunting, 26.54 lbs.
                 Do.
                 Do.
                                per ton gross load, 1.406 lbs.
        Do. per hour, 139-75 lbs.

Average speed run between stoppages (per hour), 13,714 miles.
        Cost of fuel consumed, 6s. 10d.
                                  per train milé, 2.56d.
                  Do.
                                   per mile running and shunting, 2.48d.
                   D٥.
                   Do.
                                  per ton gross load, 128d.
                                   per hour, 12.78d.
Inform Company that until their coal improves, i.e., gets freer from those impurities which make ash, it seems to be more economical to use Bowenfels coal for the Camden Tramway.—C.A.G., 15/8/82.
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The Commissioner for Railways to The Secretary, Berrima Coal Company.

Department of Public Works, Railway Branch, Sydney, 21 August, 1882. Sir, Referring to the proposal made to use Berrima coal on the motors running on the Camden Tramway Line, I have the honor to inform you that until your coal improves, i.e., gets freer from those impurities which make ash, it seems to be more economical to use Bowenfels coal for the Camden Tramway. I have, &c.

CHAS. A. GOODCHAP,

Commissioner for Railways.

No. 21.

Extracts from Guard's Time and Occurrence Sheets.

No. 3 down goods train Picton to Goulburn, 4/2/82.

Twenty minutes lost by locomotive at Mittagong cleaning fire; ten minutes lost by loco. between Marulan and Goulburn. For Mr. Scott's information.

W. V. READ,

Actg. Loco. Engineer.

per D.K., 16/2/82.

Mr. Cobb, 17/2/82. Mr. Proctor.—J.C., 17/2/82. This was caused by using Berrima coal.—J. Proctor, 18/2/82. This coal was put on at Picton.—Mr. Webster, J.P., 22/2/82.

Extracts from Guard's Time and Occurrence Sheets.

No. 4 up goods Harden to Goulburn, 8 Feb., 1882.

Fifteen minutes lost by loco. at Gunning oiling and cleaning fire; five minutes lost at Breadalbane; loco. ten minutes lost between Breadalbane and Goulburn getting up steam before going over Cook's cutting bank.

JAMES PAULL,

Guard.

Loco. Inspector to see.—A. Crawford, 11/2/82. Caused by using Berrima coal.—J. Proctor, 20/2/82. The Manager to see.—A. Crawford. Write Loco. Engineer and ask if these delays are likely to be of frequent occurrence, as if so, the time-table would require to be re-arranged. The through goods should not be required to use this coal.—W.V.R., 22/2/82. Written, 23/2/82. In a week.—D.K., 23/2/82. There are several other reports of the same kind (trains delayed owing to bad coal); attach them.—D.K., 23/2/82.

Extract from Guard's Time and Occurrence Sheet.

Up goods Harden to Goulburn, 9 Feb., 1882.

Twenty-five minutes lost at Yass, detained by loco., ten minutes cleaning fire and fifteen minutes shunting; thirty minutes lost at Gunning, fifteen minutes by loco., cleaning fire, and fifteen minutes shunting.

J. DOYLE.

Guard.

Loco. Inspector to see.—A. Crawford, 11/2/82. Caused by using Berrima coal.—J. Proctor, 20/2/82.

Extract from Guard's Time and Occurrence Sheet.

No. 3 down goods, Picton to Goulburn, 4/2/82.

Twenty minutes lost by loco. at Mittagong cleaning fire; ten minutes lost by loco. between Marulan and Goulburn.

ARTHUR JACOBS,

Guard.

Mr. J. Proctor.—A. Crawford, 9/2/82. Mr. Webster.—J. Proctor, 10/2/82. I know nothing of this; it was run by a Goulburn engine.—W. Webster, 13/2/82. Time lost with Berrima coal.—J. Proctor, 13/2/82. The Manager to see.—A. Crawford, 14/2/82. Inform Actg. Loco. Engineer, 15/2/82. Informed, 16/2/82. In a fortnight.—D.K., 16/2/82.

Memorandum to Inspector Crawford.

Sir,

Government Railways, Picton Station, 22 February, 1882.

I beg to report for your information, that No. 65 special was one hour late leaving Goulburn,
35 minutes waiting at Bundanoon for No. 27 down mail, 45 minutes late arriving at Mittagong.

Your obedient servant,

DANIEL RAY.

Memorandum to Inspector Crawford.

Government Railways, Goulburn Station, 21 February, 1882.

Live stock special 48 minutes late into Goulburn, time lost by loco.

W. J. PETTY,

Guard.

Loco. Inspector.—A. Crawford, per A.A., 23/2/82. Mr. Close.—J.P., 25/2/82. Driver R. Stuart ran this train, engine 100. Please report—J.C. 26/2/82. Mr. Proctor. Should have been 21st engine. Tubes leaking, and Berrima Coal.—J. Proctor, 27/2/82. The Manager to see.—A. Crawford, 1/3/82.

No. 22.

Minute of Commissioner.

How are we receiving coal from Berrima Company ? I am informed that we are only ordering about half the contract quantity. Mr. Richardson will please explain.

C. A. G., 10/5/82.

This coal is ordered by the Locomotive Department each week. It is a fact that nothing like the contract quantity is now being or has at any time been ordered. At first the Company were glad that this should be the case and made a request that they should not be pressed to supply the full quantity.

should be the case, and made a request that they should not be pressed to supply the full quantity.

I am not aware that this request has been countermanded; at the same time I have no idea that this is the reason for the continued ordering of so small a quantity, for I had been informed, though unofficially, that the coal was not approved of, and that a larger quantity of Bowenfels coal was required to mix with it than was at first anticipated; and I was under the impression that this had been reported to the Commissioner.—A.R., 12/5/82. The Commissioner.

Locomotive Engineer for report.—B.C., 20/5/82., C.A.G.

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As I was anxious to give the coal a fair trial, I deferred reporting upon it until the works became more developed, when I was in hopes it would improve, and I still think it will. I forward he extracts from reports received reflecting on its quality, for your information.—W. Scott, 1/6/82. I forward herewith Commissioner.

Recapitulation showing trains delayed through using Berrima coal.

No. 15 down goods, Picton to Goulburn, 35 minutes lost between Picton and Mittagong. Bad coal

7-2-82 No. 25, down goods, Picton to Goulburn; fifteen minutes lost at Mittagong. Raking out fire-box.

8-2-82. No. 4, up goods, Harden to Goulburn; thirty-five minutes lost. Cleaning out fire-box at Binalong, Yass, Gunning, and Breadalbane.

9-2-82 No. 3 down goods, Picton to Goulburn; twenty minutes lost at Mittagong. Raking out fire-box.

11-2-82. No. 25 down goods, Picton to Goulburn; fifteen minutes lost between Picton and Bargo through having insufficient steam. Ten minutes at Bargo, driver getting up steam. Thirty-five minutes at Mittagong, cleaning out fire-box. Inspector Webster states:—In future fifteen minutes will be required by all goods engines to clean fire at Mittagong.

3-3-82.

No. 36 up goods, Harden to Goulburn; fifteen minutes lost between Gunning and Breadalbane. Cleaning out fire-box at Fish River.

No. 25 down goods, Picton to Goulburn; forty minutes lost between Mittagong and Goulburn. Bad coal. 3-4-82.

5-4-82. No. 36 up goods, Harden to Goulburn; thirty-two minutes lost. The coal was so bad the driver had to clean fire six times between Harden and Goulburn.

No. 7 down goods; thirty-eight minutes lost between Picton Lakes and Mittagong. 8-4-82. Bad coal.

No. 26 up goods, Harden to Goulburn; fifty-eight minutes lost-twenty-eight at Yass, 29-4-82. and thirty between Gunning and Breadalbane. Bad coal.

No. 25 down goods; seventeen minutes lost at Barber's Creek. Raking out fire-box. Up Special, Live Stock train; thirty-five minutes late into Goulburn. Time lost between 4-5-82. 14-5-82.

Bowning and Goulburn cleaning out fire-box.

2nd Division of No. 27 Mail, Goulburn to Junee; ten minutes late into Junee; bad 23-4-82.

coal. The engine (No. 91) had been shunting in Goulburn yard and was using Berrima coal, and a small quantity of this coal was left in the bunker before being filled with Bowenfels coal. W. SCŎTT

If Mr. Scott will take his memory back to the time when the Lithgow coal was first introduced, he will find that the engine-drivers, who are always loath to make a change, reported in like manner of the Lithgow coal, and made the same excuses for the delay of their trains. The chemical analysis of the Berrima coal is so good as to prove beyond all doubt that it is really a good coal, and when prejudice is overcome, and perhaps the lower deposits are reached (though the former and not the latter is at the bottom of the complaints in a great degree) we shall hear no more of the unsuitability of the coal.

The coal may require different treatment. To make it most effective may require to have an alteration of the fire-bars, but, in view of the economy which will result in the use of this coal, every reasonable expense must be incurred to make it serviceable before I shall be able to consent to its being abandoned. C.A.G., 5/6/82.

Noted.—Everything possible will be done to attain the object sought.—W. Scott, 6/6/82. The Commissioner. Seen.—C.A.G., 9/6/82. Storekeeper to see.—G.B., B.C., 12/6/82. Seen.—A.R., 13/6/82.

No. 23.

Mr. A. Armstrong to The Commissioner for Railways.

Land Agency Office, 26, Bridge-street, Sydney, 25 July, 1882. I have the honor to make application for a test to be made of coal recently discovered near Sir, Meryla Platform, Great Southern Railway.

The seam has been opened by a Company formed for the purpose of securing the land and proving its mineral capabilities, and a tunnel has been driven 100 feet into a seam of 11 feet 4 inches thick, the quality of which appears, as far as open-air burning can prove, to be of superior quality.

Arrangements will be made to supply a quantity for testing wherever you may request at any station between Sydney and Moss Vale.

Experts in coal have reported the coal discovered to be fully equal to that taken from the best Newcastle seam. Consequently, I respectfully submit that a full and perfect test might with propriety be allowed, in the interests of both your Department and the general public.

I have, &c., A. ARMSTRONG. I have no objectian to the coal being tested as proposed.—C.A.G., 10/8/82. Inform Mr. Armstrong.—12/8/82. Acting Locometive Engineer, B.C., 14/8/82.—G.B. This shall receive most careful attention.—T.M., 17/8/82. The Commissioner. I beg to suggest that the sample be sent to Sydney, so that I may give it my personal attention.—T.M., 31/8/82.

The Commissioner for Railways to A. Armstrong, Esq.

Śir, 12 August, 1882. With reference to your letter of the 25th ultimo, asking that a test may be made by this department of coal recently discovered near Meryla Platform, Great Southern Railway, I have the honor to inform you that there will be no objection to the coal being tried as requested.

I have, &c.,
C. A. GOODCHAP, GOODULAL, Commissioner for Railways. The

The Commissioner for Railways to A. Armstrong, Esq.

29 August, 1882.

With further reference to your letter of the 23rd ultimo, asking that a test may be made by the Department of coal recently discovered near Meryla Platform, Great Southern Railway, I have the honor to request that you will forward any sample you may have to submit to the Railway Station, Redfern. I have, &c.,

CHAS. A. GOODCHAP,

Commissioner for Railways

. Locomotive Department, Redfern, 9 September, 1882.

Driver John Cook, engine No. 92, 7.55 a.m., pass., Sydney to Picton, reports.—2/9/82.

"The trial coal (Mr. Black's) 22 cwt., received at Sydney, proved to be of very inferior quality, and totally unfit for locomotive purposes, in consequence of which I had to leave my engine No. 92 at Picton, and take the pilot engine No. 89, causing a delay of forty minutes to my train."

Please see Driver John Jones' report.—J.C., 9/9/82.

This coal has not turned out well. What I saw looked a very fair specimen, and Mr. Cobb expressed himself as having no doubt of its success the day previous to its being tried in the Moss Vale tourists' train. Mr. Black, who rode on the engine, expressed himself satisfied with the trial. I think the fire-bars I am preparing will make this and also the Berrima coal a success.—Thos. Middleton, 14/9/82. The Commissioner.

Mr. J. Jones to Mr. Cobb.

Penrith, 7 September, 1882.

I beg to report on the trial of the Sydney Co. coal from Meryla, Southern line, tested on No. 92 engine with the 7.55 a.m. Southern tourist train, September 2. Before arriving at Campbelltown the steam dropped down to 80 lbs. pressure, and on arriving there found the fire-box full up to the door with ashes; had to stop the train there and knock them out, thereby delaying the train considerably; and seeing that the coal was an utter failure, and there was no prospect of getting through the journey without losing some two hours or more, I obtained permission to send another engine on from Campbelltown to Picton, losing nearly 40 minutes with a train of eight cars only. Had we gone on we should have required at least 30 minutes at Picton to clean the fire and raise the steam, and I have We struggled present contains too much earthy matter, and makes too many ashes to be of any service for locomotive I remain, &c., purposes.

J. JONES.

Acting Locomotive-Engineer.—J.C., 8/9/82.

Driver Jones to The Locomotive Engineer.

Sir, Penrith, 7 September, 1882. I beg to report on a trial of the Sydney Co. coal from Meryla, Southern line. I tested this coal to-day on No. 61 engine, on No. 19 down goods, Sydney to Penrith, forty-one loaded waggons on. On arriving at Parramatta, and after consuming not more than 14 cwt. of coal, the fire-box was completely blocked up with ashes, and I had to fall back on some Eskbank coal, which I had on the back of the tender, in order to avoid delaying the other trains. As it was, I lost thirty minutes getting to Penrith, and delayed the up passenger train six minutes at Blacktown. This coal at present is quite unsuitable for loco. purposes owing to the very large percentage of ashes it makes. I remain, &c.

J. JONES.

J.C., 8/9/82.

Government Railways.

Telegram from J. Jones, 9.50 to Mr. Cobb, Loco. Foreman.

This coal is a complete failure; we shall be hours on the road. Shall I send another on from Picton? Reply to Picton. Received, 10.20.

Minute of Commissioner.

RECENTLY a train in which the Minister was travelling was detained at or near Campbelltown for want of steam for a considerable time; the answer given to inquiries as to cause of delay was that Berrima coal was being used. Let me have particulars, for it is denied that the coal in use was the Berrima Coal Company's coal, and even if it were, inquiry is necessary to ascertain why the coal failed on this particular occasion. C. A.G.,

Mr. Middleton.

14/9/82.

The coal used on the occasion referred to was not Berrima, but from a mine further south named I think Meryla. It failed to generate steam on account of the accumulation of a great quantity of white ash on the fire-bars.—Thos. Middleton, 15/9/82. The Commissioner.

Inform Mr. Wilshire that it was not the Berrima Coal Company's coal, but some other coal which was being tested that failed on the occasion referred to.—C.A.G., 15/9/82.

The Commissioner for Railways to W. J. Wilshire, Esq.

10 September, 1882.

Referring to the train which was recently delayed at or near Campbelltown through want of steam, I have the honor to inform you that inquiry has shown that it was not the Berrima Company's coal but some other coal which was being tested that failed on the occasion referred to.

I have, &c., CHAS. A. GOODCHAP,

Commissioner for Railways.

1883-4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY EMPLOYÉS

(IN DARLING HARBOUR YARD AND AT EVELEIGH.)

Ordered by the Legislative Assembly to be printed, 29 April, 1884.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 15th January, 1884, That there be laid upon the Table of this House, a Return showing,—

- "(1.) The number of men employed in the Darling Harbour Yard, the "date of employment, wages received in each case, and by whom "recommended.
- "(2.) The like information in reference to the men at Eveleigh, in "Mr. Waring's gang."

(Mr. Abigail.)

RAILWAY EMPLOYÉS.

RETURN of men employed at Darling Harbour Yard, showing date of employment, wages received, and by whom recommended.

Connolly T.	Names.	vages received, an	Date of Appointment.	Rate of pay.	By whom recommended.
Hannewy D. Head porter 21 1874 10		<u> </u>			· · · · · · · · · · · · · · · · · · ·
Bannerman W	Connolly T	Foreman	— Oct., 1872		-
Fenton H		Head porter			
Septemary Porter		,,,			
Septemary Porter		Wetchmen			
Hubbard J.		, viauciman	2 1077	7/2 per day	
Dooly J. Douglass C. Porter 14 Nov. 45/5 per week.		•	OO Mar	776	•
Douglass C. Porter			1.C T		
Bergan J					
Day T.					
Pearce J. Kell D. "" 22 ", " 76 ", " 1878		•	0 1076	0/	<u> </u>
Hartigan J.			24 Oct., 1878		
Ireland C. Weigh clerk. 9 Oct., 1879 7/6	Kell D	,, ·			
Woodcorft W. Porter 5. Nov. 7. 1/6	Hartigan J	· · · · · · · · · · · · · · · · · · ·	— Dec., 1873		
Nicholbis G.					
Grisdale L.			0.4	1 77/	ļ
Reane P.	Nicholis G	1 "		01	
Brennan J.		l ''		01	
Heffernan P.		''	c -		
Fairley W		l ''	10 Mar.		
Turner W.		1 **	10	1 77 "	
M Neil J		i	00 1070	l H/	
Robinson J.		1	13 ,, 1880	7/6 ,,	J. McElhone, M.P.
Williams T.		ł .	— May, 1879	7/- ,,	1
Doyle M	Williams T	,,	28 Feb., 1881	7/6 ,,	A. Cameron, M.P.
Charlton E	Doyle M	,, ,		7/6 ,,	
Newbold G.	Charlton E	, ,,			
Young J. 16 Nov. 1881 7/6					1
Cox E. ", — Mar. 1868 8/- ", A. Stuart, M.P. Simpson T. ", 25 Sept., 1850 7/6 ", A. Stuart, M.P. Monaghan P. ", 7 Nov., 1881 7/6 ", A. Stuart, M.P. Middleton W. ", 9 June, ", 7/-", 7/-", 7/6 per day. Mr. Paull. McGrath F. Porter 12 May, ", 7/6 per day. Mr. Paull. McGrath F. Porter 12 May, ", 7/6 per day. Mr. Paull. Neenehan J. ", 17 July, ", 7/-", 7/6 ", H. Clarke, M.P. Renehan J. ", 28 Sept., ", 7/-", 7/6 ", H. Clarke, M.P. Partington W. ", 27 July, 1881 7/-", 7/-", Rev. T. Edwin. Partington W. ", 25 Oct., 1882 7/-", W. F. Martin. Rev. T. 20 Oct., 1882 7/-", 7/-", Pred day. Kerr Jos. ", 27 July, 1881 7/-", Rev. T. Edwin. Kurlyos. ", 25 Oct., 1882 42/- per week. Kerr Jos. ", 12 Dec., 1881 7/-", W. F. Martin. Kerr Jos. ", 7/- ", Pred day. Kerr Jos. ", 7/- ", F. A. Wright, M.P. Kearney H. ", 11 Nov., ", 7/- ", Kearney H. Lyons F. Porter 9 Sept., 1880 7/- ", M. P. Lyons F. Porter		,,,		1 mie	Dy Towant M P
Simpson T.				1 01	Dr. Tarrano, M.I.
Monaghan P.		"	28 Sont 1880	TIC.	A Stuart M.P.
Middleton W. 9 June, 7/-				E 10	A. Social o, Br. 1.
Douglass J. Messenger		{ **		H 7	
M'Grath F. Porter 12 May, 7/6 per day A. Ryrie, M.P. Putland S. 17 July, 7/6		Messenger	1 Mar., 1882		Mr. Paull.
Sheridan W. T.			1 30 35		A. Ryrie, M.P.
Putland S.		1		7/- ,,	
Renehan J.		1	17 Nov., 1881	7/6 ,,	H. Clarke, M.P.
Patington W		1 "	28 Sept., ,,		
Duncan W	Argent T	· ,, ········			
Stanbridge G.	Partington W	. ,, ,		1 77	W F Martin
Wālsh J. " 25 Oct., 1882 42/- per week. Ker Jos. " 27 " T/- per day. Mr. Paull. Huxley C. " 31 " 7/- per day. Mr. Paull. Kearney H. " 11 Nov., " 7/- " S. Smith, M.P. Wynne Jno. " 14 " 7/- " S. Smith, M.P. Wynne Jno. " 14 " 7/- " " S. Smith, M.P. Wills W. " 16 Sept., " 7/- " W. Foster, M.P. Pauley A. T. Watchman 22 June, 1878 45/- per week. W. Foster, M.P. Lyons F. Porter 9 Sept., 1880 7/- " W. Foster, M.P. Gray W. " 27 May, 1879 7/- " F. Abigail, M.P. Warran J. " 6 Nov., " 7/- " W. J. Foster, M.P. Sheldon J. " 3 Oct., " 7/- " W. J. Foster, M.P. Ewen S. " 3 Oct., " 7/- " W. T. Poole, M.P. Hopkins C. " 24 Nov., 1883 7/- " W. T. Poole, M.P. Judge M. <td>Stanbridge G</td> <td>,,</td> <td></td> <td>1 177</td> <td></td>	Stanbridge G	,,		1 177	
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Names	Position	Date of Appointment.	Rate of pay.	By whom recommended.
Teasdale R. Robson J. Lyons H. Green T. Conroy A. B. Hennessy A. Brogan T. Bartie W. Gleeson J. Callaghan J. Kenny J. Phillpot H. Abigail W. Roohan P. Emmett C. Leahy T. Bragg B. Bargery D. Waddups F. Donovan N. Foreman W. Mills H. Williams C. Whittle S. W. Mouland J. Bargan Jas.	Night Head Porter Weigh Clerk Porter Watchman Porter "" Head Shunter Shunter Shunter Signalman Point Cleaner Shunter Head Shunter	24 ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	7/- ,, 7/- ,, 9/6 ,, 7/- ,,	E. Cass, M.P. J. Kidd, M.P. J. B. Olliffe, M.P. Hon. G. R. Dibbs. G. Withers, M.P. Hon. A. Stuart. J. B. Thompson.

Men are taken on as required at Darling Harbour Station during the busy seasons, and retained if, after a fair trial, they prove themselves good hands. Every man has not been specially recommended, but the names have been given as far as possible.

RETURN of men employed at Eveleigh, under the supervision of Ganger James Waring.

Names.	Position.	Date of present Appointment.	Rate of pay per day.	By whom recommended.
			s. d.	
Waring James	Ganger	20 Sept., 1882	12 0	
'Coffee George	Labourer	16 Feb., 1880	7 6	11
Frater Robert	,,	16 May, 1881	7 6	11
Convoy Charles	,,	2 Feb., 1882	7 6	
Frazel Joseph	,,	16 Mar., ,,	7 6	[]
Jowers David	** **********************************	13 Oct., ,,	7 6	
Walker Thomas	,,	15 April, 1880	7 6	11
English Edmund		22 Aug., 1882	7 6	
Frazer John		15 Mar., 1883	7 6	l i
Fulton Thomas	. ,,	2 Aug., 1880	7 6	11
Savage Ernest		10 April, 1881	7 6	-
James William	,,	1 Sept., ,,	7 6	11 8
Hanson Frederick	,,	9 June, 1882	7 6	11 7
Fleming Henry		9 ., 1880	$7 \tilde{6}$.be
Convoy William	,,	2 Feb., 1882	7 6	These men were employed by the District Engineer, as required
Smith Patrick	,,	16 ,, 1880	7 6	
Funnell Edwin		4 Jan., 1883	7 6	
Sullivan Thomas	,,	18 Feb., 1880	7 6	9
Foley John	,,	21 May, 1883	7 6	11
Sullivan Philip	,,	l April, ,,	7 6	
Hayes John	,,	6 Λug., ,,	7 6	🖺
Reynolds Joseph	,,	2 April, 1880	7 6	[c]
Cox Alfred	1	3 Aug., 1883	7 6	11 \$
Griffiths Samuel	,,		7 6	%
Marshall Thomas	,,	3 Sept., ,,	7 6	
Bourke Thomas	1	l 1 A	7 6	lî ă
Richards Thomas	,,	l Aug., ,,	7 6	11 \$
Wilson John	,,	2 Sept., ,,		1) 5.
Pine Robert	,,	14 Mar., 1881	7 6	·
Welch Michael	1	11 Jan., 1883	7 6	&
Kelly Henry	***	6 ,, ,,	7 6	II ä
Garretty Tomos	,,	1 Mar., 1881	7 6	[2]
Garretty James Pearce George		6,,,,,,	7 6	0
Brennin Michael	,,	3 July, ,,	7 6	1
Halcrow Thomas	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	16 Nov., 1879	7 6	· · · •
Fagan Patrick	,,	1 May, 1883	7 6	#
Podesta Dominick		2 Aug., ,,	7 6	II ă
	,,	4 Jan., 1878	7 6	ا ا
	1 "	27 Nov., 1883	7 6	li , se
Bailey Stephen	,,	27 ,, ,,	7 6	
Thorn Thomas	,,	6 Dec., ,,	7 6	i
Doong Alfred		18 ,, ,,	7 6	11
Deans Alfred	Boy	18 Jan., 1880	4 9	
Waring Thomas	,,	3 Feb., 1883	4 9	
Walton Robert	,,	2 Mar., ,,	4 9	11
M'Cooey Gregory	,,	1 Sept.	4 9	
Higgins Thomas	,,	4 Nov., 1879	4 9	
Halmarick William	9.5	14 Jan., 1883	4 9	11
Griffiths Christopher	,,	9 Sept., ,,	4 3	
Flynn John	,,	6 Aug., ,,	4 3	Į.
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LEGISLATIVE ASSEMBLY.

SOUTH WALES.

CONVEYANCE OF RAILWAY MATERIALS.

(RATES, CORRESPONDENCE, &c.)

Ordered by the Legislative Assembly to be printed, 19 March, 1884.

RETURN to an Order of the Honorable the Legislative Assembly of New South Wales, dated 28th November, 1883, That there be laid upon the Table of this House, a Return showing :—

- "(1.) The rates charged for the conveyance of Permanent-way material for "railway extensions chargeable to capital account; also the rates charged "for similar material carried by railway for private persons.
- "(2.) Copies of all correspondence which has taken place between the "Engineer-in-Chief for Railways, the Minister, the Commissioner for "Railways, or traffic authorities, as to the rates charged for the conveyance "of such railway material.
- "(3.) Copies of all correspondence respecting delays in forwarding perma-"nent-way material to the contractors for the extensions now under " construction."

(Mr. Hutchinson.)

(No. 1.)

THE rates charged for the conveyance of Permanent-way material for railway extensions chargeable to capital account; also the rates charged for similar material carried by railway for private persons.

The following are the rates charged for the conveyance of Permanent-way material for railway extensions chargeable to capital account :-

4d. per ton per mile with the following discounts-

10 % on the rate per mile for every mile exceeding 100 and up to 150. 150

And on the Southern and South-western lines a further discount of 20 per cent. when conveyed a distance of more than 340 miles from Sydney ; maximum rate, £5 10s. per ton.

The same rates are charged to private persons.

(No. 2.)

Copies of all correspondence which has taken place between the Engineer-in-Chief for Railways, the Minister, the Commissioner for Railways, or traffic authorities, as to the rates charged for the conveyance of railway material for the extensions.

The correspondence respecting the above was laid upon the Table of the Legislative Council on the 18th October, 1883, and comprised in a return printed under No. 3 Report from Printing Committee.

See pages Nos. 1, 33, 34, 35, 36, 37, 38, 39, and 40 of the Return entitled "Correspondence on the subject of the use of Iron or Steel Rails for Railway extensions, the expenditure of the capital vote for railway extensions, and the rates charged for material for railway extensions."

(No. 3.)

CORRESPONDENCE respecting delays in forwarding Permanent-way Materials to Contractors for extensions now under construction

	SCHEDULE.	
NO		PAGE.
	Engineer in-Chief, directing attention of Minister to slow rate of delivery of Permanent way materials for extensions, and minutes thereon 19 April, 1883	2
2	Engineer in Chief, with further reference to above, and minutes thereon 29 June, 1883	3
3	Messis Topham, Angus, & Co, complaining of non delivery of rails for their contract, and minutes thereon	
•	4 July, 1883	3
4	Messrs Topham, Angus, & Co, asking that they may be better supplied with rails, and minutes thereon.	
*	10 July, 1983	4
	Engineer in Chief, again directing attention to slow delivery of rails, and minutes thereon 7 July, 1883	$\hat{4}$
Ð	Engineer in Ciner, again directing attention to slow derivery or rains, and inneres mercon - vary, 1000	*
b	Minute of Secretary for Public Works, that complaints are made of the slow supply of rails to contractors, and	4
_	minutes thereon 16 July, 1883	*
7	Engineer-in Chief, forwarding correspondence to Minister re delays in delivery of rails, and minutes thereon	5
	21 July, 1883	Ð
8	Engineer in Chief, again directing attention to slow delivery of rails for construction purposes, and minutes	
	thereon 13 August, 1883	6
9	Engineer in Chief, stating that complaint has been made by contractors for Dubbo Bridge re slow delivery of	
	material 20 August, 1883	6
10	Engineer in Chief, stating that opening of line to Rylstone will probably be delayed in consequence of slow	
	delivery of rails 24 August, 1883	6
11	Engineer in Chief, forwarding correspondence with reference to short supply of bolster trucks for carriage of	
	materials, and minutes thereon 28 August, 1883	6
12	Engineer in Chief, forwarding letter from Messrs Topham, Angus, & Co, complaining of stoppage of road laying	
^-	for want of rails, and minutes thereon 31 August, 1883	7
13	Engineer in Chief, further respecting short supply of rails for Mudgee extension, and minutes thereon	
20	4 September, 1883	8
14	Engineer in Chief, calling attention to short supply of rails for Jerilderie line, and minutes thereon 11 September,	
11	1883	8
15	Engineer in Chief, further respecting above 12 October, 1883	9
16	Engineer in Chief, further respecting slow delivery of rails for Mudgee line, and Traffic Manager's report thereon	•
TO	22 October, 1883	9
17	Engineer in Chief, further respecting non-delivery of material for Jerilderie line, and minutes thereon	•
1 /		10
10	23 October, 1883	
18	Engineer in Chief, reporting insufficiency of rail trucks for materials for extensions, and minutes and reports	10
	thereon 8 November, 1883	
19	Engineer in Chief, further respecting non-delivery of material for Jerilderie line, and minutes thereon 29 October,	10
	1883	10
19a	Engineer in Chief, reporting slow delivery of materials for extensions, and reports thereon 21 November, 1883	13
20	Superintendent of Stores, directing attention to taidy arrival of rails from England for the extensions, and	
	minutes thereon 20 January, 1884	14
21	Traffic Manager, reporting there are now no rails to forward to the extensions, and that trucks in consequence	
	are comparatively idle 31 January, 1884	15
22	Minute of Commissioner, respecting the complaints of delay in forwarding Permanent-way material for the	
	extensions 16 February, 1884	15

No. 1.

The Engineer-in-Chief to The Secretary for Public Works.

Department of Public Works, Railway, Branch, Engineer-in Chief's Office, Sydney, 19 April, 1883.

Slow delivery of construction material for Southern and Western Railways

As serious inconvenience is being caused to this department and to railway contractors from the slow rate of delivery of Permanent-way material for construction purposes, owing, as alleged, by the traffic authorities to the madequate stock of bolster trucks, I shall be glad if something can be done to expedite the delivery to the contractors of the rails, fastenings &c, for the extensions, or claims will most probably be made against the department

JOHN WHITTON.

Minutes on No, 1

Railways, BC, 21/4/83—JR Traffic Manager for report—Chas AG, 24/4/83. Urgent Let me have a return of the rails forwarded within the last three months—Chas AG. The return asked for by the Commissioner is enclosed. Rails are going to so many different places and for such long distances that the wagons take a considerable time on the journey, so that for a time we were not able to forward them as fast as we should have liked, but this month the supply to all contracts has been well maintained. If the "G" trucks that I asked for on 31st January, 1882, had been supplied there would have been no hitch at all, but none of them have been supplied yet. I do not however apprehend any more complaints, as every possible effort is being made to keep up the supply—W. V. Read. (per. D.K.), 31/5/83. Commissioner.

Return showing the number of Rails sent to the various extensions for the quarter ending April 30th, 1883.

Extension	February	March	Apul	Total
Albury Dubbo Murrah to Blayney Cooma Wallerawang Loan to Barnes & Co, Dubbo	N ₁ 1 1,848 103	80 911 297 2,331	337 1,424 324 2,526	417 4,183 103 621 4,857 934
•		Total		11,115

No. 2.

The Engineer-in-Chief to The Secretary for Public Works.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office, Sydney, 29 June, 1883.

Slow delivery of construction material.

Reference to my minute of 19th April last, drawing attention to the delay in delivery of material for extension, owing to the scarcity of bolster trucks, I have the honor again to bring this matter under your notice, the contractors for the Narrandera to Jerilderie railway being at a standstill for want of rails, which cannot be delivered as required for want of sufficient bolster trucks.

W. H. QUODLING,

(For the Engineer-in-Chief.)

Minutes on No. 2.

Railways.—J.R., B.C., 29/6/83. Mr. Read for cause of delay now?—W. V. READ (per D.K.), 29/6/83. Mr. Read for report.—Chas. A. G., 29/6/83. What is the Goods Superintendent. Please show how many rails have been sent to this extension.—J.D. (pro Superintendent Evans). Mr. Paull, 30/6/83. Total number sent 1,324, and there is a balance of 134 to go, which will be sent in preference to any others. Mr. Paull, 30/6/83. The only delay is for the want of bolster trucks. Four sets of rails were sent on Friday.—Chas. Paull, 2/7/83. Goods Superintendent. There are now only 109 rails to go forward. Delay in executing orders is caused by scarcity of bolster trucks. I am wiring and writing daily to expedite their return, but as a large number of sets is required in the Inspector's districts it is impossible to obtain the full supply. I trust a supply of new belster or G trucks will soon be forthcoming.—G. T. Evans, 3/7/83. Traffic

[Enclosures.]

Telegram from Superintendent G. T. Evans to Inspector Crawford, Goulburn.

Sydney, 2 July, 1883.

Harbour without delay.

Sydney, 2 July, 1883.

Harbour without delay.

I have given instructions for spare bolsters to be worked through. Ten sets are used by Topham, Angus, & Co. at Cables and Wingello, five each day.—A. Crawford, 2/7/83. Goods Superintendent.

Memorandum from Mr. J. Carmichel to Station-master Paull.

I have to report for your information that there are no bolster trucks on the station this day. Please inform Goods Superintendent as we require about ten sets a day to keep the extensions supplied.

J. CARMICHEL.

For information of Superintendent Evans. Grave complaints are being made by owners of timber, as well as the contractors on the extensions, who are hardly pushed for rails.—Chas. Paull, 2/7/83. Superintendent Evans.

Memorandum from Storekeeper to Traffic Manager.

Government Railways, Store Branch, 3 July, 1883.

Rails for Narrandera The order for rails for Halliday, Owen, & Co., Narrandera, is still unattended to. This is a very serious matter. There have been plenty of bolsters lately in Sydney and Eveleigh yards.

A.R.

Goods Superintendent for attention.—W. V. Read (per F.P.), 7/7/83. What is the meaning of above report?—G. T. Evans, 9/7/83. Mr. Paull. This cannot have reference to Darling Harbour, as you are aware that we have had a very short supply indeed of bolsters during the past four or five months. This order was completed on the 4th instant.—Chas. Paull, 10/7/83. Superintendent Evans. Station-master, Granville, for report. Is there any outstanding order for Narrandera at your station?—G. F. Evans, 11/7/83. No, there is no outstanding order here for Narrandera.—J. Higgs, 12/7/83. Goods Superintendent. Traffic Manager to see.—G. T. Evans, 12/7/83. Stores Superintendent to see.—W. V. Read (per D.K.), 13/7/83. Mr. Quodling.—A.R., 16/7/83.

No. 3.

Messrs. Topham, Angus, & Co. to The Storekeeper.

Sir, Goulburn, 4 July, 1883. We are very sorry to have again to complain to you of the non-delivery of rails for the plate-laying on this contract. We are laying down fully 20 chains per day, if anything more, and our rail straighteners are standing for want of rails. We have to ask your kind and immediate attention to this, as it is interfering very much with the progress of this contract.

We are, &c.,
TOPHAM, ANGUS, & CO. (Per Chas. Smith).

Minutes on No. 3.

Traffic Manager.—A.R., 6/7/83. Very urgent. What is the difficulty in getting a good supply of material sent away for Messrs. Topham, Angus, & Co.? I wish immediate reply please.—W. V. Read (per D.K.), 10/7/83. Goods Superintendent. Mr. Paull, for immediate report.—G. T. Evans, 11/7/83. It is not possible for me to do any more in sending rails forward than I am with the short supply of rail trucks that we are receiving. The contractors for Goulburn to Cooma are not the only people who complain, because they are all complaining, and unless a better supply of rail trucks is received no doubt it will become far more serious than it has been. I have only four sets to-day; those I will load for Goulburn.— Chas. Paull, 12/7/83. Goods Superintendent.

Traffic

Traffic Manager to see. I am continually writing and wiring for bolsters, but the supply is very limited. When may we expect to have an addition to our stock?—G. T. Evans, 12/7/83. Please see my report on Stores Superintendent's minute of 12/7/83.—W. V. Read (per D.K.), 14/7/83. Stores Mr. Quodling, to whom the other paper is also sent.—A.R., 14/7/83. Superintendent.

> No. 4. Messrs. Topham, Angus, & Co. to The Storekeeper.

Goulburn, 10 July, 1883.

We are very sorry to have to inform you that the ganger of our rail straighteners and his men left us yesterday on account of broken time caused through the non-delivery of the requisite permanent way material for this railway, and if a supply of both rails and fastenings should not come to hand to-morrow we shall be obliged to give up plate-laying altogether on Friday, the 13th. This is a very serious matter to us, and we have to ask your kind and immediate attention to this subject, for try as we may it will be impossible for us to complete this contract within the specified time unless you can kindly oblige us with the permanent way material in quantities of not less than 20 to 22 chains per day.

We are, &c., TOPHAM, ANGUS, & CO., (Per Chas. Smith.)

Minutes on No. 4.

This is a very serious matter indeed, and if material for the construction of the lines is not sent forward with greater despatch I feel sure the Commissioner will sustain pecuniary loss, as the contractors

will not suffer for ever.—A.R., 12/7/83. Traffic Manager.

Everything possible is being done to keep up the supplies. .I have just seen Mr. Scott, and we have agreed to try the experiment of loading A trucks with rails, as far as Goulburn. This has often been done as far as Eveleigh and Granville, but we have not hitherto loaded them for a long journey, and it is not at all certain that they will suit, in consequence of the bolster being immovable, still it is our only chance of avoiding complaints, because the ordinary bolster trucks are all in use. There have also been two or three G waggons built, and I have given direction for them to be loaded.—W. V. Read (per D.K.), 12/7/83. Mr. Quodling to see.—A.R., 14/7/83. Stores Superintendent.

No. 5. Minute of Engineer-in-Chief to Secretary for Public Works.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office, Sydney, 7 July, 1883.

Subject:—Slow delivery of rails for Goulburn to Cooma Extension.—Further re bolster trucks deficient.

REFERRING to previous correspondence, I have again to draw attention to the serious inconvenience

occasioned to the contractors through the slow delivery of rails.

The most recent complaint is from Messrs. Topham, Angus, & Co., the contractors for the Goulburn to Cooma Extension, who represent that their work is very much interfered with by the slow delivery, as they are laying down 20 chains of road daily. I have again communicated with the Traffic Department on this subject, but the main cause of the slow delivery seems to be the scarcity of bolster trucks, about which I have already reported to you.

JOHN WHITTON (Per W.H.Q.)

Minutes on No. 5.

Submitted. Forward to Railways.—J.R., B.C., 10/7/83. Traffic Manager.—G.B., B.C., 12/7/83. Everything possible is being done to keep up the supplies. I have been in communication with the Stores' Superintendent in reference to this matter, and have just seen Mr. Scott, and we have agreed to try the experiment of loading "A" trucks with rails as far as Goulburn, but it is not at all certain that they will suit, in consequence of the bolsters being immovable. There have also been two or three "G" waggons built, which can be loaded. All the ordinary bolster trucks are in use.—W. V. Read (per D.K.), 12/7/83. Commissioner.

Let me have a weekly return of rails forwarded from Sydney to their various destinations from this time forward. How many bolster trucks are there? Perhaps Mr. Read will see me on the subject. Some plan must be devised for getting the rails forward. There should not be much difficulty

with the 18' rails.—Chas. A. G., 16/7/83.

I have seen the Commissioner, and, as I informed him, the experiment that was made of loading two pairs of "A" waggons with rails for the Cooma line was very successful, and I have arranged with Mr. Scott to have all the "A" waggons fitted with bolsters, which will be exclusively used on the Southern Line, so that the "E" waggons can be confined to the Western Line. By this means I hope, and have no doubt I shall be able to avoid all complaints. W V P 18/7/22 doubt I shall be able to avoid all complaints.—W.V.R., 18/7/83.

Seen.—Chas. A. G., 21/7/83.

No. 6. Minute of Secretary for Public Works.

COMPLAINTS are made by Mr. Quodling that several of the contractors are complaining that the Department are not supplying them with permanent way materials as fast as they should do so. Will Commissioner F.A.W., for Railways kindly attend to this? 16/7/83.

Minutes on No. 6.

I have directed the use of other than bolster trucks for forwarding these rails, and have asked for a weekly return of rails forwarded. There is not I believe much to complain of, but while this is so every effort must be made to remove all cause of complaint.—Chas. A. G., 17/7/83. Traffic Manager.—G.B., B.C., 20/7/83. This is having every attention.—W. V. Read (per D.K.), 21/7/83. Commissioner.

No. 7.

The Engineer-in-Chief to The Secretary for Public Works.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office, Sydney, 21 July, 1883.

Correspondence re short supply of bolster trucks.

Referring to previous communications on the subject of the paucity of bolster trucks, and the consequent delays in the delivery of rails for certain extensions, I have now the honor to enclose, for your consideration, correspondence from the Traffic and Stores Departments, touching the matters referred to.

W. H. QUODLING, (For the Engineer-in-Chief.)

Minutes on No. 7.

By Secretary for Public Works:—Are there any complaints now from contractors short supply about of rails, &c.?—F.A.W., 28/7/83. Engineer-in-Chief.—J.R., B.C., 26/7/83. Yes. See Messrs. Topham, Angus, & Co's. letter of the 23rd instant herewith.—W.H.Q. (for the Engineer-in-Chief), 28/7/83. Under Secretary for Public Works.

[Enclosures.]

Messrs. Topham, Angus, & Co. to District-Engineer Glover.

Goulburn to Cooma Railway, Section No. 1, 23 July, 1883.

Dear Sir.

Our memo. of 16th instant returned herewith; since that date we have received a good supply of fastenings for

the permanent way.

At the same time we desire to draw your attention to the very hand to mouth way in which we are being supplied with rails. Up to the present time we have received 1,170 tons 18 cwts. 3 qrs. 26 lbs. of rails, which are sufficient for about 10 miles 51 chains. These have been disposed of as follows, viz.:—

Laid in permar For temporary			act	,	 	6 miles 72 chains.
Rails in stock	 	•••	•••		 • • •	59 ,,
	Total				 	10 miles 51 chains.

You will thus see that we have only two days supply of rails in hand and we are sorry to state that we shall have two gangs of rail-straighteners idle to-morrow, which keeps the work in a chronic state of change. Your early attention Yours, &c., TOPHAM, ANGUS, & CO. to this matter will greatly oblige

The Engineer-in-Chief.--W.G., 25/7/83.

Forwarded for the information of the Minister.—W.H.Q., 28/7/83.

Topham, Angus, & Co. to District-Engineer Glover.

Goulburn to Cooma Railway, Section No. 1, 10 July, 1883.

Dear Sir,

We beg to bring under your notice that we have not received any permanent way fastenings since March 10th.

We have now only a few days supply on hand, therefore would you be good enough to direct that a further supply be immediately forwarded to Joppa, so as to prevent the platelaying from being stopped.

Yours, &c.,

TOPHAM, ANGUS, & CO.

The Engineer-in-Chief for Railways.—W.G., 11/7/83. Superintendent of Railway Stores.—W.H.Q., 13/7/83.

The whole of the fastenings for the 8 miles of road, viz.:—7,290 fish-plates, 14,580 bolts, 24,515 spikes, 39,095 screws were loaded up on March 6th, and are no doubt those referred to by Topham, Angus, & Co. as received on the 10th. How can they want more when they have yet 610 rails to receive? The fastenings for the order of August 11th are now being loaded up, but these should not be required until rails are sent.—A.R., 14/7/83. Mr. Quodling.

Since writing I learn that a truck load of fastenings is in dispute and the matter has been referred by the store-keeper to the Traffic Branch. In any case the other fastenings will be received by them in a day or two.—A.R.

Mr. Glover.—W.H.Q., 16/7/83. Messrs. Topham, Angus, & Co., 23/7/83.—W.G. Seen.—T.A. & Co., 23/7/83.

Railways.—J.R., 30/7/83. The Traffic Manager and Superintendent of Stores will please give this matter their best and earliest attention.—D.V., 30/7/83.

Please see my report, dated 1st August.—W. V. Read, per D.K., 1/8/83.

Telegram from Topham, Angus, & Co. to Engineer-in-Chief.

WE have only one day's supply of rails on hand; if none arrive to-morrow we must stop work altogether on Wednesday

Minutes.

Under Secretary for Public Works.—W. H. Quodling, 31/7/83. By Secretary for Public Works:—Will Commissioner for Railways attend at once to this matter.—F.A.W., 31/7/83. Will Traffic Manager report on this matter? I had Mr. Read's assurance that no delays should take place.—Chas. A.G., 31/7/83. The difficulty has been in getting the "A" trucks fitted with bolsters with sufficient rapidity. This now being done however, and I anticipate no further complaints. Six sets of rails were forwarded to Goulburn yesterday; three more are going to-day, and more will follow quite as rapidly as the contractors will be able to use them.

Commissioner.—W.V.R., 1/8/83. Seen.—Chas. A. G., 2/8/83.

No. 8.

Minute from Engineer-in-Chief to Secretary for Public Works.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office, Sydney, 13 August, 1883.

Subject:—Further re slow delivery of rails for construction.

I HAVE again to draw your attention to further complaints received from the following contractors, viz., Messrs. Mann, Carey, &c., Great Western Extension, Fishburn and Morton, Mudgee Branch, Topham, Angus, & Co., Goulburn to Cooma Branch, Halliday, Owen, & Co., Narrandera to Jerilderie Branch, relative to the slow delivery of rails for their respective contracts. As explained in my previous reports on this subject the inadequate number of bolster trucks for this traffic seems to be the primary cause of the delays. I need hardly remind you that if the delays complained of are persisted in serious claims on behalf of the contractors against the Government for compensation as well as for extension of time are likely to be W. H. QUODLING, made.

For the Engineer-in-Chief.

Submitted, 14/8/83.—J.R.

Minutes on No. 8.

By Secretary for Public Works: - Will Commissioner for Railways kindly see if some steps cannot be

taken to keep Contractors properly supplied with rails.—F.A.W., 14/8/83.

Traffic Manager, B.C., 15/8/83.—G.B. We are now sending plenty of rails to all the contracts since the 14th instant, and up to yesterday inclusive we despatched 38 sets to Goulburn, 9 to Narrandera, 14 to Capertee, and 22 to Nyngan, so that none of the contractors have any reason to complain. I am doing everything in my power to keep up the supply and have every hope that I shall be able to do it.—W. V. Read, per D.K., 23/8/83. Commissioner. Seen.—Chas. A. G., 31/8/83.

No. 9.

Minute of Engineer-in-Chief to Secretary for Public Works.

Department of Public Works, Railway Branch,

Engineer-in-Chief's Office, Sydney, 20 August, 1883.

Complaint of contractors re slow delivery of material. Subject:—Dubbo Bridge. THE contractors for the erection of the Railway Bridge at Dubbo (Messrs. Barnes & Co.) having made strong representations to this office on the subject of the non-receipt of certain ironwork urgently required for this bridge, I caused inquiries to be made of the Superintendent of Stores Department, and elicited the fact that the delay in forwarding the ironwork (which has been landed ex s.s. "Glenfinart") has been occasioned by the difficulty of obtaining bolster trucks.

The contractors reasonably urge that if they are unable to keep their staff of men together for want of material they will be involved in considerable loss; and it is needless to point out that claims will

accumulate against the Government by reason of such delays.

W. H. QUODLING,

(For the Engineer-in-Chief.)

Minutes on No. 9.

By Secretary for Public Works:—Railways to explain.—F.A.W., 22/8/83. Mr. Goodchap.—J.R., B.C., 23/8/83. Traffic Manager.see my Minute of 18/10/83.—W. V. Read (per D. K.), 18/10/83 Traffic Manager.—Chas. A.G., B.C., 24/8/83. Please Commr.

No. 10.

The Engineer-in-Chief to The Secretary for Public Works.

Department of Public Works, Railway Branch,

Engineer-in-Chief's Office, Sydney, 24 August, 1883.

Mudgee Railway.—Delay in opening to Rylstone, owing to slow delivery of rails. In connection with my Minute of the 13th instant, respecting the slow delivery of permanent rails for sundry constructions, I have the honor to state that if the works on the Capertee to Mudgee Railway are further delayed for want of rails it will be impossible for the contractors to complete the line to Rylstone by the end of October, as intended.

W. H. QUODLING,

(For the Engineer-in-Chief.)

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Minutes on No. 10.

Traffic Manager.—L.P.I. (pro Secretary), B.C., 27/8/83. Railways.—J.R., B.C., 25/8/83. Traffic Manager.—L.P. Please see my report of this date.—W. V. Read (per D.K.), 18/10/83.

No. 11.

The Engineer-in-Chief to The Secretary for Public Works.

Department of Public Works, Railway Branch,

Engineer-in-Chief's Office, Sydney, 28 August, 1883.

Short supply of bolster trucks for carriage of rails and bridge material for extensions.—Further correspondence.

I FORWARD for the Minister's information the enclosed correspondence between the Superintendent of Stores and the Traffic Manager, Southern and Western Railways, re the difficulty in forwarding rails to the extensions, in consequence of the insufficient number of bolster trucks available for this service, and again urge upon him the necessity for increasing the stock of these vehicles very considerably.

I do not attach any blame to the Departments concerned, as I believe the respective officers in charge have done all in their power to mitigate the difficulty.

Bolster trucks are also required for girders of iron bridges and for long lengths of timber.

W. H. QUODLING,

(For the Engineer-in-Chief.)

Minutes on No. 11.

By Secretary for Public Works:—Commissioner for Railways for report.—F.A.W., 30/8/83.

Mr. Goodchap.—J.R., B.C., 31/8/83. Traffic Manager.—G.B., B.C., 5/9/83. Please s
Minute of 18/10/83.—W. V. Read (per D.K.), 18/10/83. Commissioner. Please see my

[Enclosures.]

Telegram from Station-master, Nyngan, to Storekeeper and Station-master, Darling Harbour. MANN, Carey, & Co. are again at a stand for want of rails. Please forward supply as soon as possible, and oblige.

Mr. Dale.—H.C., 14/8/83. Forwarded to Mann, Carey, & Co. :—

			24 fcet.	· 21 feet.	
August 2			95	46	
,, 4			74	18	
,, 8			41	$\frac{18}{53}$	
,, 10	•••		106	35	
· Total		···	316	152	
Balance due		1	4,765	5,411	—J. Р. Dа

Please hurry rails forward.—H.C., 14/8/83. Station-master, Darling Harbour.
Only one set of rail-trucks on station Saturday, and three sets Monday, and two sets yesterday, to send rails with; but to-day I have a better supply, and I will do my best to send all I can forward; but the want of trucks is the sole cause of all the complaints re want of rails.—Chas. Paull, 15/8/83. Storekeeper. Superintendent of Stores.—H.C., 16/8/83. The extensions will inevitably be delayed during this year if something is not done about increasing the rail-truck supply. There does not appear to be a sufficient quantity on hand for one extension, while we shall soon have nearly half a dozen to keep going.—A.R., 16/8/83. Traffic Manager.

~ .					Sets.	•				Sets.
July 3	31	• • •		 	14	August 15				3
July : Augus				 	3	,, 16				3
,,	4			 	2	,, 17	• • • •	• • • •		3
,,	8		• • • •	 • • •	2	,, 18				2
,,	10	• •		 	3				-	
,,	13	• • • •		 	3	\mathbf{T}	otal			40 in 17 days.
,,	14	• • •		 	2					, •

It will be seen that about three sets a day have been sent this week. Nyngan requires fifteen sets a week, and every effort is being made to supply that number.—W. V. Read (per V.T.), 17/8/83. Stores Superintendent.

Minute from Superintendent of Stores to Traffic Manager.

Short supply of Bolster Trucks for the forwarding of rails to the various extensions.

Surely the Traffic Manager will not contend that three sets per day is a satisfactory quantity to send out. We shall soon have five or six extensions hard at it, and the lowest number that will keep them going will be twelve to fifteen sets daily. I trust that this matter will receive Mr. Read's personal attention before it is too late to make some provision. There are quantities of wagon fittings in store, and Hudson Brothers would soon knock together fifty extra trucks for this purpose.

18/8/83.

A. RICHARDSON, Superintendent of Stores.

Mr. Richardson may rest assured that I am doing everything in my power to send forward good supplies of rails, so that the contractors may not be delayed. I fancy he must be under the impression that the rails referred to in my minute of the 17th instant were all that were forwarded from Darling Harbour during the period stated; but that is not the case, because these were all forwarded to Nyngan. Last week sixteen sets of rails were sent to the Contractors there in addition to those sent to Capertee, Goulburn, and Narrandera.—W. V. Read (per D. K.), 21/8/83. Stores Superintendent.

For the information of the Engineer-in-Chief.—A.R., 24/8/83. Forwarded for the Minister's consideration with my minute of this date.—J.W. (per W.H.Q.), 28/8/83. The Under Secretary, B.C.

No. 12.

The Engineer-in-Chief to The Secretary for Public Works.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office, Sydney, 31 August, 1883.

Goulburn to Bungendore—Stoppage of road-laying for want of rails.

FORWARD for your consideration the enclosed copy of a letter, dated yesterday, from Messrs. Topham, Angus, & Co., the contractors for section 1, Goulburn to Cooma Railway, reporting that they are again at a standstill with their permanent way laying for want of rails.

W. H. QUODLING,

(For the Engineer-in-Chief.)

Minutes on No. 12.

Will Commissioner for Railways give this matter his prompt attention. F.A.W., 31/8/83.

[Enclosure.]

[Enclosure.]

Messrs. Topham, Angus, & Co. to The Engineer-in-Chief.

Goulburn to Cooma Railway, Section 1, 30 August, 1883, We are very sorry to have to inform you that we were standing again to-day for want of permanent way material.

Three times within this last month our plate-laying has had to stop for want of rails; and through these stoppages we have lost some of our very best men, which tends to entirely upset our arrangements. We shall take it as a kindness if you will please endeavour to keep us better supplied, for as it is now these delays are putting us to serious inconvenience.

Yours, &c.,

(Pro Topham, Angus, & Co.), CHAS. SMITH.

I again forward these papers to the Traffic Manager to impress upon him the necessity of his forwarding the rails as early as possible. His efforts to keep the contractors going, and prevent any cause of real complaint, must not be relaxed.—Chas. A.G., 3/9/83.

Chas. A.G., 3/9/83.

Notwithstanding that thirty-eight sets were sent to Goulburn between the 14th and 23rd August it will be seen that the supply was insufficient.—Chas. A.G.

We were so hardly pressed for bolster trucks in all directions that it was quite impossible for a time to send forward supplies to please the contractors; but sufficient were always sent forward to prevent any hitch arising; and since we had a good many "A" trucks fitted with bolsters several weeks ago there have been no complaints, and there will be no more if I can possibly help it.—W. V. Read (per D.K.), 18/10/83.

Commissioner.

For the Minister's information.—D.V. (pro Commissioner).

Seen.—F.A.W., 22/10/83.

No. 13.

The Engineer-in-Chief to The Secretary for Public Works.

Engineer-in-Chief's Office, Sydney, 4 September, 1883.

Subject: Further re short delivery of rails for Mudgee Railway.

Referring to my minute of 24th ultimo, No. 83-1,352, the District Engineer, Mudgee railway, reports (by wire) that the contractors who are able to lay a mile and a half of road per week are again short of rails.

As these delays will prevent the proposed opening of the line to Rylstone by the end of next month, I submit this further complaint for your consideration, and in the meanwhile I have represented the matter strongly to the Traffic and Stores Department.

Submitted, 5/9/83.—J.R.

JOHN WHITTON (per W.H.Q.)

Minutes on No. 13.

By the Secretary for Public Works:—Will Commissioner for Railways obtain a report from Traffic Manager about this continued complaint.—F.A.W., 5/9/83. Railways, B.C., 6/9/83.—J.R. Very urgent. Traffic Manager for report. I had Mr. Read's assurance that no further complaints would arise.—Chas. A.G., 7/9/83. Please see my report of this date.—W. V. Read (per D.K.), 18/10/83. Commissioner.

[Enclosures.]

Memorandum to Inspector of Stores, Redfern.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office, Sydney, 4 September, 1883.

Further re short supply of Rails, Mudgee Railway.

THE District Engineer having reported that the contractors, Mudgee railway, are again short of rails, I have to request that you will use every effort to cause them to be supplied with their weekly complement, viz., one mile and a half (1½) of

The Traffic Manager's attention has been directed to this fresh complaint and representations have again been made to the Minister on the subject. W. H. QUODLING.

This ever-recurring complaint of want of rail trucks should I think be obviated without further delay.

It has been going on for several years, constantly getting worse instead of better. I have repeatedly written about it, suggesting that a number of extra trucks should be put on hand and turned out at once. Nothing however seems to be done, and it is quite painful to deal with the contractors for the extensions under present circumstances.

The only plan seems to be to wait for a complaint and then supply a quantity of material in that direction. These complaints are constantly going the round of the contractors. It is quite impossible to keep one half of them going satisfactorily, and when new contracts are let, which will be the case shortly, serious delays, which must result in pecuniary loss to the Department, will inevitably occur if the matter be not promptly taken in hand.

Again, when we have to send a few rails south or west for renewals the same difficulty presents itself. Works are often seriously delayed before we can secure the few rail trucks necessary.

A.R., 5/9/83.

The Commissioner.

What has Traffic Manager to say to this representation?—Chas. A.G.—7/9/83.—W. V. Read (per D.K.), 18/10/83. The Commissioner.

Please see my report of this

No. 14.

The Engineer-in-Chief to The Secretary for Public Works.

Department of Public Works, Engineer-in-Chief's Office, Railway Branch, Sydney, 11 September, 1883.

Narrandera to Jerilderie Railway.—Further re slow delivery of Rails.

On the 17th July last an order was issued for the delivery of ten (10) miles of road for this contract, but the contractors (Messrs. Halliday, Owen, & Co.) complain that up to Saturday last, the 8th instant, very little of the material had been delivered, and that having started plate-laying they would require at least twenty-five

twenty-five (25) chains of material per day. As there is every prospect that unless the rails are delivered faster this work will be seriously delayed and claims made by the contractors, I think it to be my duty again to call the Minister's attention to this matter, with a request that the delivery of rails be expedited. See my previous memoranda of 29th June, 21st July, and 13th August, 1883.

JOHN WHITTON.

Minutes on No. 14.

Submitted, 12/9/83.—J.R. Manager, B.C.—G.B., 15/9/83. Commissioner.

Commissioner for Railways for report.—F.A.W., 12/9/83. Please see my report of this date. W. V. READ, per D.K., 18/10/83.

No. 15.

Minute from Engineer-in-Chief to Secretary for Public Works.

Department of Public Works, Railway Branch, Engineer-in-Chief's Department, Sydney, 12 October, 1883.

Subject:—Further re slow delivery of rails Narrandera to Jerilderie Contract. Referring to previous memoranda, addressed to you on the subject of the slow delivery of rails for the Narrandera to Jerilderie contract, &c., I have the honor to forward for your consideration the enclosed copy of another communication from the contractors (Messrs. Halliday, Owen, & Co.), dated 6th instant, reiterating their complaint about the insufficient supply of rails, and intimating that they will require to be reimbursed for their alleged loss through such slow delivery.

JOHN WHITTON.

Minutes on No. 15.

Something must be done in this matter and at once.—F.A.W., 14/11/83. Traffic Manager.-See my report of 17/11/83 on other papers.—W.V.R., 18/11/83.

[Enclosure.]

Messrs. Halliday, Owen, & Co. to The Engineer-in-Chief.

Messrs. Halliday, Owen, & Co. to The Engineer-in-Chief.

Narrandera and Jerilderie Railway, Narrandera, 6 October, 1883.

The permanent way material has been delivered in such insufficient quantities that we have been compelled to discharge half of our plate-laying gang; the remaining portion have only been able to work half-time and are likely to leave the work at any moment, having become thoroughly dissatisfied at losing so much time.

We are unwilling to discharge these men although the work is now being carried on in a very expensive manner, owing to the insufficient supply of permanent way material crippling the whole of our work, and causing us to adopt expedients for which there should be no necessity. We have however kept on, unwilling to have standing idle our locomotives, wagons, and plant, besides, knowing how difficult it is to get men back after once letting them leave. Still there will be no help for it unless the permanent way material comes forward at the rate of 200 tons or more per week, and we would respectfully state that we shall require to be reimbursed our loss in this matter.

We have, &c.,

HALLIDAY, OWEN, & Co.,

(Per T.C.G.)

No. 16.

Minute from Engineer-in-Chief to Secretary for Public Works.

Department of Public Works, Railway Branch,

Engineer-in-Chief's Office, Sydney, 22 October, 1883.

Subject:—Further re'slow delivery of rails, Capertee to Mudgee Contract.

Referring to my several previous memoranda drawing attention to the repeated complaints received from the contractors for the Capertee to Mudgee Railway, regarding the delay to the work through the nondelivery of rails, I have again to report that a further stoppage of the road laying for some days has been caused in the same way, and to request that the traffic authorities may be instructed to allow no further delay in the despatch of rails.

JOHN WHITTON Per W.H.Q.

Minutes on No. 16.

Submitted, 24/10/83.—J.R.

By Secretary of Public Works:-Mr. Vernon will give this complaint his prompt attention.-F.A.W., 24/10/83

Railways, B.C., 24/10/83.—J.R. Traffic Manager, B.C., 25/10/83.—G.B.

Messrs. Fishburn and Morton are, I may say, themselves entirely responsible for being short of rails in e. On the 25th ultimo I received the following communication from the Station-master at Capertee:— "Messrs. Fishburn and Morton, contractors, inform me, and wish me to inform you, that they can do without any more rails for at least two weeks, and would be glad if no more are sent forward for that time, so as to enable them to convey more ballast along the section to Rylstone, they being anxious to complete that

I issued orders accordingly, and on the 10th instant I received another communication from Capertee to the effect that Fishburn and Morton were prepared to take the rails as fast as they could be sent to the extent of 12 or 15 miles, and on the same day I had a telegram from Fishburn and Morton, informing me

that they were stopped for want of rails.

Now, as the first communication asked me not to send any rails for a fortnight at least, I think I was perfectly justified in believing that a day or two more would not matter, and, after all, from the 25th September till the 10th October is only 16 days. When I got the communications on the 10th there were no wagons available, but advantage was taken of the first that arrived, and two sets of rails were forwarded on the 13th, two on the 16th, and seven on the 17th instant.

If Messrs. Fishburn and Morton had not asked me I would not have discontinued sending the rails Every endeavour has been made since to keep up the supply. W.V.R., 29/10/83. Commissioner.

Seen.—J.W. For the information of the Engineer-in-Chief.—D.V., pro Commissioner, 31/10/83. Messrs. Fishburn and Morton informed.—3/11/83. ver W.H.Q., 3/11/83.

No. 17.

The Engineer-in-Chief to The Secretary for Public Works.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office, Sydney, 23 October, 1883.

Further re non-delivery of permanent way material, Narrandera to Jerilderie Railway.

Referring to previous correspondence, I forward for your consideration the enclosed copy of a telegram, dated 20th instant, from Messrs. Halliday, Owen, & Co., the contractors for the Narrandera and Jerilderie Railway, stating that owing to the non-receipt of permanent way material they were about to discharge their platelayers and claim compensation for the alleged loss thereby occasioned.

W. H. QUODLING,

(For the Engineer-in-Chief.)

Minutes on No. 17.

By Secretary for Public Works: -Traffic Manager's attention must be called to this at once, and steps

taken to keep up the supply of permanent way material.—F.A.W., 24/10/83.

Railways.—J.R., B.C., 24/10/83. A sufficient supply of material Read, per D.K., 25/10/83. Commissioner. A sufficient supply of material has been sent since.

[Enclosure.]

Telegram from Halliday, Owen, & Co. to Engineer-in-Chief for Railways.

Narrandera, 20 October, 1883. We will have to pay off our platelaying gang to-night owing to the Department failing to keep us supplied with permanent way material. We will require the loss thus occasioned to be made good.

No. 18.

Minute from Engineer-in-Chief to Secretary for Public Works.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office, Sydney, 8 November, 1883.

Subject:-Insufficient number of rail trucks, material for extensions delayed, &c.

REFERRING to my previous representations regarding the rolling-stock for carriage of rails being unequal to the demands of the several extensions, I have now the honor to submit an extract from a memo., dated 6th instant, received from the Superintendent of Railway Stores, in reply to an inquiry from this office about rails required for the Southern and Northern Junction Railway, part 3, viz. :-

"If something is not done to increase the stock of rail trucks the extensions are bound to be brought to a stand. It is quite impossible with the existing stock to carry one-half of the rails which are required, and the existing lines are in immediate need of a quantity of rails for renewals, both south and west. I have now brought this matter under notice so often that it seems useless to make any further application; but I must again point out that I am powerless to prevent the deadlock which will inevitably arise for want of permanent way material.

"Every additional extension, like the present, only adds to the difficulty of the situation. I have several times suggested to the Traffic Manager the desirability of running specials to meet the difficulty."

JOHN WHITTON.

Minutes on No. 18.

By Secretary for Public Works :- Have this complaint seen to at once, as this affair is very serious. W., 14/11/83.

Traffic Manager for immediate report, please. Could not the sides and ends of some of our D waggons be temporarily removed and bolsters provided to meet the emergency !- D.V., 14/11/83.

No. 19.

The Engineer-in-Chief to The Secretary for Public Works.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office, Sydney, 29 October, 1883.

Further re stoppage of road-laying, Narrandera to Jerilderie Railway, for want of material.

REFERRING to my minute of 23rd instant and sundry previous communications, I have the honor to forward for your information a copy of a letter from the contractors for the Narrandera to Jerilderie Railway. dated 26th instant, again complaining of the non-receipt of material, and intimating the stoppage of further work in connection with the platelaying, unless the necessary material is supplied, &c. ĴOHN WHITTON.

Minutes

Minutes on No. 19.

By Secretary for Public Works: --Will Commissioner for Railways call upon Traffic Manager for a report upon these continual complaints. Some prompt steps must be taken to supply the material. F.A.W., 2/11/83.

Railways.—J.R., B.C., 2/11/83.

Traffic Manager.—L.P.I., pro Secretary, B.C., 5/11/83.

[Enclosure.]

Messrs. Halliday, Owen, and Co. to The Engineer-in-Chief.

Sir,

Referring to our letter of the 18th instant, and our telegrams of the 20th and 23rd, on the subject of the Department failing to supply the necessary permanent way material for the purposes of this contract, we regret to say that we are still in want of rails and fastenings. Although we have received a few screws and fishplates we are still unable to go on with the work for want of rails, bolts, and spikes.

We are aware that you have given orders for the material to come forward, and we would respectfully ask you if this delay is unavoidable, or could we, by representing the matter elsewhere, obtain the necessary material for carrying on our work. Failing this, we must discontinue the ballasting and other work effected by the stopping of the plate-laying, the loss thus occasioned to be made good to us by the Department.

We have &c

We have, &c., HALLIDAY, OWEN, & CO., (Per T.C.G.)

Traffic Manager's Report on Messrs. Halliday, Owen, and Co.'s letter of the 6 October, 1883.

This complaint is dated 6th ultimo, but in order to explain it fully it will be necessary to go further back

Messrs. Fishburn and Morton were not, at their own request, supplied with any rails for a fortnight early in October.

Immediately after that—and, in fact, before the time was up—they complained of a stoppage, and in order to give them a good start it was necessary to take away the wagons from the other extension. this way Messrs. Halliday, Owen, and Co. ran short, of which I was advised on the 2nd instant; I had five (5) sets forwarded that day, and (6) six on the 3rd. The second lot, however, did not reach Narrandera five (5) sets forwarded that day, and (6) six on the 3rd. The second lot, however, did not reach Narrandera until the night of the 6th, and on that day they were, I believe, entirely out of rails; hence the complaint. in

Since the 2nd November thirty-three sets of rails have been sent to Narrandera, which exceeds the

supply—I have been told by Halliday, Owen, and Co.—they require.

The principal cause of these recurring complaints from the contractors is the deficiency of the

rolling stock to meet all the demands.

When it is considered that the rails have now to be hauled much further than in former years, which necessarily takes a much longer period for each trip, and that there are now seven extensions, all going on at the same time, whereas we never had more than two before, also an unprecedented demand for timber wagons, it will be admitted that the delivery of new trucks has not kept pace with our requirements. The wagons available for rails have been added to within the last few months, but, as I have already pointed out in looking forward to this increased traffic, I have anticipated a much larger supply of "G" trucks than we have obtained. Until the supply of wagons can be increased I see nothing for it but to send men and unload the rails as they reach the point of delivery according to contract. Hitherto we have allowed the wagons to go on the extensions, and so long as we had plenty of them it was a saving to have the unloading performed by the consignee, but the saving is very little compared to the delay when the wagons are required. There is nothing, I presume, in the conditions of contract to compel us to continue doing so, and it was a saving to have the unloading performed by the consignee, but the saving is very little compared to the delay when the wagons are required. In the continue doing so, and it was a saving to have the unloading performed by the consignee, but the presented contracts an obligation on our part; with Commissional was a saving to have the unloading performed by the consignee, but the presented contracts an obligation on our part; with Commissional contracts and the contract to compel us to continue doing so, and it was a saving to have the unloading performed by the consignee, but the saving is very little compared to the delay when the wagons are sioner's approval, therefore, I propose to stop these rail wagons running on the extensions. I have also asked the Locomotive Engineer to have forty more (twenty pairs) "D" trucks made available for rails, and with these and the saving of time at the point of delivery, I am confident that all demands can be fully met, but it will still be necessary to push forward the "G" trucks.

Although it is not of much importance, there are other causes of delay. For instance, on 14th instant a large quantity of rails were loaded at Granville which I contemplated sending to the extension, and especially to Narrandera, as the supply there was all but out (and I have since heard the contractors were idle on 17th for want of rails), but at the last moment they were consigned by the Stores Department to Darling Harbour, where they have stood for some days, as consignees were not prepared to take delivery; but the principal cause, as I have said, is the want of rolling stock and the delay to wagons in the

contractors' hands. Commissioner.

W.V.R., 17/11/83.

For Commissioner's approval to stop trucks going forward on extensions the contractors are perpetually complaining, and it will much relieve the Department if we deliver according to contract, and save the delay of allowing trucks to go forward to head of road.—D.V., 21/11/83.

Minutes.

By Commissioner:—I do not wish to adopt a course which will, in its effect, prove to be worse than the existing arrangements; it would doubtless relieve the traffic Department of the charge that they are unable to forward the material, but by obliging the contractors to take delivery of the rails at the stipulated points for delivery instead of allowing the trucks to run on to the head of the road, as has been the practice, a greater evil may be created. No doubt the trucks are unduly delayed by the contractors, but the Traffic Manager should communicate with them, and point out the necessity for their returning the trucks at the earliest possible moment. A guard should be told off to go with the trucks when they leave our terminus, and to see that they are returned without delay.—Chas. A.G., 24/11/83.

Traffic Manager, B.C.—G.B., 25/11/83.

Report from Traffic Manager.

WITH reference to my minute of 17th instant as to stoppage of operations on Narrandera and Jerilderie extension, I had advice yesterday from Halliday, Owen, and Co. of their again being stopped for want of bolts and fastenings, and to-day they wire me as follows:—

"Kindly advise when fastenings will be here; we are waiting your reply before paying off our men

Superintendent of Stores advises me as follows:-

"We cannot supply what we have not got. We have run out of extension bolts and nuts, and have been keeping the contractors going as far as possible by borrowing a few from existing line stock. A shipment has now arrived in Sydney, however." I have informed the contractors accordingly, but it will be observed the want of rails has not always been the cause of stoppage, and I have had similar complaints before, and from other contractors than Halliday, Owen, and Co. The supply of rails may not have been always so good as I would have wished, but it has more than kept pace with the supply of fastenings, and at Narrandera the contractors had been compelled to lay several miles of rails fastened only by two bolts instead of

Commissioner.

W.V.R., 21/11/83.

Report of Traffic Manager.

In returning these papers respecting the short supply of rails at Narrandera I would simply remind the Commissioner that the sudden demand for bolster trucks to carry forward rails, bridgework, and timber connected with seven extensions and a heavy timber traffic in all directions was more than the rolling stock could provide for, and it was necessary to convert a large number of trucks intended for other traffic into the "bolster" class in order to keep pace with the demand. Even then, and notwithstanding constant vigilance, it was not possible to prevent occasional complaints, because the contractors had never much more than a hand to mouth supply, and the slightest hitch left them without any, or nearly so.

With regard to Messrs. Halliday, Owen, and Co., they wrote me on the 9th November as follows:—

"We beg to acknowledge the receipt of your letter of 7th instant, and are much obliged for the attention you have given to our request for the forwarding of permanent way material.

"With reference to your inquiry as to the lowest number of rails required to keep us going, we find we cannot do with less than 2 miles per week, or say, sixteen sets of bolsters, besides fastenings."

And during the nine weeks ending 12th instant, I find 155 sets were forwarded, or fully seventeen sets per week, so that the quantity they asked for has been already sent. The last of the rails available for the extensions were forwarded early last week, and for the last six or seven days the wagons have been employed conveying rails, for renewal purposes only, to Bathurst and Goulburn. The contractors must therefore come to a complete stand very soon, if they have not already done so. I have no knowledge of what may be on the way from England, but until a supply is obtained I can do nothing more for contractors. As stated in my report of 21st November, the contractors have frequently had to stop operations for want of bolts and fastenings, and although an attempt has been made to blame the Traffic Department for that too, it has been clearly proved that there were no bolts or fastenings in the country to supply to the contractors, and that for some time the works were only kept going by material borrowed from the Engineer of Existing Lines. I enclose copies of the telegrams, &c., received by me during November last, showing to what extremities the contractors were reduced in consequence.

In accordance with Commissioner's request I am now making inquiry as to the delay to our wagons

on the extensions.

W.V.R., 23/1/84.

[Enclosures.]

Telegram from Halliday, Owen, and Co.

7 November, 1883.

WE have telegraphed the storekeeper for bolts. We have none to go on with.

Message from Station-master at Narrandera.

17 November, 1883.

CONTRACTORS have written several times for fish bolts; only six cases were sent. Four miles of rails and only two fishbolts instead of four.

Telegram from Halliday, Owen, and Co.

20 November, 1883.

Our of bolts and fastenings; stopped for want of them.

Telegram from Halliday, Owen, and Co.

KINDLY advise when fastenings will be sent; we are waiting your reply before paying off our men and stopping the works.

Minute from Superintendent of Stores.

WE cannot supply what we have not got. We have run out of extension bolts and nuts, and have been keeping the contractors going as far as possible by borrowing a few from existing lines stock. A shipment has now arrived in Sydney

Telegram from Halliday, Owen, and Co.

26 November, 1883.

Kindly send bolts and fastenings; most urgently wanted; stopped for want of them. When will they arrive?

Message from Station-master.

9 December, 1883. HALLIDAY, Owen, and Co. are short dogs and fish-plates. What they have received have been chiefly screws. Mr. Owe informed me that Engineer-in-Chief says the blame is with the Traffic Department.

No. 19a.

Messrs. Halliday, Owen, & Co. to The Engineer-in-Chief.

Narrandera, 21 November, 1883. We have the honor again to bring under your notice the slow delivery of the permanent way Immediately after we began platelaying we were put to inconvenience on this account, and we material. find as we proceed the inconvenience becomes greater. At the present time we are stopped for want of fastenings, nuts being particularly wanted; six cases, equal to two days work, were sent to us on the 8th instant, and we have had none since. What we desire is that 2 miles of permanent way material be sent to us every week, and that sufficient fastenings be sent for the rails, so that we will not be stopped for want of rails at one time, and for want of fastenings at another. We trust that this matter will receive attention, as we are now hindered in our work and are suffering loss thereby, the best of our men are leaving, and general dissatisfaction is felt, owing to the repeated waiting for material.

We have, &c.

HALLIDAY, OWEN, & CO.

Minutes on No. 19a.

This difficulty appears to me to increase. Almost daily reports are received from some of the lines, complaining of delay in forwarding permanent way materials. I shall not be surprised if large claims are made by the different contractors for losses sustained from this cause. Forwarded for the information of the Minister.—J.W., 27/11/83.

Submitted, 28/11/83.—J.R.

By Secretary for Public Works:—I trust the Commissioner will urge upon his officers the need

there is for more prompt despatch of material.—F.A.W., 28/11/83.

I have been advised to stop the practice of allowing contractors to take the trucks to the head of the road, as they are much delayed thereby. It would be of greater advantage to us to unload the trucks ourselves at the places stipulated in the contract and allow the contractors to find their own means of getting the material to the head of the road. In this way the Traffic Department would be relieved of these complaints as they would be able to supply the material faster than the contractors could receive it, but my object is not to shift the cause of delay but to expedite the completion of the works. I have instructed the Traffic Manager therefore to continue the present practice, but to warn the contractors that they are responsible for the delay by unduly detaining the trucks and to urge upon them the necessity of expediting the return of them.

If, however, the Engineer-in-Chief is serious in his anticipations of claims being made, I shall have

to reconsider my determination to continue present practice.

If the contractors will return the trucks promptly the Traffic Manager states he could meet all Сн.А.G., 1/12/83.

By Secretary for Public Works:—For Engineer-in-Chief.—F.A.W., 1/2/83. See memo. of 20/12/83.—W.H.Q. Under Secretary, B.C.

The Engineer-in-Chief to The Secretary for Public Works.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office, Sydney, 20 December, 1883.

Delay in forwarding construction material and alleged detention of rail trucks by contractors.

REFERRING to previous correspondence and to the statement that the contractors "unduly detain" the rail trucks at the head of their roads, I have the honor to submit for your information three letters received

Messrs. Topham, Angus, & Co.—Goulburn to Cooma Railway., Fishburn & Morton—Wallerawang to Mudgee ,,

", Halliday, Owen, & Co.—Narrandera to Jerilderie Railway respectively, denying that the rail trucks have been delayed by them as alleged.

JOHN WHITTON.

Minutes.

Submitted.—J.R. By Secretary for Public Works:-For Commissioner's information.-F.A.W., 27/12/83.

$\lceil Enclosures. \rceil$

Fishburn & Morton to The Engineer-in-Chief.

Rylstone, 11 December, 1883. Sir,

In reply to yours of the 10th instant (83/2,008), we have the honor to state that we are not aware that rail trucks have ever been detained by us, having on all occasions sent back the empties by return train, and in the future we will also be as expeditious as possible in returning them.

Rystone, 11 December, 1000.

We have that we are not aware that rail trucks have ever been detained by us, having on all occasions sent back the empties by return train, and in the future we will also be as expeditious as possible in returning them.

FISHBURN & MORTON.

Messrs. Topham, Angus, & Co. to The Engineer-in-Chief.

Tarago, 12 December, 1883. We are in receipt of your memorandum 83-2,005, referring to our complaints of the slow delivery of permanent

way material.

In this memorandum you give, as the primary cause of delay in the dispatch of our material, the unwarranted detention of trucks by us at the head of our road.

In reply, we may state that we have never at any time detained bolster trucks an unreasonable time; we have on every occasion got the permanent way material unloaded with the least possible delay, and we do not think that the Department has any reasonable cause of complaint.

We are, &c.,

TOPHAM, ANGUS, & CO.

Messrs.

Messrs. Halliday, Owen, & Co. to The Engineer-in-Chief.

Narrandera, 12 December, 1883. In reply to your memo. of the 10th instant, referring to the detention of rail trucks at the head of the road by contractors, we desire to say that we have not in any instance detained the trucks and beg to enclose letter from the Narrandera Station-master to that effect.

We have, &c., HALLIDAY, OWEN, & CO.

Mr. D. Sheppard to Messrs. Halliday, Owen, & Co.

Narrandara Station, 13 December, 1883. In reply to your memo. of to-day's date re delay to Government waggons on extensions, I have never had occasion to complain of delay caused to any of our trucks by your firm.

Yours, &c., D. SHEPPARD

Minutes.

By the Commissioner:—The Traffic Manager will please report upon this representation at once. I must have a full answer, showing liow long the trucks were away after reaching their destination; please detach a good man to make the inquiry. A claim for compensation may be set up. There should be no difficulty in ascertaining when the trucks arrived at our terminal stations and when they were returned by This evidence will be more convincing than the statement of the traffic officers on the one the contractors. hand or the statement of the contractors on the other.

I suppose there is no question that if the trucks were unloaded by us on arrival at terminal station, they could be returned much more quickly to Sydney than they are under present arrangement

By Traffic Manager:—In connection with the recurring complaints of shortness of trucks, I found some time ago that the bolster trucks were frequently a much longer time away upon the extensions than they ought to have been, and that in fact the delay in getting the waggons emptied was alone sufficient to account for all the short supplies. The contractors, it so happens, have had on all the extensions to haul the waggons a long way from the end of the Department's rails, which of course must take longer time, but that is a matter this Department cannot recognize, and it is questionable whether we should not in future deliver the rails at this end of the extensions according to contract.

I wish you to visit Nyngan before leaving that district and to make up a return showing how long the wagons were in the possession of the contractors in each case for three months, say from 1st October. Give waggon number (waggons of rails only), date and hour of delivery to the contractors, and date and hour received from the contractors.

Inspector Simpson.

22/1/84.

The returns kept from October to 31st December, 1883, of the rail trucks for the various extensions show that as a rule these waggons were twenty-four hours on the extensions. At Narrandera in October and part of November the contractor unloaded the rails in the station yard, and when this was done I find the waggons dispatched loaded outwards on the day following their arrival, which would not have been the case if the waggons had proceeded on to the extension.—Robert Simpson, 11/2/84. Traffic Manager, Sydney.

By Traffic Manager:—I have had this matter very fully gone into with the result that on the Bourke and Cooma extensions our waggons have been greatly delayed. The statements prepared of the traffic for three months show that out of a total of 189 sent to the Bourke extension 86 have been delayed more than twenty-four hours; and on the Cooma extension 65 out of a total of 148 have been similarly treated. The delays have in some cases extended to ten days. On the other extensions—Mudgee and Jerilderie the delays have not exceeded twenty-four hours, but as a rule that is the time occupied by the contractor. Had we unloaded the wagons at the end of our rails, instead of giving the contractors the use of them, this delay would have been avoided, and there would have been no difficulty in keeping up the supply. Even as it is the supply of rails was exhausted long before the contractor's demands were satisfied, and for some time back the trucks we got specially made for this traffic have been idle so far as the carriage of rails was concerned.

W.V.R., 23/2/84.

No. 20.

The Superintendent of Stores to The Commissioner for Railways.

Tardy arrival of railways for extensions under indent, dated 9th October, 1882, for 647 miles of railway. I have the honor to report that only 390 rails (per "Potosi") have been received in satisfaction of the above indent, and only 1,153 more have been advised by the "Procida," now sixty-eight days out.

Two consignments ("Dallam Tower," 494 cases, "Star of India," 787 cases) of fastenings have been

We are now almost out of rails, and the extensions will I fear be stopped for want of them unless further consignments arrive very soon indeed.

A. RICHARDSON, Superintendent of Stores,

11/1/84.

Minutes on No. 20.

By Commissioner:—The contract stipulates that 2,800 tons shall be shipped per calendar month from 1st July to 31st December, 1883. At least 8,400 tons should have been in the Colony if this condition had been complied with, but not a hundred tons have yet been received.—CH. A.G., 15/1/84.

By Secretary for Public Works: - What does Commissioner advise in this case? I see by specification contractor is bound to deliver 16,854 tons of rails each year, but I cannot find any penalty for non-performance of contract. Bond is dated from 1883, but delivery is to commence in January of same -F.A.W., 16/1/84.

By Commissioner:—The Engineer-in-Chief should see these papers. It seems to me that if the rails are not sent out with more expedition some of the lines for which they are required will be delayed. cablegram should perhaps be sent to Agent-General, urging early shipment.—CH.A.G., 17/1/84.

13/2/84.

Should cablegram now be sent ?—J.R., B.C., 14/2/84. Railways.

By Commissioner:—What quantity of rails have been received to date, and what quantity should have been received? Include advices.—Ch. A.G., 14/2/84. Reply quickly. Superintendent of Stores. lude advices.—Ch. A.G., 14/2/84. Reply quickly. Superintender Herewith information required.—A.R., 16/2/84. Commissioner. G.B., B.C., 15/2/84.

By Commissioner :-

Quantity should have been received to date as per indent 150 miles of road per annum ... ` 9,828 tons. Rails received to date, 784 tons ... 1,990 " advised to arrive to date, 1,203 tons 7,838 Deficiency

I advise that the following cablegram be sent to Agent-General:—"By contract nearly 10,000 tons of rails should be here; not 2,000 either received or advised. Cannot supply contractors for extensions. Expect large claims for compensation."—CH. A.G., 18/2/84.

By Secretary for Public Works:—Approved.—F.A.W., 19/2/84. Cablegram sent, 19/2/84.

No. 21. Minute of Traffic Manager.

With reference to former correspondence relative to the conveyance of rails to the various extensions now in progress.

Our rail-carrying trucks have been comparatively idle for some time in consequence of there being no rails in the Colony to forward to the contractors; and it is reported to me that operations have now been stopped at Nyngan and Narrandera for want of rails.

W.V.R., 31/1/84.

Minutes on No. 21.

For the information of the Minister.—CH. A. G., 7/2/84. For Engineer-in-Chief's report.—F.A.W., 9/2/84. Mr. Whitton.—J.R., B.C., 9/2/84. The Superintendent of Stores has been requested to obtain rails from the stock at Newcastle, pending the arrival of rails from England. I hope there will be sufficient rail-trucks available to meet the requirements of the Construction Branch when the rails begin to arrive from England.—J.W. (per W.H.Q.), 13/2/84. Submitted.—J.R., 14/2/84.

rails begin to arrive from England.—J.W. (per W.H.Q.), 13/2/84. Submitted.—J.R., 14/2/84.

By Minister:—Who is to pay for the additional expense that will be incurred?—F.A.W., 14/2/84.

By Commissioner:—It will be charged of course to the capital vote, as it wouldseem that the AgentGeneral when making the contract with Cornwell & Co. for the supply of these rails did not stipulate for any penalty for non-fulfilment of terms of contract. Had he done so the additional expense would have been charged to the sum so recovered. I think, however, that the extra expense incurred should be ascertained, and the Agent-General requested to recover from contractors. In the mean time the capital vote is the only fund it can be charged to.—CH.A.G., 19/2/84.

By Secretary for Public Works:—Noted and approved.—F.A.W., 20/2/84.

No. 22.

Minute of Commissioner for Railways.

Delay in forwarding construction material.

I HAVE inquired into this matter very carefully, and find that though there have been occasional delays, they have not been of great importance, nor have they put the contractors to serious inconvenience. They were unavoidable in the absence of additional rolling stock, and it could scarcely have been foreseen that there would have been such a great demand from so many sources; it has been unprecedented, and is certainly not likely to occur again. There are seven contracts on south and west lines alone, and all at a stage requiring rails. It would seem from the Traffic Manager's report that in many cases it was not the want of problems that the work of feet wines for the want of the second of t of rails but the want of fastenings for the rails that the contractors complained of. This was owing recently to the non-arrival from England of these fastenings; but the urgency of the case was met in some degree by borrowing from the maintenance stock; but there is of course a limit to that.

The Construction Branch therefore has nothing to complain of in this regard. It is much to be regretted that there should be so much delay in obtaining supplies from England; had the English contractors observed the conditions of centract there would be plenty of rails and fastenings to forward; but if the works are greatly delayed it will be owing to there being no rails to forward. We are getting some from Newcastle (intended for the Northern District) at an extra expense, but there is great difficulty in obtaining vessels to carry them. Unless some improvement takes place in the quicker despatch of these rails from England the delay will be really serious, far exceeding the trifling delay that has occurred

through the great and sudden demand made upon the rolling stock.

Cr.A.G. 16/2/84. LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY CHARGES.

(ON GREAT WESTERN, NORTHERN, AND SOUTHERN LINES.)

Ordered by the Legislative Assembly to be printed, 25 March, 1884.

RETURN to an Order of the Honorable the Legislative Assembly of New South Wales, dated 13th February, 1884, That there be laid upon the Table of this House,—

- " A Return showing the relative charges made for parcels and agricultural
- " or pastoral produce upon the Great Western, Northern, and Southern
- "Lines, for up and down transit for 100, 200, and 300 miles."

(Mr. Targett.)

RAILWAY CHARGES.

RETURN of the relative charges made for Parcels and Agricultural Produce upon the Great Southern Western, and Northern Lines, for up and down transit for 100, 200, and 300 miles.

PARCELS.

Distance.	3 lbs. and under.	3 lbs. to 7 lbs.	7 lbs. to 14 lbs.	14 lbs. to 28 lbs.	28 lbs. to 56 lbs.	56 lbs. to 84 lbs.	84 lbs. to 112 lbs.	Each 28 lbs., or part thereof above 112 lbs.
100 miles	s. d. 0´6	s. d. 1 0	s. d. 1 6	s. d. 2 0	s. d. 2 6	s. d.	s. d.	s. d.
200 ,,	1.0	1 11.	. 2-10-	3 9.	; 4 8	; 5 8:	7 3.	1 9
300 ,,	. 1 5	2 10	3 10	5 3	6 .8	8 1	.9 8	2 4 .

The rates for up and down transit are the same, and so also are the rates for all lines.

AGRICULTURAL PRODUCE.

	,¹ Hay,	Straw and Chaff,	Hay and Straw,	Other Agricultural Produce.							
, Distance.	in truck loads.	in truck loads.	and Chaff, in less	'In truck loads of '6 tons.	In quantities of 1"ton and up to 6 tons.	Less quantiti than 1 ton.					
100 miles	£ s. d.	£ s. d.	per ton. £ s. d. 1 14 4	£ s. d. 2 18 6	per.ton £ s. d.	per ton. £ s. d. 1 14 4					
200 ,,	2 14 9	2 8 5	3 2 8	4.74	0 16 10	3 2 8					
	3 11 0	3 2:11	.4: 2 8	5 12 9	1 1 10	4 2 8					

REMARKS.—The charge for hay and straw and chaff, when carried in less quantities than a truck load, must not exceed the charge for a truck load. The charge for other agricultural produce, when carried in less quantities than 1 ton, must not exceed the charge for 1 ton. The rates for up and down transit are the same, and so also are the rates on all lines.

1883.

(THIRD SESSION.)

LEGISLATIVE ASSEMBLY. NEW SOUTH WALES.

RAILWAY TRAFFIC.

(AMOUNT OF DRAWBACK PAID TO WRIGHT, HEATON, & CO. DURING YEARS 1880-81-82.)

Ordered by the Legislative Assembly to be printed, 9 October, 1883.

Answers to Mr. Garvan's Question, No. 17, in the Legislative Assembly, on 31st May, 1883.

No. 1.—What is the amount paid during the years 1880-81-82, and in 1883, by the Government, on account of the Railway Department, to Wright, Heaton, & Co.?

Answer: The sum of £143 17s. was paid to Messrs. Wright, Heaton, & Co. in 1880, as a drawback upon clips of wool which that firm had diverted to Sydney. This firm had travelled the Riverina Districts, and found that the road and Railway charges on many clips of wool, as between its destination, being Melbourne or Sydney, was in favour of the route to Melbourne by a small sum only. The Department agreed with the firm that a rebate of 9d. per bale would be allowed on all wool which they could divert in the wool season of 1879 to our lines, previous clips of which had gone to Melbourne. This rebate of 9d. per bale represents the above sum of £143 17s.

No. 2.—Return of the amounts paid during 1880-81-82, and to 31st May, 1883, by Messrs. Wright, Heaton, & Co. to the Railway Department.

Lines.	1880.	1881.	1882.	To 31st May, 1883.				
Great Southern Line South-Western Line Great Western Line Mudgee Line Great Northern Lines	 £ s. d. 56,716 14 11 86,268 10 5 14,194 7 8 157,179 13 0	£ s. d. 53,903 8 0 10,038 15 7 122,429 18 3	£ s. d. 50,570 7 10 19,323 19 6 116,694 16 7 4,587 18 0 43,318 1 11 234,495 3 10	£ s. d. 20,670 8 8 10,207 12 9 43,768 15 0 3,601 14 4 20,708 6 5				

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY TRAFFIC.

(FORAGE FORWARDED FROM SYDNEY TO NYNGAN AND NEVERTIRE.)

Ordered by the Legislative Assembly to be printed, 16 January, 1884.

LAID upon the Table of the House in accordance with promise made by the Secretary for Public Works, in answer to Question No. 3 on Votes and Proceedings No. 28, of the 4th December, 1883:—

"The quantity of produce in the shape of Hay, Chaff, Lucerne, Flour, "Potatoes, Oats, and Corn respectively that has been forwarded from

"Sydney to Nyngan and Nevertire since the Railway was opened, and the

"amount received for trainage on the same."

RETURN showing the quantity of Hay, Chaff, Lucerne, Flour, Potatoes, Oats, and Corn forwarded from Sydney to Nevertire between the 20th October, 1882, and 1st December, 1883; and between Sydney and Nyngan from 9th June, 1883, to 1st December, 1883.

	Description.					. OI	peneo	Nyn 1 9th	gan. June, 188	3.	`			rtire. October, 188	32.	
			•			Weig	ght.		Amo	unt.		Weight.		Amour	nt.	_
			_			. t.	ċ.	q.	£	s.	d.	t. c.	q.	£	s.	<u>d</u> .
Hay	•••					47	11	3	45	19	4	24_14	1	26	10	4
Chaff	•••			,		74	19	2	88	18	5	20 11	2	25	3	6
Lucern	e		•••	•		. Ni	1.		Ni	1.		Nil.		Nil.		
\mathbf{F} lour	·		•••			5	13	2	6	9	5	53 10	2	60	3	1
Potato	es		•••		,	54	13	3	65	17	1	292 4	1	356	6	5
Oats	•••	•••				631	9	3	698	19	6	181 18	0	207	2	7
Corn	•••		• •••	•		3,136	11	2	3,428	17	5	1,716 5	3	1,787	11	3
	Total			,		3,950	19	3	4,335	1	2	2,289 4	1	2,462	17	2

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY TRAFFIC DEPARTMENT.

(NUMBER OF EMPLOYÉS, RATE OF PAY, HOURS OF WORK, &c.)

Ordered by the Legislative Assembly to be printed, 25 January, 1884.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 6th December, 1883, That there be laid upon the Table of this House a Return showing.—

"(1.) The number of men engaged on the staff of the Traffic Department at the Redfern Station, and the rate of pay their receive.

"(2.) The number of men engaged on the staff of the Traffic Department

"at the goods shed, and the rate of pay they receive.

"(3.) The number of men engaged on the staff of the Traffic Department "at Darling Harbour, and the rate of pay they receive.

"(4.) The number of hours these men are compelled to work daily.

"(5.) The number of men allowed from each place to attend the Picnic of

"the Traffic Department, on Monday, 26th November.

"(6.) The name of the person in charge of Darling Harbour Station, the amount of salary he receives, and the number of hours he is supposed to be in attendance."

	Foremen.	Signalmen.			Shur	iters.								Port	ers,					Sheet- repairers.	G	Vatchi and atekee	l	Total No. of men em-
Rate per day	12/-	10/-	10/-	9/-	8/6	8/-	7/6	7/-	11/-	10/-	9/6	9/-	8/6	8/-	7/6	7/-	40/- per week,	35/- per week-	30/- per week.	7/-	6/-	45/- per week.	per	ployed.
(1:) Redfern Coaching (2.) ,, Goods (3.) Darling Harbour	2	3	 1 1	5 1 6	1 2 3	5 2 7	15 4 -19		••• •••	2 1 1 4	1 1	1 2 3	 1 1	$\begin{array}{c} 7 \\ 16 \\ 9 \\ - \\ \hline 32 \end{array}$	18	33	1	 1 1	3 1 4	13 13	1	 1 5 6	1	152 80 127 359

(4.) Foremen and porters nine to ten hours per day, signalmen and shunters eight hours per day, and watchmen and gatekeepers ten to twelve hours per day.

•			No. of men who applied for leave to attend picnic.	No. of men allowed to attend picnic.
(5.) Redfern Coaching	 •••		15	13
" Goods Darling Harbour	 	·	 41	25

The men who attended the picnic from Darling Harbour were on the night staff, and did not require to apply for leave.

(6.) Charles Paull, £300 per annum and quarters, ten hours per day.

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LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY TRAFFIC.

(BETWEEN PICTON AND HARDEN.)

Ordered by the Legislative Assembly to be printed, 13 March, 1884.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 11th December, 1883, That there be laid upon the Table of this House the following Returns relative to the traffic upon the Great Southern Railway between Picton and Harden, from 1st September, 1883, to 17th November, 1883, viz.:—

- "(1.) The number of regular goods trains run on such section.
- "(2.) The number of special goods trains run on such section.
- "(3.) The number of drivers and firemen employed.
- "(4.) The number of goods engines employed.
- "(5.) The number of goods trains not running to time, and the cause thereof.
- "(6.) The number of engines recommended for repairs and still kept "running, and the reason why such repairs have not been effected.
- "(7.) The number of instances that engines have not been cleaned on "arrival at their destinations, and the reason for such neglect.
- "(8.) The number of times that drivers and firemen have worked more "than fifty-five hours per week.
- "(9.) The number of accidents that have occurred in working goods trains."

(Mr. Butcher.)

RAILWAY TRAFFIC.

RETURN respecting Railway Traffic between Picton and Harden.

- (1.) Question. The number of regular goods trains run on such section?

 Answer. 1,474.
- (2.) Question. The number of special goods trains run on such section?

 Answer. 391.
- (3.) Question. The number of drivers and firemen employed?

 Answer. 90.
- (4.) Question. The number of goods engines employed?

 Answer. 26.
- (5.) Question. The number of goods engines not running to time, and the cause thereof?
 Answer. 270 goods trains, or 14 per cent. of the total number run, did not keep time. The particulars of the delays are as follows:—

185, through unusual quantity of work at stations.

- 73, bad coal.
- 2, engines off road.
- 2, blocked by signals.
- 4, temporary failure of working gear of engine.
- 2, delayed by passenger trains.
- 2, through one division of a train overtaking another.
- (6.) Question. The number of engines recommended for repairs and still kept running, and the reason why such repairs have not been effected?
- (7.) Question. The number of instances that engines have not been cleaned on arrival at their destinations, and the reason for such neglect?

 Answer. Nil.
- (8.) Question. The number of times that drivers and firemen have worked more than 55 hours per week?

 Answer. 368, equal to four times for each man.
- (9.) Question. The number of accidents that have occurred in working goods trains?

 Answer. 3. Particulars of the accidents are as under:—
 - 1, derailment of engine at Colo Vale, through points being wrong.
 - 1, derailment of engine at Powrang, through the points being wrong.
 - 1, through second division of a goods train overtaking first division; resulting in slight damage to trucks. No person injured.

1883-4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY TRAFFIC.

(AT URALLA, FOR YEAR 1883.)

Ordered by the Legislative Assembly to be printed, 13 March, 1884.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 28th February, 1884, That there be laid upon the Table of this House, a Return showing,—

"The traffic done at Uralla for the year 1883, specifying goods, passengers, "and stock; also the amount of revenue earned during the same period."

(Mr. Copeland.)

GREAT NORTHERN RAILWAY.

RETURN showing Traffic at Uralla Station for 1883.

Pass	senger T	raffic.	Valu	e of Coa Traffic		Ģo	ods Tonn	ıage.	Value	of Goods	Traffic.					Live	Śtock I	'raffic	-,),			
In.	Out.	Total.	In.	Out.	Total	In.	Out.	Total.	In.	Out.	Total.	Ho	rses.	Cat	tle.	Sì	neep.	Pi	ga.	Amo	unt.	Total
,	,	100001				''''	046.	1000.	111.	Out.	10641.	In.	Out	In.	Out	In.	Out.	In.	Out	In.	Out	Amt.
No. 11,058	No. 10,076	No. 21,764	£ 3,644	£ 2,983	£ 6,627	Tons 12,146	Tons 10,086	Tons 22,232	£ 36,421	£ 10,513	£ 46,934		No. 42	No. 169	No.	No. 955	No. 1,068		No. nil.	£ 179	;£ 88	£ 267

Total revenue received at Uralla during 1883, -£53,828.

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LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAYS.

(TRAFFIC BETWEEN NEWCASTLE AND SINGLETON.)

Ordered by the Legislative Assembly to be printed, 21 · October, 1884.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 9th July, 1884, That there be laid upon the Table of this House, a Return showing,—

- "(1.) The average number of passengers travelling by the train leaving
- "Newcastle at 8 a.m. during each of the first six months of the present
- "year:-From Newcastle to West Maitland; from Newcastle to Singleton;
- "from Newcastle to stations to the north and north-west of Singleton;
- "from West Maitland to Singleton; from West Maitland to stations to the
- "north and north-west of Singleton.
- "(2.) The average number of passengers travelling by the train leaving "Singleton at 7.45 p.m. during the same months.
- "(3.) From stations to the north and north-west of Singleton to West
- "Maitland; from Singleton to West Maitland; from stations to the north
- "and north-west of Singleton to Newcastle; from Singleton to Newcastle;
- "from West Maitland to Newcastle.
- "(4.) The daily cost of running the trains at 7 a.m. from Newcastle to Singleton, and at 7.50 p.m. from Singleton to Newcastle.

RAILWAYS.

-	1	٦
1	T	ı

Tains	Passengers Newcastle to West Maitland.	No. of Passengers Newcastle to Singleton.	Passengers Newcastle to Stations north and north-west of Singleton.	No. of Passengers West Maitland to Singleton.	Passengers West Maitland to Stations north and north-west of Singleton.
	Daily.	Daily.	Daily.	Daily.	Daily.
Leaving Newcastle at 8 a.m	} 9	- 3	35	2	6

(2.)Leaving Singleton at 7.45 p.m. No. of Passengers daily. 75.

(3.)

Trains	No. of Passengers from stations to the north and north-west of Singleton to West Maitland.	No. of Passengers Singleton to West Maitland.	No. of Passengers from stations to the north and north- west of Singleton to Newcastle.	No. of Passengers Singleton to Newcastle.	No. of Passengers West Maitland to Newcastle.	
	Daily.	Daily.	Daily.	Daily.	Daily.	
Leaving Singleton at 7 45 p.m	12 .	. 3.	41	6	13	

^(4.) The estimated daily cost of running the trains, including wear and tear of line, use of train, &c., is £17 3s.

NEW SOUTH WALES.

GOVERNMENT RAILWAYS, NEW SOUTH WALES.

(MR. SCOTT'S (LOCOMOTIVE ENGINEER) VISIT TO ENGLAND AND AMERICA.)

Presented to Parliament by Command.

Instructions of the Commissioner for Railways to Mr. Scott upon his departure from Sydney for England and America.

WITH the approval of the Secretary for Public Works, Mr. Scott is proceeding to England and America, for the purpose of inspecting generally the machinery used and the plans of the railway workshops in those countries.

There are various matters which he might take a note of while on his tour, not only in regard to railway working and machinery, but in reference to tramway subjects,—for instance, the formation of the road for tramways, the forms of rail adopted, the design of cars, the systems of checking passenger fares, and in what respect they differ from our own,—the description of motive power used, to ascertain whether the tendency is to use mechanical in preference to animal power, and whether the prejudice heretofore existing against the use of mechanical power in the streets is not in a great measure being removed by practical experience of its advantage.

In connection with this subject, it will be desirable to note the topography of the towns and cities in which the tramways run; as, while in cities which are generally level tramways worked by horse power may be most desirable, they would not be of so much advantage, or indeed be workable, in places where steep gradients and sharp curves have to be encountered.

I shall be glad if inquiry be made as to what progress has been made in the designs of motors for streets, whether De Faur's system of stored electricity can be adopted, whether the air motor constructed under Megarski's design or Colonel Beaumont's is the better, and whether any improvements are being made at the Baldwin Works in regard to pneumatic motors. In Staffordshire, England, Mr. Scott will see at work on the street tramways Manning and Wardle's steam motors, which are pronounced to be the most successful yet introduced. Mr. Scott will visit Liverpool and Manchester, both of which places have adopted a system of running steam motors in the streets; and will also report upon the wire tramways which have been introduced at Liverpool, and upon that system generally of providing for street traffic.

As it is found that the motors used on the Camden Tramway are not sufficiently powerful for conducting the goods traffic over the steep gradients of that line, it is desirable that engines light and, at the same time, sufficiently powerful to work the traffic should be obtained. I should be glad if inquiry were made in England or America for an engine of this type, the weight of which must not exceed from 16 to 17 tons. Further, I should be glad if Mr. Scott would inquire into the system of tramways for the country, as subsidiary or branch lines to the main railways. They are said to be largely adopted in Denmark upon Mr. Rowan's scheme.

The importance, in the economical working of railways, of the reduction of the tare of vehicles and the increase of their carrying capacity, cannot be over-estimated, and I wish Mr. Scott to direct his inquiries into this matter, especially in America, where the subject has received and is receiving so much attention. There has been recently patented there a design for carrying grain in cylinders which are made to run on the rails without any framing—the heads of the cylinders are flanged and used as wheels. In view of the prospective increase of grain cultivation in this Colony for home consumption, and even for exportation, it is essential that every means should be sought to give cheap carriage to the sea-port; and one of the greatest aids to this object will be to obtain rolling stock which embraces large carrying capacity with comparatively light tare.

With regard to the main object of Mr. Scott's visit—the machinery used in workshops—Mr. Scott will see how far hydraulic power has been substituted for steam, and whether in the adoption of machinery for our shops it will be desirable to adopt either or both these systems. Mr. Scott will have the right of communicating with the Agent-General; but if not convenient at all times to take this course, he can send direct by cablegram to this Department any communication on matters of importance affecting the design

of the workshops in connection with any new machinery he may deem suitable. We should thus be informed in time to admit of the plans being altered, so that we could adopt any special equipment which Mr. Scott's inquiries may show to be desirable to introduce. Mr. Scott should take the ground plan and elevation of the buildings with him, to enable him to see how far the machinery he meets with in other countries—lifting machinery for the most part and overhead travellers—will be suitable for our workshops as now designed.

I should like Mr. Scott to obtain the rates of wages ruling on the various railways; he will have no difficulty in acquiring this information from the locomotive engineers and traffic managers. I wish him also to get some idea of the rates of charges for carriage, and the conditions affecting the charges in regard to length of journey, density of traffic, return loading, &c.

I should be glad if Mr. Scott, when in England, will see what arrangements are made on the various railways in connection with sick and accident funds for the employés, and what provision is made for retiring allowances for old and disabled servants. I am aware that on the North-eastern Railway of France a very excellent system has been brought into operation. The capital of the fund is made up by annual reductions of 2 per cent. from the wages of the men, and an equivalent amount is added by the Company. This fund is made use of in many ways for the present accommodation and future provision of the men and their families. The chief merit of the system is that it can be made—in fact is made—a kind of Savings Bank; because if the men desire to change their employment, or to retire from the service, or are even dismissed, the sum contributed by them is considered to be their own money, and is in no way estreated, beyond a small amount for the expenses of management. The men, therefore, have no dread that their contributions to the fund will, from some accident over which they have no control, or indeed from any misfortune or misconduct, be lost to them.

I have initiated a scheme in this respect for the benefit of the employés on our railways, and to this end have had compiled a statement of their length of service, ages, and rates of pay, and have ascertained what the capital amount of such a fund would have been at this time had the scheme been brought into operation when our railways started. All the facts and figures connected with the matter are now in the hands of an actuary, with a view of seeing on what basis the scheme can be brought into operation on our lines; but I should like to know how far such a scheme coincides with those adopted in other countries.

I shall be glad if Mr. Scott will pay some little attention to the interlocking apparatus, the systems in use for securing safety in the running—especially the block system—and the method adopted in working single lines of railway; and further, what improvements in advance of our system have been made in the systems of lighting railway carriages with gas.

As it is found difficult to obtain the services of competent spring-makers in the Colony, Mr. Scott might take the opportunity, when visiting America or England, to obtain through the Agent-General and on the best terms, two or three competent men for this work. In connection with this matter, I wish Mr. Scott to inquire into the merits of the recently patented concave steel springs, samples of which, in miniature, I herewith hand to him. By the simple contrivance of concaving the plates the strength of the spring is increased threefold; and if there be no blemish on the plan, of which I cannot see any indication, this form of spring will revolutionize existing designs, by cheapening the cost, reducing the weight, and increasing the elastic resistance. They are a Canadian invention. Mr. Scott will see from the papers herewith the name and address of the manufacturers, and the railway lines for which they have already been ordered. As our stock of water-cranes is getting short, Mr. Scott might also arrange for sending out as samples the most improved forms of these appliances now in use in the Mother Country. The stock can be manufactured here.

I am anxious to bring into operation some plan for the mental and intellectual improvement of the men engaged in the Department, and shall be glad if Mr. Scott will inquire into the arrangements made in the different workshops he may visit, in respect of providing the means for the improvement of the men, by the institution of libraries, establishing classes, &c. Mr. Scott might get an inventory of the books kept in such libraries, copies of the rules and regulations for their management, and probably could arrange with the Agent-General for the collection and forwarding of a nucleus of a library for our men. I wish to see also some improvement effected in respect of the conveniences afforded to our artisans and labourers while engaged at their work, by the institution of refreshment-rooms and the establishment of baths, &c., &c.

I am aware that these advantages for the men are provided by many of the large Railway Companies of England and on the Continent. It will not be necessary, however, that Mr. Scott should visit the Continent of Europe to acquire information on the subject of improved railway working, as the English Board of Trade has published recently the report of the Commission they appointed to inquire into the same subject, from which it appears that the English system of working is in advance of, and superior in all respects to that adopted on the Continental Railways.

In conclusion, I wish Mr. Scott to take notes generally on everything of interest and importance that he sees, with a view to his drawing up a report of his tour of inspection when he returns to the Colony. 15/6/82.

CHAS. A. GOODCHAP.

Mr.

Mr. Scott's (Locomotive Engineer) Report on observations made by him during his visit to England and America.

Railway Department, Locomotive Engineer's Office, Sydney, July, 1883. To the Commissioner for Railways.

In accordance with your instructions, I have endeavoured, during my brief visit to England

and America, to obtain information on every subject which in my judgment would be of interest and importance, and have now the honor to report the result of my observations.

I arrived at San Francisco on the 10th July, 1882. The first subject that engaged my attention was the system of street railways and tramways in operation there. Having a letter of introduction to Mr. Hallidie, the Engineer and Patentee of the Cable Railways, I was enabled to thoroughly inspect both their construction and working. There are five completed cable roads in full operation in San Francisco, all of which are double tracks. Those in Clay and California Streets are laid to a 3 ft. 6 in. gauge for a all of which are double tracks. Those in Clay and California Streets are laid to a 3 ft. 6 in. gauge for a distance of 11,000 ft. and 12,000 ft. long respectively, while a 5 ft. gauge is adopted for the lines in Sutter, Geary, and Presidio Streets, the respective lengths of which are 17,000 ft., 13,200 ft., and 5,000 ft. Claystreet is a central street, and is for several blocks densely thronged during business hours. This street is only 49 ft. wide from house to house; and, besides a double track to a 3 ft. 6 in. gauge, it has between the side-walks two lines of gas-pipe, one line of water-pipe, and a street sewer. Streets running at right angles to Clay-street, about 400 ft. apart, are all crossed on the level. The steepest grade in this street is 1 in 6.

The general arrangement of the Clay-street cable road (which may be taken as applying to all the roads constructed on this system) is as follows:—An endless steel wire-rone 3 inches in circumference.

roads constructed on this system) is as follows :—An endless steel wire-rope 3 inches in circumference, roads constructed on this system) is as follows:—An endless steel wire-rope 3 inches in circumference, 11,000 ft. long, is stretched the entire distance, lying in iron tubes below the surface of the ground, supported every 39 ft. on 11-in. sheaves. The rope is supported at every change of angle at the lower crossings on sheaves 4 ft. in diameter, passing round a horizontal sheave 8 ft. in diameter at the lower end of the line, and at the engine-house it passes around two angle-sheaves 8 ft. in diameter, which lead the rope on the grip pulleys, also 8 ft. in diameter, which are driven by one pair of 14×28-in. cylinder engines. The steam is furnished by one boiler 16 ft. by 54 in., which consumes 3,700 lbs. of coal a day. A duplicate engine and a boiler are kept in reserve. The grip pulleys being furnished at their circumference with jaws that grip and release the rope automatically, by the pressure of the rope in the jaws, prevent the rope from slipping, and being set in motion by the engine actuate the endless rope while travelling up one tube and down the other. In addition to the sheaves that support the rope in the tubes. at the upper side of each slipping, and being set in motion by the engine actuate the endless rope while travelling up one tube and down the other. In addition to the sheaves that support the rope in the tubes, at the upper side of each street crossing where the incline makes an angle upwards, there are sheaves in the tubes that keep the rope down. There is an opening in the upper side of the tube which runs the entire length of it, forming a long slot three-quarters of an inch wide. This slot is not immediately over the centre of the tube, but on one side of it, to keep sand and drift from falling on the rope, and enables the foot of the gripping attachment to pass by and under the upper sheaves, and over the lower sheaves in the tube. The connection between the cars on the line and the travelling rope is made by means of a gripping attachment fixed to a grip car or dummy, and connected by a thin steel bar, which passes through the narrow slot in the tube. The rope runs 17½ hours per day, at a speed of 6 miles an hour, and the cars start every five minutes, and, in some parts of the day, as often as at three minutes intervals. The rail used is an ordinary 30-ft. steel T rail, which is set on longitudinal sleepers, and is flush with the street, which is paved the entire width, so that it presents a smooth appearance.

The machinery is so arranged that the rope passes for some distance in view of the engineer, so that it can be easily examined at any time. There is a stretching arrangement at the lower end, which keeps a constant strain on the rope under all circumstances.

This system presents little impediment to ordinary street traffic, as the rope is grasped or released

a constant strain on the rope under all circumstances.

This system presents little impediment to ordinary street traffic, as the rope is grasped or released at pleasure, and is more easily controlled than any other system I have seen in operation. I was surprised with the ease with which the cars run on the steep grades, always travelling at a uniform pace whether ascending or descending them. The cars on the Clay-street line seat fourteen passengers, and the dummy cars seat sixteen passengers; but as many as forty-four have ridden in the car and twenty-six on the dummy. The cars are of the ordinary omnibus shape, minus the driver's seat, with a covered platform for the conductor at one end, and weigh empty 2,800 lbs.; and the dummy car, which weighs 2,100 lbs. empty, is shaped like an Irish jaunting car, the well or centre portion of which is occupied by the conductor, the gripping arrangement, and the brakes. The passengers sit with their backs to the well, facing the sides of the street. There are front and back seats extending the width of the car.

The cars on the 5 feet tracks are the same as those on the 3 6 lines, but carry thirty-six passengers

The cars on the 5 feet tracks are the same as those on the 3.6 lines, but carry thirty-six passengers The average life of a rope is about twenty months; it has a tensile strength of 160,000 lbs. to the

The following is Mr. Hallidie's estimate for construction and equipment of 3 miles, double

track, of his cable railway:-

Excavating trenches for tubes, placing and fitting tube and track, refilling and paving street	6,600 12,150 528 400 3,885 9,504 2,491 3,194 7,800 239 243	c. 00 10 00 00 00 00 04 00 00 36 00 16	\$	c.	
Cost of 1 mile double track complete Add 2 miles 3" flexible steel wire rope, 16,500 lbs., at 23c	48 104				
Total cost of 1 mile double track	\$51.899	56 \$15	5,698	6 8	

	\$	ċ.	`\$	' c.
2 horizontal engines, 14" × 30" set up		00		
2 hoilers 52" x 16 ft. set up	4,500	00		
Tank, pump, and heater	1,500	00		
Compensating arrangement at end of line	1,800	00		
Driving machinery, pulley, &c	6,500	00	•	
15 cars @ \$900 each	13,500	UU		
15 dummies, with grips, &c., at \$700 each	10,500	00		
		-	44,100	00
Building site, say	10,000	00		
Buildings	10,000	00		
			20,000	00
Engineering and contingencies, 10%	•••••		21,979	87
Total cost of 3 miles of double track complete Equal to about £50,300.		\$	241,778	55 -

The annual running expenses of working a 3 miles double track, at a speed of 6 miles an hour, 24 cars and 24 dummies, leaving every $2\frac{1}{2}$ minutes:—

	Ð	c.
Coal screenings, 970 tons, @ \$6	5,820	00
Wages of 1 engineer, \$1,200; and 2 firemen, \$1,200	2,400	00
Wages of dummy tenders, at \$2.50 per diem, \$912.50 per annum	21,700	00
Maintaining 24 cars, @ \$180	4,320	00
Do 24 dummies and grips, @ \$200	4,800	00
Do wire rope		00
Do engine and running machinery	3,000	00
Interest on cost of road, @ 6%	14,506	71
Thoses on cost of four, & 5/0		
Total	\$88,246	71

Equal to about £18,400.

In addition to the cable roads, there are a great number of horse tramways in the comparatively level streets, which travel at a speed of about 5 miles an hour. Some of the cars which carry sixteen passengers, all inside, are drawn by only one horse, and are of the ordinary bus type, with a platform for the conductor. Others of the same kind are drawn by two horses, and carry twenty-four passengers. They start every five minutes. The whole of the cars are carried on four wheels. The horse tracks are the 5-feet gauge. The rails, which are of various forms, are laid on longitudinal sleepers tied together by iron rods. The pitching of the road is on a level with the rails, so that it in no way interferes with the ordinary traffic.

I noticed that the wheels of many of the street vehicles rode on the rails with ease. The average running expenses of a horse tramway 3 miles, double track, speed $4\frac{1}{2}$ miles per hour, starting every $2\frac{1}{2}$ minutes with a stock of thirty-two cars, each seating twenty-two passengers:—

	ð	c.
Stable expenses and feed for 288 horses, @ \$180 per annum	51,840	00
Shoeing 288 horses, @ \$24 do	6,912	00
Maintaining harness, @ \$7.50 per set	1,080	00
Maintaining 288 horses, @ \$125 each, life three years, 36,000÷3	12,000	00
Maintaining 32 cars. @ \$180 per annum	5,700	00
Wages of drivers (32) (a) \$2.25 per diem, \$821.25 per annum	26,280	00
Wages of conductors (32), @ \$2.50 per diem, \$912.50 per annum	29,200	
Interest on cost of cars (32), @ \$900 each, \$28,000 @ 6%	1,728	00
Interest on cost of horses (288), @ \$125 each, \$36,000 @ 6%	2,160	00
Interest on road bed, \$32,000, @ 6%	. 1,920	00
	#100.000	

Thus it will be seen that the running expenses of horse tramways are 57 per cent. more than the cable roads, whereas the latter carry 50 per cent. more passengers, consequently there is a general desire to use mechanical power, of which the cable roads have the preference at present.

There are various systems of checking fares on the tramways. In some cases the conductor gives change to passengers and collects the fares, making a punch opposite the number on a piece of cardboard with 150 numbers printed on it (see Appendix), which, when full, he replaces by another. Another system is for the conductors to sell tickets, which they afterwards collect and punch. On the one-horse trams, where there is no conductor, the driver gives change to the passengers, who place the fare in a box near the driver's seat, somewhat similar to that adopted by the Sydney Omnibus Company,

The following are the ruling rates of wages paid by the Cable Railway Company of San Francisco:—

						Φ	c.		
Machinists	<i></i> .		•••		 	3	00	per diem	
Blacksmiths					 • • •	3	00	do	
Blasters		.:.	•••		 	2	50	$_{ m do}$	
Bricklayers	•••		•••	•••	 •••	3	00	do	
Carpenters			•••		 •••	3	00	do	
Hod-carriers					 ٠	2	00	do	
Gangers of		ers		`	 	2	50	$_{ m do}$	
Labourers			,,,,		 	1	50	do	
	•••								

The

The cost of materials used in construction of cable roads is as follows:-

Cast iron			•••		•••	3	cents	per lb.
Bar iron	•••		•••		•••	3	do	do
Sheet iron	١	• • •	•••	• • • •		$3\frac{1}{2}$	do	do
Galvanize	d iron		•••	• • •	•••	41/2	do	do
\mathbf{W} rought	iron		•••	•••	•••	8	do	do
${f Timber}$	•••		•••		•••	\$1	8 00	per 1,000 feet
Nails	•••	•••	•••		•••	-	4 50	per keg
Bricks	•••	•••	•••		•••	1	00 0	per 1,000
Lime			•••		•••		2 25	per bushel
Cement	• • •		•••	•••	•••		4 00	per 300 lbs.
Iron rails	•••	•••	•••	•••	•••	6	0 00	per ton
Coal	•••	•••	•••	•••	•••		8 50	do do

During my limited stay in San Francisco I visited the following:—The Pacific Rolling Mills, which were in full operation, making iron bars, rails, nuts, bolts, &c., also Prescott & Scott's Engineering Works. The shops are extensive, and some very fine tools are in use. The class of work appeared to be very good.

I also went over the works of the San Francisco Tool Company, where I observed some combination planing machines to plane 20 inches wide and 50 inches long, which perform the functions of both a planing and shaping machine. The overhang of this tool is the means by which the wide range of adaptation is given. The cutting force is the same, no matter what the length of the stroke may be, and the movement, which is strong and smooth, is effected by means of double-thread screws. No gear-wheels are used, and there was no noise in its operation. The driving-bands are moved differentially by a simple gearing, so that the tapples could not catch. The nut-bearings are from 12 to 15 inches long, the nuts being made of gun-metal, composed of four parts of copper to one of tin. The feed motion is operated by friction, and runs out of contact at each stroke, so that there is no loss of power, and the shifting arms are firmly locked in both forward and back strokes, to prevent the belts fouling by accident. Two or more tables are used, so that several pieces can be mounted and planed independently at the same time, or one piece can be fastened while another is being planed. This machine, which weighs about 2 tons, appears very strong, and through the danger of catching being averted it does not require such skilled workmen as the ordinary planing-machines.

There is a suspended drilling-machine made in these works which attracted my attention. The spindle is suspended from the floor-joists, and the sole-plate, swing-table, and stand for boring is fixed to a stone foundation in the usual way. Work of any shape or size can be performed by this machine, the operator having no difficulty in getting round his work. There is also a special screw-cutting lathe, with an improved arrangement for feed-gear which is both simple and effective. I obtained from Mr. Richards, the patentee of these tools, catalogues with quotations, and it is my intention to recommend that one of each be ordered as a trial.

Through the kindness of Mr. Bishop, the Commissioner for Harbours and Water-works, I was enabled to inspect the system of communication between San Francisco and Oakland Pier, where the railway station of the Central Pacific line is situated, and from which the overland journey to New York is commenced. The distance is 2 miles. It consists of two large two-decked steamers, 400 ft. long and 86 ft. beam, the cylinders being 65 inches and 12 ft. stroke, with paddle-wheels 42 ft. diameter and 10 ft. wide. The passengers are accommodated on the top deck, where there is a long saloon fitted with every comfort. Vehicles and luggage are taken on the lower deck. One of these steamers starts from each side every half-hour. There are other large steamers of the same class which have lines of rails on lower deck to a 3-ft. gauge. These are run in connection with a 3-ft. gauge of railway, which has a separate wharf at Oakland, and they also run every half-hour. On the 18th July I started on the overland journey. On arrival at Port Costa, 32 miles from San Francisco, we had to cross about 2 miles of water. This was done by running the train on to a steam punt, somewhat similar to those used between San Francisco and Oakland. This punt has four lines of rails on the deck, upon one of which the engine runs with as many carriages as the length of the punt will allow. A pilot engine then shunts on to the next track as many carriages as it will take, and so with the third track, after which it runs with the remainder of the train on to the fourth track, so that it is ready when they arrive at the opposite side to shunt the train into its original order ready for the journey. The aprons connecting the boats to the slips at Port Costa are 100 feet long, with four tracks. They weigh 150 tons each, and are worked by a combination of pontoons and counterweights, by hydraulic power.

On arrival at Sacramento I gladly availed myself of an introduction to the Manager of the Central Pacific Railway Company's workshops situated here, to inspect them. They are very extensive, covering 40 acres of ground, and are very complete. The general arrangement is that known as the long shop, with roads running through the centre. The lifting is done by hydraulic jacks. The engines are taken in and out of the shops by ground travellers, worked by an endless chain with several turns round the barrel of a steam winch, which is stationed at one end of the traversing pit. There are a number of very fine machine tools in use, and every appliance for turning out a large quantity of work. The buildings are principally of brick, with slated roofs. They build a large number of engines here for their own use, also nearly all the passenger and goods stock. The passenger engines on this line are of the usual American type, similar in general construction to our No. 105, built by the Baldwin Locomotive Company. The goods engines are of the consolidation class, somewhat similar to those imported by us from

the same firm, but I remarked that one of them had a four-wheel instead of a two-wheeler swing bogie in front, which is considered an improvement, and several were being constructed of this type when I was there.

	The weight of these engines in runni	ng. orde	er is				123,000 lbs.
-	The weight on driving-wheels	do		•••	•••		106,050 do.
•	Maximum pull of draw-bar on a 1 in	50 gra	de and	8-chai	n curve	s	22,500 do.
	Diameter of drivers, eight coupled	•••			•••	4	feet 6 inches.
	Do of bogie-wheels	,			•••	2	2 do 2 do.
	Hauling power, 19 loaded cars, equal	to			•••		$388\frac{1}{2}$ tons.
!	The diameter of the cylinder is	•••	•••	•••		•••	19 inches
1	The length of stroke is	•••	•••	•••			30 do.
	Driving-wheel base	•••	•••			1	5 feet 9 do.
•	Weight of tender in running order	•••			•••	• • • •	63,000 lbs.
(Capacity of tender		3,00	0 gallo	ns wate	r an	16 tons coal.
1	Total weight of engine and tender	•••	•••	•	•••		93 tons.

The passenger stock on the Central Pacific is of the ordinary American type, similar to those running on our lines, excepting the sleeper, a "Pullman car" which is fitted up in a much superior style to ours. The upper-deck sleeping-berths are shut up, with the bedding, into and form a portion of the roof during the day-time. The lower berths are formed from the seats in the same way as in our sleepers. The dining-car is of the same class as the one we have. The freight-cars are much longer than those in common use on English and Colonial railways. The covered goods waggons are about 30 feet long, carried on two bogic trucks each having four wheels. They weigh 19,860 lbs., and carry a load of 20,000 lbs. The ordinary flat freight car is also about 30 feet long, weighs 16,000 lbs., and carries a load of 20,000 lbs. The running sheds are circular, built of brick, with a central turn-table. Galena oil, manufactured at Franklin (Pennsylvania), is used for the engines. It costs 48 cents a gallon, and is favourably spoken of. Perfection valve oil, manufactured at the same place, which costs 70 cents per gallon, is used for the cylinders. Lard oil, at 90 cents per gallon, is also used for special purposes. The consumption of galena oil is one pint to 20 miles run. The coaling of engines is effected by running the coal waggons up to a high level platform, or coal stage, which is fitted with a number of box shoots capable of holding 10 and 20 cwt. each. These shoots are sufficiently high to allow the coal to slide into the tender, upon the trapdoor at the bottom being unfastened. An engine can be coaled from one shoot by refilling it as often as required, or it can be taken from one full shoot to another until the necessary quantity is obtained. I obtained copies of the mileage expense sheets, and other forms and tables, which will be valuable to the Department.

The following are the rates of wages paid in the shops of the Central Pacific Railway:-

Blacksmiths	•••	•••			from $1/$	to 1/3 pe	r hour
Boiler-makers	•••		•••		. 1/	to 1/3	do.
Fitters	···· .	•••	•••		1/~	to 1/3	do.
Carriage and wag	ggon b	uilders	•••	•••	•••	1/	do.
Painters	•••	•••		•••	•••	1/	do.
Engine-turners	•••	•••	•••		•••	8d.	do.
Do. cleaners		•••			•••	6d	do.

The mechanics work fifty-seven hours, and the drivers sixty hours per week.

Amongst the many things that engaged my attention in my inspection of these workshops was a very fine hospital for the use of the employés of the Company. It occupies the best site, and is both a beautiful and commodious building.

The necessity for the establishment of such an institution was caused through most of the men employed in the Company's service being strangers; and as the line passed through a sparsely-inhabited country, where little or no accommodation could be provided for those who, by the vicissitudes of climate, exposure, or accident, became sick or helpless, the Company concluded the wisest and most humane course to adopt was to build a hospital at the head depôt in Sacramento, where all the employés might be taken care of and restored to health as soon as possible, which action has led to most satisfactory results.

The hospital building was erected in 1869, at a cost of \$64,000. It consists of a main building, 60 feet by 35 feet, four stories and a basement, with a wide balcony at each story. The two wings are each 52 feet by 35 feet, the same height as the main building, with a large kitchen and other offices detached. There is a library of 1,500 volumes, also well appointed executive and medical rooms.

The institution is supported by every officer and employé of the Company contributing 50 cents per month from their pay as hospital dues. Every employé so contributing, in case he is taken sick or becomes disabled from injuries received while in the Company's service, is entitled to medical treatment or admission into the hospital, as required, not exceeding the length of time he shall have been in the employ and paid the hospital dues. The average number of patients treated annually for the last ten years was 445, and the average for the same period of those treated at the dispensary, &c., was 1,164. The total number of those treated for accidents during the same ten years was 1,349, or an average of 135 annually.

The staff of the hospital consists of a superintendent, a physician, a surgeon, and an assistant, one resident steward, one clerk, one cook with an assistant, one watchman, and three or more nurses, as may be required. In addition to the foregoing, there are permanently engaged good physicians and surgeons at San Francisco, Oakland, Stockton, Tulane, Los Angeles, Haricopa, Truckee, Reno, Winnemucca, Elko and Ogden, who receive no compensation except an annual pass for themselves and families.

Occasionally

Occasionally a small allowance is made when a large amount of work has been done. These positions are eagerly sought for, as they give the doctors prominence by enabling them to subscribe themselves the Company's physicians and surgeons. Their duties are especially to attend professionally to the passengers and employes who may be injured by casualties on the road within the prescribed limits of their practice. They are expected to do in surgery the first dressing, and give such other attention as may be necessary until the patient can be removed to the Hospital.

Notwithstanding that the lines of this Company are of great extent, there is very little difficulty Notwithstanding that the lines of this Company are of great extent, there is very little difficulty experienced in providing for and comfortably moving those who may be injured or overtaken by sickness. To show how liberally the patients are treated, I will mention one or two cases that came under my notice when going over it. One case was that of a man who had only served in a ticket office two years when he was stricken down with paralysis and had been in the hospital ten years. There was another case of over five years treatment of an employé who, in the discharge of his duties, after a short service, was injured by falling from a building. I was informed by the Manager of the workshops—and I have no doubt it is the case—that the establishment of the hospital was a great inducement to the men settling down and remaining permanently in the Company's service, and also had a tendency to make the men more faithful and attentive to their duties than they would be if such an institution did not exist. more faithful and attentive to their duties than they would be if such an institution did not exist.

Resumed overland journey, the weather being very hot and dusty, and notwithstanding that the

Resumed overland journey, the weather being very hot and dusty, and notwithstanding that the Pullman car in which I travelled was fitted with double-glass window frames, the dust penetrated.

The scenery over the Sierra Nevada is very grand, but I did not notice any works of magnitude except the snow-sheds and some high and very light looking timber framings to carry the line across the valleys. The highest point of the line is 7,000 feet above sea-level, and the steepest grade is 1 in 50.

The line is laid with 60-lb. steel rails of the Vignoles pattern, which are fastened to soft wood sleepers with dog-spikes. The sleepers are of different sizes, averaging about 8 feet long. The line is very poorly ballasted, in some places none at all was to be seen, and I remarked that nearly all the hands engaged in maintaining it were Chinamen. The switches used on this line are merely straight rails which are pulled over to the line or siding that they require to run on, the consequence being that at places engaged in maintaining it were Chinamen. The switches used on this line are merely straight rails which are pulled over to the line or siding that they require to run on, the consequence being that at places such as important stations where they are frequently used the ends of them become worn down flat and thereby cause a very unpleasant bump as each wheel passes over them. The platforms, which are chiefly constructed of wood, are much lower than those on English and Colonial lines, and only the important stations have any platforms at all. On arrival at Ogden, which is the end of the main line of the Central Pacific Company and junction of it with the Union Pacific Line, I visited the extensive railway workshops belonging to the Union Pacific Railway Company. They are well arranged, and showed some good tools. I saw the welding of iron tubes performed here very satisfactorily, also the renewing of files by a sand-blast. Chilled wheels for the waggons and many of the carriages on this line are made in these works. Paper wheels are used in most of the sleeping carriages. They are made at the Pullman Car Factory and Paper wheels are used in most of the sleeping carriages. They are made at the Pullman Car Factory, and are considered very suitable.

I took a run on the street tramways in Ogden. They are all worked by horses, the streets being particularly level. The steepest grade is 1 in 30 for a short distance only. The cars are similar to those used on the horse tramways at San Francisco. The fares are taken by conductor, who brings round a box with a glass front, by which means the fare can be seen as put in by each passenger.

On arrival at Omaha, I observed that several one and two-horse tramways are run in the streets,

which are very level.

I visited the locomotive workshops, and was kindly shown over them by the Chief Draftsman. The lifting of engines was effected by hydraulic jacks, no overhead travellers being used. The engines are taken in and out of the repairing shop by a ground traverser. The engines are stabled in round sheds with central turn-tables.

Galena and lard oils are used for locomotives, and black oil for carriage and freight car bearings. The coaling arrangements are similar to that at Sacramento.

The engines are of the ordinary American type, and appeared to be kept in good condition.

The carriage and freight car depôt is an extensive place. The vehicles are taken in and out of the shops by ground traversers. I noticed some very elaborate painting on some of the cars, a large number of which were being renewed.

Bronze metal is much used for carriage bearings.

I arrived at Chicago, the terminus of the Main Union Pacific Line, on the 26th July. I was astonished at the network of railway lines running in all directions from this wonderfully busy city. Some of the stations are very large, covering in one case over 100 acres, and in another 80 acres. Branch lines are laid to all points on the 'banks of the river, to the canal, stockyards, &c. All the lines which enter Chicago are connected by a line called the Central Railroad. A cable road is laid in State-street, which is almost dead level and very busy. It is a double track, laid to a 5-feet gauge for a distance of

The tube in which the rope runs is deeper than in San Francisco, being 4 feet deep. The rope is placed 30 inches above the bottom, thus allowing for an accumulation of snow, which drifts through the slot. The road-bed being soft and yielding, it needed a broad base of concrete to sustain the superstructure, hence the expense of constructing this road was heavy. The rope used is made of Swedish iron. It is 4 inches in circumference, and has six strands of nineteen wires. All the driving and angle pulleys are 12 feet in diameter.

The engines are two "Wheelock" pattern, having 24-in. cylinders and 20-inch stroke. The rope is run at 8 miles an hour. This line is worked round a square at one end, making a return by way of Maddison-

street, Wabash Avenue, and Lake-street to State-street.

The dummies and cars are of similar construction to those used in San Francisco, but it is usual for one dummy to haul two or more cars as required. As many as 35,000 passengers are carried daily on this line.

In addition to the cable railways there are a number of horse tramways in this city which carry a large number of passengers daily. The drivers sell tickets to passengers, which they afterwards collect and punch; and the punched tickets and money must tally. I visited the locomotive workshops, Chicago, and Rock Island Railway, which are 20 miles from the city. They are very extensive, and I saw many things of interest there. I was not, however, particularly impressed with the facilities provided for carrying on such extensive works. The lifting of engines is done by means of hydraulic jacks. The repairing shops have cross ground travellers. A very old plan is adopted for taking the wheels out of the engines. The engine is placed over a pit, into which the wheels are lowered, and after the engine is moved the wheels have to be lifted out, which is a very tedious process, and is certainly no improvement on lifting by jacks.

There is a large round running shed built of brick, with thirty pits. The arrangements for coaling

engines are somewhat similar to those at Sacramento before described

The carriage and waggon shops are also very extensive, as they build all their own rolling stock. Chilled cast iron wheels are used in the waggons on this line. They are cast on the works. Paper wheels are used in many of the carriages. The springs chiefly used on this line are made by A. French & Co., of Pennsylvania. The passenger cars are coupled up by Miller's Patent Central Buffer and Platform Coupler. Some fitted in this manner run through from San Francisco to Chicago and New York. The best black oil, which costs $4\frac{1}{2}$ d. per b, is used for tender axle-boxes, and paraffin and lard oil for the engines. Some patent Babbits Metal is used, also a large quantity of bronze bearings, which were very highly recommended. I next paid a visit to the goods station, where I saw a grain car known as the "Prosser cylinder car." This car is run on two cylinders, 8 feet 5 inches long and 7 feet diameter, which Angle-irons are riveted on the cylinders to fasten the tires. The only car of are made of boiler-plates. this type that I saw was lying at the end of a siding empty. The frame-work was rather rough, and it had no springs under it. I was informed by Mr. Prosser that there were others working on the line, but I did not see them. In reply to inquiries I made of several railway officials as to their usefulness, I ascertained they were not held in much favour. I noticed that if there should be anything in the forefoot these cars could be easily rolled off the track. Each cylinder holds 250 bushels of grain.

I next visited the noted Pullman Car Factory, which is very properly designated the "City of Pullman," after the founder, George M. Pullman. It is about 20 miles from Chicago. The shops are very extensive, and are both substantial and elegant. The chief carriage erecting shop is 700 feet long and 86 feet wide. There is another erecting shop, 400 feet by 86 feet. The waggon shops are 500 feet by 86 feet. Paper car wheel shop is 370 feet by 150 feet; iron machine shop, 103 feet by 200 feet; blacksmiths' shop, 200 feet by 128 feet; steam-hammers shop, 250 feet by 160 feet; wood-working machine shop, 200 feet by 200 feet; drying kiln, 150 feet by 90 feet, besides dry timber, coal and stationary engine houses. They are built of different-coloured bricks, which have a pleasing appearance, and are furnished with the very best tools and appliances for carrying on the building of cars, in fact everything connected with these works is so complete that it is at once evident to a visitor that no expense has been spared to make them perfect. There are two ground travellers worked by steam for taking carriages in and out of the shops. The shop machinery was driven by a pair of Bedone stationary beam engines, with Corlais valves, which surpassed anything I had seen. I ascertained that these engines were used for driving the machinery in the Centennial Exhibition at Philadelphia. French & Co.'s springs are extensively used by this Company for their carriages.

I closely inspected the cars built at these works, and found both the workmanship and material to

I closely inspected the cars built at these works, and found both the workmanship and material to be excellent. They are 60 feet long, with a private compartment at one end for ladies, and a smoking saloon and lavatory at the other. The dining cars built here are also well fitted with every requisite for comfort and convenience, and the workmanship and material in them are most creditable to the Company.

This Company forge their own carriage and waggon axles, and also make paper wheels for their

Bronze bearings and some patent metal are used in them.

The Pullman sleeping cars, which are more extensively used than any other on the American lines, have sleeping accommodation for twenty-six persons, but the berths are sufficiently large to allow of two being accommodated in each on an emergency. These cars weigh about 35 tons. They have never less being accommodated in each on an emergency. These cars we than twelve and some have sixteen wheels, eight at each end.

Although I could have profitably spent more time in Chicago, where so much connected with railways was to be seen, I did not consider it desirable with the limited time at my disposal to stop longer,

more particularly as I had obtained the information I specially required.

On the journey from Chicago to Philadelphia I was much impressed with the solid and substantial construction of the Pennsylvania Railroad, as compared with any of the American lines I had yet travelled over. The sleepers are all oak, of large size, laid 3 feet apart from centre to centre. The ballast is limestone, laid to a depth of 18 inches. Steel rails weighing 67 bs. to the yard, of the Vignoles pattern, are bolted to the sleepers

A great part of this line has four roads, two for passenger and two for goods traffic. At several places along the line there are troughs constructed of strong boiler iron, about 14 inches wide, 15 inches places along the line there are troughs constructed of strong boiler iron, about 14 inches wide, 15 inches deep, and 1,000 feet long in the middle of the track, or fore-foot, which are kept full of water, from which the tender is filled in a few minutes by means of a shoot or spout (which is lowered by the fireman into the troughs on the journey). The fireman has to be watchful so as to run the spout clear of the water immediately the tank is filled, or it would overflow the foot-plate in a few seconds. With the express train on the journey between Chicago and Philadelphia we ran 117 miles without stopping, through the engine taking water from the trough as we went along. Having separate roads for the goods traffic is a very great advantage, as the goods trains are never in the way of the passenger traffic, consequently they are able to take very heavy loads through making their own time. I observed a large number of the consolidation class of engines similar to those imported by us, drawing goods and coal trains, and through consolidation class of engines similar to those imported by us, drawing goods and coal trains, and through the line being comparatively level they had great loads. The cars on this line are of the ordinary American type previously described, and are fitted with the "Janney coupler," which is said to be the strongest and closest fastener used on any of the American railways. The Wharton patent switch is in general use here. This is the only American line where I saw the interlocking system adopted, and even here it is only in operation at important stations, junctions, &c. The Westinghouse air break, automatic, is adopted in the passenger stock. The trains are worked on the block system, signal towers for which are along the line at intervals of every few miles. No sooner has a train passed one of them than a disc by day and a red light by night appear in a target over the track to show that a train is on the section ahead, and the driver of the following train must not pass this signal until the "red" slowly falls out of sight, leaving the clear white signal, showing that the preceding train has passed block station ahead.

Having reached Philadelphia, my first inquiry was about street railways and tramways. All those in operation were worked by horse traction. A cable road was, however, in course of construction. The streets are level and wide. The trams do not go up and down the same street, but all run (say) south in

one street and north in the next, and they run east and west in like manner.

The Baldwin Locomotive Works are situated in the city, occupying several large blocks. They are very extensive, and are laid out to the very best advantage. Over 3,000 hands are employed sixty hours per week, and even with this staff they are unable to keep pace with the orders received. This firm can turn out ten locomotive engines per week, and in the cooler weather when overtime can be worked they can exceed this. Everything is done here in a most systematic manner, and so far as arrangement of details, which is so essential in arriving at great results, they cannot be excelled. The lifting in the erecting shop is done by very powerful hydraulic jacks, and in the boiler shop by an overhead steam traveller. I observed some very fine hydraulic and steam riveting machines, of which those worked by hydraulic power are preferred. After the tube-holes are punched in the plates they are trued out with tube rosebits in the drilling machines. I also noticed many improvements in securing of the cotters, in the connecting and coupling rods, over those in the engines supplied to us, which makes them much more secure. Two of Davis's stack and spark-arresters were being put in engines in course of erection, by the express directions of the parties for whom they were being built, and who had an interest in its success, but in the opinion of the Baldwin people, "there was nothing in it." I ascertained from the Managers, who gave me considerable information on account that they considered would be of interest to make the considerable information on account that they considered would be of interest to make the considerable information on account that they considered would be of interest to make the considerable information on account the state of the content o who gave me considerable information on everything that they considered would be of interest to me, that no later improvements have been made in the motors now built by them over those supplied for our

tramways.

I next visited the extensive machine and tool-manufacturing works of Sellars & Co., which are quite close to the Baldwin Works. A large number of superior tools are made here for the principal railway workshops. There is a novelty here in the way of foundations for machinery, &c.: cast-iron plates are planed and laid down the entire length of the shops, in rows about 6 feet apart, which are considered are planed and laid down the entire length of the shops, in rows about 6 feet apart, which are considered an excellent substitute for stone, concrete or brick-work. I made inquiries about the class of tools

required for our new shops, and obtained full particulars, including prices, &c.

Accompanied by Mr. Sellars, sen., I went over the Edgemoor Ironworks, which are situate about This is a noted place for bridge and boiler-making work, a large quantity of A very large number of hydraulic cranes and riveting machines are in use 20 miles from Philadelphia. which was then in hand. They have rolling mills connected with the works, which are very extensive, and well furnished

with appliances suitable for their class of work.

I took a trip by rail to Atlantic City, distant about 90 miles from Philadelphia. It is a wateringplace much resorted to in the season. There are several lines in competition for the traffic, so that it is a question of which makes the journey in the shortest time. We travelled 50 miles an hour. On the return journey I rode on the engine, the motion of which was by no means comfortable, and I was rather pleased when the journey was over. Bement & Sons' tool-making shops were also visited by me. I

obtained a copy of their catalogue, &c.

The Pennsylvania Company have a large locomotive depôt at West Philadelphia, which is quite a model, both as regards arrangement and the order in which it is kept. There is a very fine round brick running-shed, capable of holding forty-two engines; there is also an extensive engine-repairing shop, in which the lifting is performed by hydraulic jacks. Large carriage and waggon-repairing shops are here also. The principal workshops for this Company are situated at Altoona, which is 237 miles from Philadelphia; they are the most extensive in America, covering between 90 and 100 acres of ground, about 5,000 men being employed in them. Having heard a great deal about the superior class of work turned out at these shops I was specially anxious to see them, and having done so I am pleased to say they are quite entitled to the flattering reports I heard of them. It is at once evident that no expense has been spared in providing suitable buildings for the work of both engine-building and repairing, as also for the building of carriage and waggon stock, all of which are carried on here extensively.

The new erecting shop is 351 feet long, with two spans of 66 feet each, and three roads through it. Overhead travelling cranes worked by ropes, which were made by Wren & Hopkins, of Liverpool, England, run the entire length of the shop, for lifting engines off their wheels. There is a new machine shop same size as the erecting shop, and alongside of it, in which walking cranes driven by ropes are

provided for lifting wheels, &c.

The machine tools in use are all of the very best make, whether English or American.

There are three large round brick sheds, with forty-four stalls in each; one of them is used as an engine-running shed, another as a smiths' shop, and the third as a paint shop. Upon inquiry I was informed that paraffin and lard oil in equal quantities, which cost 3s. a gallon, are used for engines. The ordinary gas which is taken from the town main is used for lighting the carriages on this line. It is pumped to the holder and compressed to 300 lbs. on the square inch. The carriage and reagan halding and repositing shops are distant shout 11 mile from the

waggon-building and repairing shops are distant about $1\frac{1}{2}$ mile from the engine shops, communication to which is effected by means of a horse tramway.

The waggon shop is a semi-circular brick building, with forty-four stalls in it. There is a wrought-iron turn-table 75 feet in diameter, worked by a small locomotive, with a vertical boiler on a circular track in the turn-table pit. The shunting of the waggons in and out of the shop is done by a small locomotive of the ordinary type. There are also very extensive long shops for car-building, of which a large number is turned out annually. herides which there is a very extensive shop for wood working mechanics of is turned out annually; besides which there is a very extensive shop for wood-working machines, of which there are a great many of the best description for this class of work. The wheels of the carriages and waggons were all cast-iron, but the Manager informed me he thought of introducing wrought-iron. Bronze metal is generally used for bearings, and also in many of the valves, and is very highly spoken of.

A very large stock of timber suitable for carriage and waggon building is always kept, so as to

have it properly seasoned before being used in the passenger and goods stock.

The Locomotive Superintendent of this Company has an able staff of Professors of Chemistry and Physics, who have large practical knowledge in addition to their scientific attainments, in his department, whose sole duty it is to put everything used in the works to the test, in what is termed the department of

" experiment.

All departments of the road refer to this branch for information respecting points falling under their special supervision: an opinion upon a new coal mine as a source of supply, difficulties with coal supplied, questions involving the draught of engines, difficulties with oil, either in burning or in lubrication, the quality of soap used in washing cars, questions from traffic department as to dangerous and explosive freight, questions about the chemistry of iron used in manufacture of wheels, as well as reports on all kinds of materials purchased by the Stores Department. Although all branches of the department obtain 37—B information

information here, the testing branch is under the direction of the Locomotive Superintendent. The expenses of the testing department, as compared with the ascertained advantages gained by it, are trifling. The following are some of the many results attained by the application of the chemical tests, which, to my

mind, are of such importance that I give them in extenso.

Tallow.—It has been discovered that any soap or saponified tallow is injurious to iron subject to high temperature and pressure. Under these conditions the iron does not saponify good tallow; it may, however, replace caustic soda, which has previously replaced glycerine. In other words, tallow, with a small portion of soap, is injurious to iron, when no injury would have resulted if neither free acid nor soap had been present. Tallow is saponified to "sweeten" it and destroy the odour of the rancid acids.

had been present. Tallow is saponified to "sweeten" it and destroy the odour of the rancia across.

Lard oil.—No oil tested is regarded as more important than this, because it is used in nearly all lamps. Cotton-seed oil injures the burning qualities, and is liable to burn the wicks. It is possible, for example, that a serious accident might occur at a switch through the failure of a pointsman's lamp, whose wick had become gummed by cotton-seed oil. As much as 25 per cent. of cotton-seed oil has been discovered in lard oil, furnished even by firms whose reputation would be considered a guarantee as to the purity of the article furnished.

-Even the quality of the soap supplied has become a matter of importance—a single washing with a certain soap having destroyed the varnish on cars. Investigation shows that free caustic alkalies are very destructive to varnish; and specifications for soaps now require that they shall not contain more than from ½ to 1 per cent. of free caustic alkalies, or more than 1 per cent. of alkali carbonates.

Steel rails.—The investigations made as to the composition of steel rails of greater or less

durability have been attended with most beneficial results to the Company.

Without going further into details, I may state that the following have been investigated: the best composition of varieties of iron for chilled work, the introduction of electricity for lighting of cars; pig and wrought iron for chemical composition as cause for physical peculiarities, steel bearings, &c., &c.

Physical tests.—The best commentary on these are the following extracts from the conditions of some of the specifications to which the materials for the Company have to be manufactured.

Steel axles.—For every 100 axles ordered 101 must be supplied, from which one will be taken at

random and tested as prescribed.

Two test-pieces will be cut from an axle, and the test sections, of $\frac{5}{3}$ inch diameter by 2 inches long, may fall at any part of the axle, provided that the centre-line of the test section is 1 inch from the centre line of the axle. Such test-pieces should have a tensile strength of 80,000 lbs. per square inch, and an elongation of 20 per cent. Axles will not be accepted if the tensile strength is less than 75,000 lbs. nor the elongation below 15 per cent., nor if the fractures are irregular.

The axles must stand, without fracture, five blows at 20 feet of a 1,640 lbs. weight striking mid-

between supports 3 feet apart, the axle to be turned after each blow.

Iron axles.—The iron must be double rolled from muck bar not exceeding \(\frac{3}{4} \) inch in thickness. It must be tough, fibrous, uniform and free from scrap. Such axles must stand without fracture three blows at 10 feet and two blows at 15 feet of a 1,640 lbs. weight striking midway between supports 3 feet

apart, the axle being turned over after each blow.

Boiler and fire-box steel.—After each sheet is carefully examined to see that it shows no mechanical defects, a test-strip taken lengthwise from the sheet without annealing should have a tensile strength of 55,000 lbs. per square inch and an elongation of 30 per cent. in section originally 2 inches long. Sheets will not be accepted if the test shows a tensile strength less than 50,000 lbs. or greater than 65,000 lbs. per square inch, nor if the elongation falls below 25 per cent. Manufacturers must send one test-strip for each sheet, &c.

Coupling-links and pins, crank pins, iron for bridge works, &c., &c., are all tested in a somewhat similar manner, which tests are the result of careful study of each material.

Lubrication.—Samples of oils which they are prepared to supply are obtained monthly from competing houses. These are tested as to comparative lubricating value for journals running under ordinary conditions of pressure and temperature. The pressure is assumed to be 250 lbs. per square inch, and the temperature 100° F. The test is made on a Thurston machine which has been counter-weighted and further improved by running through the journal a graduated stream of water sufficient to reduce its temperature to 100°, or that of the average car journal in motion. The conditions of the journal are further approximated to those of the car by working the bearing into that lateral motion characteristic of car bearings. Special attention is also given to the condition of all surfaces; the proper temperature of the journal is attained by running with standard oil (without the use of water to cool); the surfaces are cleaned with benzine, a measured quantity of the oil to be tested is placed on the waste, the journal is run at the rate of a car wheel making 15 miles per hour, and readings of the amount of accumulated friction, as shown by the reading of the scale, are recorded every five minutes for one hour. shows the friction by the deflection of the counterweighted beam attached to the bearing from its normal centre of gravity.

The results attained by this machine, although not claimed to be scientifically accurate, give practical results which are uniform when repeated trials of the same sample of oil is tested; it therefore furnishes a standard of comparison. The tests made by the chemical department include flashing point

and purity

A dynamometer car is one of the implements of the department. Tests are made by it of the draught of engines; the car occasionally indicating that the shortcoming of one engine of a class in failing to pull a standard load is within the bounds of cure by additional weight on its drivers. Its principal use, however, has been the test of proposed changes in road in comparison with present grades and curves.

I arrived at New York on the 10th August, and I immediately laid myself out to get all the

information I could about construction and working of street railways and tramways.

The elevated railways are the only mechanical means of locomotion which I saw in operation in the They are very extensive, 350 engines being engaged on them, which are all tank engines, built and makers carried on four coupled wheels, with a four-wheeled bogie in rear. The size of streets. They are very extensive, 350 engines being engaged on them, which are all tank engines, built by different makers, carried on four coupled wheels, with a four-wheeled bogie in rear. The size of cylinders is $11'' \times 16''$. Ordinary coal is used. Trains run every few minutes, the speed of which is about 15 miles an hour. Some twenty of the engines used when the lines were first opened are now laid up, through not being powerful enough for the traffic. The train generally consists of two cars similar to the ordinary cars used on American railways. Some of the cars have longitudinal seats on the sides only.

The

The roads are double track to a 4.8½ gauge (one on each side of street), carried on wrought-iron columns about 18 ft. high and 20 ft. apart, with brackets on each side extending about 3 ft., carrying longitudinal wrought-iron girders, upon which wooden sleepers about 6 ft. × 8 in. × 6 in. are laid about 3 ft. apart to carry the rails, which are of the T shape. A wooden fender is laid on end on sleepers outside rail, which stands about 8 in. high, thereby making it almost impossible for an engine or car to leave the track. The supporting columns are built in solid masonry, on a rock or stone foundation, about 12 ft. below the level of the street. When the streets dip suddenly the columns stand much higher out of the ground and have a proportionately deeper foundation, in addition to which iron cross girders are used for staying one road to the other. The line is, as may be supposed, very rigid, and as a consequence is very trying on axles, several of which have broken, but fortunately with no serious results.

The stations or waiting-rooms are about one-third of a mile apart, are neat structures about 10 ft.

square, carried on neat iron columns over the footway, the ascent to which is made by metal stairs.

The platforms are carried on columns similar to those which support the road, and are about 100 ft. long and 6 ft. wide, with a neat iron railing at side and end. They are level with the car platforms.

Immediately a passenger reaches the top of staircase (which is level with platform) he pays his

fare to a man stationed there and gets a ticket, which he places in a box with glass sides fixed to a post in view of another official. After all the passengers enter the cars the conductor closes a light iron gate

across platform at end of cars, which is not opened until the next stopping-place is reached.

In addition to the elevated railways there are tram-lines in several of the streets which are drawn by horses, the speed of which is about 4 miles an hour. The cars are both single and double-decked. The single-deck cars can carry twenty-two passengers, and the double-deck cars carry forty-two passengers (twenty-two inside and twenty outside). They stop to take up and set down passengers as required, the same as our 'buses. The types of rail used in horse-tramways are various, weighing from 40 to 45 lbs. to the yard, and are laid on longitudinal sleepers, which are tied together with iron rods.

I went to New Jersey, where the locomotive building-shops of Rodgers & Co. are situated. They are very extensive, and are considered next to the Baldwin works in importance. The work done appears to be very good, and is highly spoken of. A large number of engines are built weekly, both for American Companies and foreign orders. One portion of the shops is quite new having been built to replace what

Companies and foreign orders. One portion of the shops is quite new, having been built to replace what had been destroyed by fire. The new buildings are three stories in height. The bottom flat is a turning and fitting shop; the second story is used as a pattern and engine cabin-making shop; and the top floor is a machine-shop, fitted with the most modern labour-saving tools. Through want of communication by rail, the work of delivering engines has to be done by horse-power, on large lorries specially made for the

purpose

On the journey from Montreal to Quebec I travelled in one of Davis's sleeping and parlour-cars, which differs in many particulars from the Pullman or the ordinary sleeping-cars in use on our lines. It is 65 ft. long, and is carried on two six-wheeled bogies of an improved type, upon which it rides remarkably smooth. There is a ladies' compartment at one end of the car and a smoking saloon at the other, both of which are fitted with lavatories, &c., &c. The fittings are all electro-plated, which has a very pleasing effect. The windows are large and give an excellent light; they have neat blinds on patent rollers. The mattresses and bed-clothes are kept in ornamental cupboards, which project from the sides between the windows, which tend to improve the appearance of the car very considerably. The chairs, which revolve on a centre pivot, have steel frames hinged so as to admit of them being folded up and placed under the sleeping berths when required. The mattress-frames are also made of steel, and make a very comfortable bed.

Then arrived at Montreel Legaled at the Depôt of the Canadian Pacific Reilway: and having most

Upon arrival at Montreal, I called at the Depôt of the Canadian Pacific Railway; and having most carefully inspected the design, workmanship, and material, of the Davis sleeping car, I approved of the building of two for the Department, in accordance with your directions. The locomotive, carriage, and

waggon shops of this Company are small, and I did not remark anything particularly interesting in them.

The locomotive and carriage and waggon workshops of the Grand Trunk Railway of Canada are about 2 miles out of Montreal, and cover a very large area. The locomotive repairing and erecting shops, which are built of brick, are long shops with a ground traveller in the centre of a number of roads which run at right angles on both sides of the traveller. There is an overhead crane at one end of the shops, where the engines are taken to be lifted off the wheels, which are then run out and the engine lowered on to trollies, when they are run down the shop to a pit where the repairs are done, upon completion of which the engine has to be taken back to the traveller and lifted to receive the wheels. boiler shop is also a very extensive place, in which there are some very fine hydraulic tools; one in particular, a punching and shearing machine by Richard Tweddell of London, was very highly spoken of. There are large shops for smith-work, pattern-making, turning, foundry, &c. A very large amount of work is done at these works, but in consequence of a comprehensive plan allowing of expansion not having been adopted in the setting out of the shops at the commencement, the additions which it was found necessary to make to them from time to time to meet their requirements are by no means the most suitable consequently considerable inconvenience and expansion are above to the most of the services. suitable, consequently considerable inconvenience and expense in working them is the result. The carriage and waggon shops are very large, and well equipped with machine tools, &c. A very large quantity of timber for carriage and waggon building is kept on hand, so as to have it well seasoned before being used. The running sheds are all circular brick buildings, with a large turn-table in the centre. A number of the engines on this line are of English build, but the great majority are of American build.

and goods stock are of the American type, carried on bogie trucks.

The ordinary cast-iron chilled wheels are used in the goods waggons, and the ordinary type of wheel with wrought centres, and steel tyres are used in the passenger stock. A quantity of patent metal is used here, as also bronze metal for slide valves and bearings. I was shown a very beautiful carriage which was specially built to convey the Directors and superior officers of the Company over the lines. It is about 60 ft long carried on two six wheel bogies and here a select private sleeping morner and a is about 60 ft. long, carried on two six-wheel bogies, and has a saloon, private sleeping-rooms, and a smoking compartment. The fittings and trimmings of this carriage clearly indicated that cost was not a

On my return to New York, I called on Mr. C. A. Smith, the Secretary of the Association of Master Car-builders of America, from whom I obtained very useful information in reference to the most suitable class of goods stock for railways. He furnished me with a copy of the report of the fifteenth Annual Convention of the Master Car-builders' Association, held in New York, in June, 1881. The report of a Committee appointed to investigate and report on the carrying capacity of freight cars is a very valuable document, and the information afforded is of such importance that I give it in extenso.

REPORT OF COMMITTEE ON THE CARRYING CAPACITY OF FREIGHT CARS.

To the Members of the Master Car-builders' Association.

At your last annual meeting the undersigned were appointed a Committee to report upon the 'Carrying Capacity of Freight Cars," and whether it can be safely increased above 20 tons.

In March last we mailed the following circular to 500 railway managers, superintendents, master

car-builders and master mechanics:-

New York, March 30th, 1882.

At the last annual meeting of the Master Car-builders' Association, the undersigned were appointed a Committee to obtain information with reference to the carrying capacity of freight cars, and to obtain the opinion of railway officers as to the advisability of increasing that of freight-cars above

It is only a few years since freight-cars were allowed to be loaded with more than 10 tons. At the present time but few eight-wheel cars are built with a carrying capacity of less than 20 tons. From this fact we infer that 20-ton cars can be run as safely as 10-ton cars, and that freight can be transported with

greater economy in cars that have the greatest carrying capacity.

The increase of freight traffic upon our leading railroads, during the last five years, has been very large, and if it had been necessary to transport it in 10-ton cars the expenses for motive power and train men, cost of maintenance of the greater number of cars, &c., would have been enormous. Road-beds and bridges are made more substantial than in former years. Locomotives have of late been made of enormous weight and power, and such locomotives are so successful and satisfactory that railway managers still continue to build them. If these heavy locomotives can be run without serious injury to road-beds and bridges, are there any objections to increasing the load of freight cars, when there are so many adventages to be exceeded with any bright of the relationship with an form and triding chiestings? many advantages to be gained thereby, with so few and triffing objections?

The following are considered a few of the most important advantages that may be derived in transporting any given amounts of tonnage in 30-ton cars:

Less cost of cars. Less cost of repairs.

Less dead weight.

Less number of waybills to make.

Shorter trains, shorter side tracks.

Less coupling and uncoupling of cars, and damage to drawbars and fixtures.

Less number of brakes to operate. Less number of journal boxes to oil. Less number of wheels to inspect.

Less train men, and many other smaller advantages.

The following table, showing the number of cars and parts of cars required to transport 1,000 tons of freight, with their cost, weight, length, &c., will show the great economy in the use of cars having the greatest carrying capacity. The cars taken are box-cars.

	With 10-ton cars.	With 20-ton cars.	With 30-ton cars.
Number of cars to carry 1,000 tons	100	50	34
Weight of cars to carry 1,000 tons	1.000 tons	550 tons	412 tons
Length of train to carry 1,000 tons	3,100 ft.	1,550 ft.	1,440 ft.
Cost of cars to carry 1,000 tons	\$57,000	\$30,000	\$21,450
Number of brake shafts, levers, and connection to carry 1,000 tons	500	250	170
of brake heads, shoes and wheels to carry 1,000 tons	900	450	306
of brake beams to carry 1,000 tons	200	100	68
,, of draw-bar stops to carry 1,000 tons	1 800	400	272
,, of draw timbers and fixtures to carry 1,000 tons	400	200	136
,, of draw-bars to carry 1,000 tons	200	100	68
of bolster and draw-springs to carry 1,000 tons	600 .	300	204
,, of journal-bearings to carry 1,000 tons	l 800	400	272
,, of journal-boxes to carry 1,000 tons	l 800	400	272
,, of axles to carry 1,000 tons	l 400	200	136
,, of wheels to carry 1,000 tons	l 800	400	272
Weight of trucks to carry 1,000 tons	450 tons	250 tons	175 tons

In order to make a report on this subject, the Committee are obliged to obtain information with reference thereto from practical railroad men. They will therefore be greatly obliged if you will give your opinion upon this matter and answer the following questions:—

1st. Have you found any difference in the wear or breakage of wheels under 10 or 20 ton cars ?

2nd. Are the wheels under your 20-ton cars of greater weight than under 10-ton cars. If not, do you think they should be?

3rd. Have you found any difference in the wear of journal-bearings upon 10 and 20 ton cars?

4th. Have you found that journals under 20-ton cars wear out faster than under 10-ton

5th. Have you had more hot boxes under 20-ton cars than under 10-ton cars?

6th. Have you found it necessary to use more expensive oil upon 20-ton than under 10-ton

7th. Have repairs to draw-bars and fixtures and other repairs under 20-ton cars been greater than for 10-ton cars?

8th. Do the bodies of 20-ton cars show greater deflection from their original lines than 10-ton cars?

9th. Have the 20-ton cars increased the repairs to road-bed, rails, or bridges?

10th. In your opinion, can freight-cars of 34 and 40 feet in length be run as safely as shorter

11th. In your opinion, can the carrying capacity of freight-cars be increased from 20 to 25 or more tons with greater economy than to carry freight in 20-ton cars?

12th. If the carrying capacity of freight-cars should be increased to 30 tons, would you recommend journals and axles to be made larger than the Master Car-builders' standard, and that wheels be increased in weight?

13th. Can a locomotive draw 1,000 tons of freight over your road, in 20-ton cars, with reater economy than in 10-ton cars?

About 100 replies have been returned to the above circular; about one-third of these were from General Managers and Superintendents.

In some cases the Master Car-builder or Superintendent of Motive Power filled out the blank, and

the General Manager or Superintendent approved of it.

Your Committee are of the opinion that a careful discussion of this matter by our members should be had, and would be pleased to have you recommend to Railway Managers that they build a few cars with a carrying capacity of 25 and 30 tons.

Below the Committee gives the replies to the thirteen questions:-

1st question.

36 have found no difference in wear or breakage.

2 have found a difference in both.

7 have found no difference, but expect wheels to wear out faster.

8 have found a slight difference in wear, but no more breakage. 2 say wheels under 20-ton cars make as much mileage as under 10-ton cars.

3 say more wheels break under 20-ton cars than under 10-ton cars.

2nd question.

27 say of no greater weight, and need not be.

3 say a first-class 500-lb. wheel is heavy enough for 20-ton cars.

10 say wheels for 20-ton cars should weigh from 525 to 575 lbs.

5 say they should be heavier, as cars are often loaded above their marked carrying capacity.

5 say they are heavier, and should be.

3rd question.

30 have found no difference in wear.

10 have found a slight difference in wear.

7 have found them to wear faster.

7 say the wear must be greater.

1 says the wear must be greater and the journals should be larger.

10 say the difference is in favour of 20-ton cars over 10-ton with small journals.

4th question.

28 have found no difference in the wear of journals.

9 say they do wear faster.

3 say a slight difference.

4 say the wear must be greater.

5th question.

42 answer no.

7 say they have no hot boxes with Master Car-builders' journals.

1 says hot boxes point that way.

6th question.

48 use the same quality of oil on all cars.

7 say they use a better quality of oil.

7th question.

2 say they have not, but expect less repair per ton per mile.

43 say they have not been greater. 5 say repairs have been slightly greater.

1 says repairs depend upon length of trains.

1 says they are greater on account of heavier engines.

8th question.

47 say they do not.

3 say a slight difference.

Many say no perceptible difference upon cars well built.

9th question.

2 say no, as less wheels pass over the track per ton per mile. 11 think the repairs must be greater.

14 answer no.

19 say they do not know. 4 say probably slightly. 4 say not perceptibly.

10th question.

29 say there is no doubt about it.

5 say they cannot.

5 prefer shorter cars.
2 cannot answer the question.

2 say 30-foot cars are long enough. 2 say 32 ,, ,, ,

5 say 34

2 say 35

1 says 40-foot cars would be easier and safer on the track.

11th question.

23 have no doubt that it would be economy to increase the carrying capacity to 25 or more tons.

11 say 20 tons is load enough for one car. 1 says it could be increased to 30 tons.

1 says the journals could not be kept cool.

2 say by increasing the load you make less cars and trains do the same work

2 are doubtful.

2 advised to stop at 20-ton cars at present.

12th question.

29 would recommend an increase in weight of wheels and size of journals.

6 would recommend for 30-ton cars a 4 × 8 journal. 9 say there is no necessity for an increase of either.

10 would increase the weight of wheel, but not size of journal.

3 would increase the size of axle.

13th question.

38 say there is no doubt about it.

3 say it can, saying nothing of less cost of cars, less repairs, &c.

1 says it can at a moderate speed. says 25 per cent. cheaper.

thinks 20 tons is load enough. 2 say it would make a difference of two trains per day over their road.

3 say it can, as the train would be shorter and lighter.

says it can, as it would take less motive power.

says it can, and the point is the number of tons of freight, drawn instead of the number of cars.

says he cannot tell.

1 says no.

Quite a number have not answered many of the questions. Too many have simply said no and yes.

In conclusion, your Committee would say that, in their opinion, FREIGHT can be carried in 30-ton cars, with as much safety and greater economy than in cars of less carrying capacity, and would recommend that any Company building 25 or 30-ton test cars increase the weight of wheels to 575 lbs., and use the Master Car-builders' standard axle or one of a larger size. (See Diagrams A, B, C.)

Committee $\begin{cases} C. & A. & SMITH. \\ J. & N. & MILEHAM. \\ C. & E. & GAREY. \end{cases}$

Having given a general outline of the places I have visited in America, I will now briefly summarize my views on the most important matters that came under my notice.

1st. The description of engines, and their suitability for the work they have to perform:

All the engines have bogie trucks in front, which carry from 30 to 40 per cent of their total weight. The ordinary passenger engines weigh with steam up and in running order from about seventy to seventy-five thousand pounds. They have 18-inch cylinders and 24-inch stroke, and have four driving-wheels coupled, of from 48 to 53 diameter. The wheels are of cast iron, with steel tires. The fire-box

wheels coupled, of from 4.8 to 5.3 diameter. The wheels are of cast iron, with steel tires. The fire-box is made of steel, and the boiler-tubes of iron; the quality of the steel and iron used in them is very superior. The cabs are more spacious and afford better protection for driver and fireman than those generally found on English-built engines. The lamps are very large, and give a brilliant light. The tenders, which are carried on two four-wheel bogies, are generally larger than those built in England. The Westinghouse air-breaks are in use in the passenger engines only. These engines both steam well and run smoothly, and are well adapted for the lines they run on and the work to be performed.

The goods engines are generally of two classes. The smaller class have six wheels coupled, the diameter of which is from 4 feet to 4 feet 6 inches, about same weight as passenger engines. The larger type, or consolidation class, have eight wheels coupled, of similar diameter, the weight of which, including tender, is about 75 tons in running order. All the engines have a very showy appearance, and appear to steam well and run easily. The goods engines have hand brakes only. All the engines are fitted with spark-arresters, somewhat similar to those in our engines. Patents are continually being taken out for so-called improvements, but from what I saw and heard they have not got anything likely to supersede what have been supplied to us by the Baldwin Company. Generally the engines are well adapted for the work they have to perform, and they run a good mileage considering the class of lines they run over.

Passenger cars.—The ordinary cars are 45 feet long, which are carried on two four-wheel bogie

Passenger cars.—The ordinary cars are 45 feet long, which are carried on two four-wheel bogie trucks, one at each end. They weigh about 40,000 lbs., of which 27,000 lbs. is in the car body, and 13,000 lbs. in the bogie trucks. The number of passengers which they can seat is fifty-two, so that the dead weight per passenger is 770 lbs. The wheels are nearly all cast iron, 33 inches in diameter, and weigh 540 lbs. each. Paper wheels are used in some sleeping and other special cars. The whole of the passenger stock that I saw had centre couplings and buffers. The trains generally gave evidence of the stock being well kept in every respect. The clean appearance of the cars is of course to be attributed to stock being well kept in every respect. The clean appearance of the cars is of course to be attributed to the fact that when not in use they are placed in sheds, and so kept free from the effects of the weather. The cars composing a train are very rarely uncoupled unless for the purpose of repairs, so that an entire train is run into a shed when the journey is finished until again required. The fittings and workmanship of the cars generally are very good. The timber used in the construction of the cars is all well seasoned, so that very little shrinkage is visible.

Goods stock.—The freight cars are generally much longer than on English and Colonial lines. The ordinary box freight car, corresponding with our covered goods waggon, is 28 feet long, and is carried on two bogies, each having four wheels. It weighs about 20,000 lbs., of which 11,500 is in the body and 8,500 in the trucks. The wheels are 33 inches in diameter, and weigh 540 lbs. This truck carries a load of 20,000 lbs. The ordinary uncovered freight car is 30 feet long, and is carried on bogie trucks similar to the box car. It weighs 16,000 lbs.—the body being 7,500, and the bogie trucks 8,500 lbs., and carries a load of 20,000 lbs., so that the dead weight moved for each ton (2,000 lbs.) is 1,600 lbs. The brakes are all worked by hand, with a small wheel from the tops of the trucks. Centre buffers and couplers are in general use on goods trains. The wheels are all cast iron. The timber used in the building of goods stock is principally

principally Oregon, so that the bodies of the cars are much lighter than our stock in proportion to their size. Although the gauge of the railways is similar to ours, the trucks are very much wider (8 feet 6 inches), which enables them to carry a bigger load. This could not be done to the same extent with our

stock, as the high platforms would not admit of it.

Stations and platforms.—The subject of station accommodation has engaged much attention, and the necessity for having sufficient ground has been so forced upon the notice of Railway Companies, by the rapid growth of some cities and towns, that all the modern stations have plenty of accommodation for a long term of years. The buildings at most of the terminal and other important stations are in many instances very handsome and well laid out. * The arrangement of booking-offices, waiting-rooms, &c., is generally well adapted for conducting a large traffic and for the convenience of passengers. refreshment-rooms are, as a rule, conveniently situated, commodious, and well furnished.

Baggage checks.—The system of checking passengers' baggage is most perfect, rendering it next to

an impossibility for anything to go astray. There is nothing so astonishing to an English traveller as the perfect manner in which it is carried out. Notwithstanding what he may have heard about its working, he

cannot but be agreeably impressed by the trouble and uneasiness spared him.

I have obtained full particulars as to the system by which the baggage department of the Central

Pacific Railway is governed, including rules, &c.

Signals.—On many of the American lines signal towers are used, which are round structures about 12 feet in diameter at the bottom, tapering to about 8 feet at the top. They are different heights, according to the requirements of the line.

There are two revolving signals on each side of the tower, one for the up and the other for the down line.

The colours used for the signals are the same as on our lines.

Tanks.—Many of those that came under my notice were constructed of wood, with an india-rubber

hose connected.

Corrugated Hutchinson spring.—I made particular inquiries as to the value of the concave spring which was brought under your notice, but I failed to learn anything of it until I reached Montreal, where the patentee resides, and from my observations of its manufacture I do not consider it is likely to come into general use.

Star metal bearings.—Although there is a large quantity of metal bearings used on American rail-ways this particular brand was not even heard of in the States, and it is not, so far as I could ascertain,

used anywhere but on the Canadian lines.

I left New York by the "Servia" on the 31st August, and arrived in Liverpool on the 7th Sept. To recapitulate particulars of the several workshops which I visited in England and Scotland would, I feel assured, be only troubling you with unnecessary details; I shall therefore confine myself to a brief statement of their leading features and objects of special interest which came under my notice in

LOCOMOTIVE WORKS OF THE GREAT NORTHERN RAILWAY.

These shops are of the old type, and adjoin the Doncaster Station-yard, from which, in addition to their own engines, a number belonging to other Companies arrive and depart daily. There are little of the modern appliances for carrying on extensive works to be seen here; in fact they reminded me of the Redfern Works (of course on a much larger scale), in so far as the traffic requirements having absorbed nearly all the ground intended for locomotive purposes, the consequence being that the want of space sufficient to admit of a much needed reconstruction and better arrangement of the shops is a matter of serious consideration with them.

The fitting and erecting shops are long buildings, with roads down the centre from end to end. Over-head travellers, worked by ropes, are used for lifting engines, &c.

The running-shed is a long building with a number of roads in it.

There is a superannuation fund established for the payment of superannuation and other retiring

allowances to the salaried officers and servants of the Company who contribute to the fund.

The following officers and servants of the Company are entitled to participate in the benefits of this fund, viz.—The principal officers, and their assistants, and clerks; the station-masters, booking-clerks, inspectors, ticket-collectors, guards, foremen shunters, draymen, policemen, signalmen, time-keepers, shop foremen, and engine-drivers.

Servants of any other grade may be admitted by the Managing Committee to the benefits.

The members are divided into two classes; those receiving £80 per annum and upwards being in the first class, who contribute $2\frac{1}{2}$ per cent. of their salaries to the fund, to which the Company add an equal amount. The contributions cease when a member retires.

The following are the benefits

If the health of a member fail before he shall have contributed for ten complete years to the fund and he be compelled to leave the service, he shall receive back the whole of his contributions with simple

interest on the amount, at the rate of 4 per cent.

If the health of a member fail after he has contributed ten years to the fund, and before he shall attain the age of sixty, and he be thereby compelled to leave the service, he will receive superannuation allowance in proportion to the period during which he shall have contributed at the rate of 25 per cent. of his average salary for the first ten years, and 1 per cent. additional, for each year, up to fifteen, when 2 per cent is added for two years (16 and 17), and 1 per cent on each year up to twenty-four years, when 2 per cent is allowed for one year, and so on up to forty-five years' service, when a member would be entitled to 67 per cent. of his average salary; but in no case shall a pension exceed

£500 per annum.

With the consent of the managers of the fund, any superannuation allowance to which a member is entitled may be commuted at any time for a gross sum, approved of by the actuary, or in accordance

with the scale fixed by him.

If a member were to die after having contributed ten years to the fund, and before being superannuated, his executors or administrators receive a sum equal to one half-year's average salary of such deceased member.

If a member voluntarily retires from the service of the Company before the time he would be entitled to superannuation allowance, he receives back one half of his contributions to the fund, without interest.

If a member be dismissed by the Company, through misconduct, he forfeits all claim on the fund;

but the managers have the power of returning all or any portion of his contributions, without interest.

The second class officers contribute 1 per cent. to the fund, to which the Company add a like amount, and the benefits are proportionately similar to those paid to the first class, provision being made for transfers from one class to the other, on a member's salary being increased to or beyond £80 per annum. All the members' contributions are deducted on the salary sheets.

There is a sick and funeral allowance fund for the benefit of the servants of the Company who

are not eligible to join the superannuation fund, who are classified into five classes, viz.:-

Class A.	to consist	of those in receipt	of 25s.	per week	and u	pwards.
do. B		do.	20s.	under	25s.	per week.
do. C	ďo.	do.	15s.		20s.	
do. D	do.	do.	12s.		15s.	
do. \mathbf{E}	do.	do.	7s.	do.	12s.	do.

The subscription being 2d., 4d., 7d., 9d., and 11d. per week respectively, no portion of which is returned in case a contributor leaves the Company's service.

The following are the benefits afforded: Medical attendance on contributor, his wife, and his children (under 14) not earning wages.

	Class A,	Class B,	Class C,	Class D,	Class E,
	per week.	per week.	per week.	per week.	per week.
Sick full paydo. half-paydo. quarter-pay	10s.	16s. 8s. 4s.	12s. 6s. 3s.	s. d. 7 0 3 6 1 9	s. d. 3 6 1 9 1 0

-On death of a contributor, £10, £7, £5, £4, £2,

On death of a wife in husband's lifetime, £7, £5, £4.

Full pay on the sick allowance scale does not in any case exceed twenty-six weeks, after which half-pay is allowed for a similar term, and quarter-pay for twenty-six weeks, after which, seventy-eight weeks, he has no further claim on the funds.

BEYER, PEACOCK, & Co.'s WORKS, MANCHESTER.

This is one of the most extensive and important locomotive engine building workshops in England,

several thousand hands being employed in them. They have a high reputation for the quality of the work.

The shops and offices cover 15 acres of land, and an additional 15 acres have recently been purchased to admit of their being largely extended. Very fine new offices are already in hand, and quite a number of additional above contemplated, which will much facilitate the carrying on of the works. The design, construction, and general arrangement of the present shops are admirably adapted for

turning out work both economically and expeditiously.

The machine tools are exceptionally good, a great number of them being their own make.

The erecting shop is a long building, with four roads running the entire length.

The lifting is done by overhead travellers made by Craven Bros., of Manchester, which are worked

The stationary engine and the shafting are very well arranged. The shafting is worked on the

mitre wheel principle, which by the particular construction of the wheels is not noisy.

Both steam and hydraulic riveting machines are used. I took particular notice of a tool (which was made on the premises) used for drilling, tapping, and screwing copper stays in fire-boxes, which is most ingeniously constructed, and saves a large amount of labour. The case-hardening furnaces are very complete. A very fine hydraulic plate flanging machine, made by Fielding & Platt, for the patentee Richard Tweddell, which was being used for flanging boiler-plates, also attracted my attention. The rims of the engine wheels are all welded up by hydraulic pressure in these works.

In addition to the thirty goods engines this firm are building for us, which are well advanced they

In addition to the thirty goods engines this firm are building for us, which are well advanced, they have a large order from Midland Railway Company in hand, besides several tramway engines of the Wilkinson type, which were being built for India and Java. These motors are geared and have vertical boilers. Mr. Peacock promised me he would send full particulars of them for your information. I may mention that the tender of this firm has been accepted for a portion of the machine tools required for our

new shops.

Cammel & Co.'s Works, Sheffield.

These are extensive steel-making works, and have a high reputation for the class of work turned out in them. There are nine furnaces, two of which take a 15-ton charge, three take 12-ton, and the remainder 5-ton charges.

When I visited the works they had just made a 40-ton steel casting for a gun carriage in one

piece. A large quantity of armour plates are made here for both the English and Foreign Governments. I was kindly supplied with some very interesting and valuable information in reference to the tests these plates are subjected to by the inspecting officers representing the Admiralty, as also photographs of targets, showing practical results of same.

VULCAN FOUNDRY, NEWTON-LE-WILLOWS.

These works have a good reputation for locomotive engine-building, a large number of which are

turned out annually.

The shops have lately been extended and remodelled, and are now very well laid out. They are of g class, with roads through the centre. The lifting is done by overhead travellers of Craven Bros. The snops have lately been extended and remodelled, and are now very wen laid out. They are of the long class, with roads through the centre. The lifting is done by overhead travellers of Craven Bros.' make, which give great satisfaction. As this firm had an order for six tank engines for us in hand, I was anxious to see what progress was being made with them. I arranged several matters of detail relating to the weight, &c., with the Manager, which will enable the alterations previously advised to be carried out to the best advantage. This firm is also very busy, having seventy-two large bogic engines for the Manchester, Sheffield, and Lincoln Company in hand, in addition to ours.

Locomotive LOCOMOTIVE WORKS OF THE LONDON AND NORTH-WESTERN RAILWAY COMPANY, CREWE.

These have the reputation of being the most extensive locomotive workshops in England—6,000 men being employed in the Crewe shops solely on locomotive and permanent way work. The carriage-building shops belonging to this Company are at Wolverton, and the waggon-building and repairing shops are at Erelsford, all of which I visited.

The total number of hands employed in all the shops and in the running sheds amount to 13,000. Although each locomotive, carriage, and waggon shop has a manager in charge, they are all responsible to

Mr. Webb, the Locomotive Superintendent.

The Crewe locomotive repairing and erecting shops are all long buildings, with two roads running through them, to bring the engines in and out and to stand wheels on, with a road on each side of them to stand the engines on while undergoing repairs. The lifting is done by overhead travellers of their own make. These shops are old, but their arrangement is very complete; the only fault I remarked was "they were too low." The most modern appliances and best class of labour-saving tools (a great number of the tools were made on the premises) are to be seen here. I went over the steel works connected with these shops, where boiler and frame plates, axles, rails, &c., are rolled. There are very heavy special tools in a separate shop for making switches and crossings—these machines carrying lumps of steel off the same as if it were wood. They were principally made by Craven Bros., of Manchester. The standard running sheds on this line are 240 feet long and 160 feet wide, with twelve roads, each accommodating six engines. The roads do not go through the sheds, so that the engines have to be taken in and out the same way. The roofs of these sheds are of the saw-tooth pattern, the ridges running across the lines of rails. The roof forms a series of 15-feet spans, while the beams from which the roof spans spring are supported by cast iron columns 25 feet apart. Extending the entire length over each line of rails there is a kind of inverted trough, for receiving the smoke from the engine chimneys. These sheds are well lighted and ventilated, and are specially constructed with a view to economy—everything being made strictly to gauge

inverted trough, for receiving the smoke from the engine chimneys. These sheds are well lighted and ventilated, and are specially constructed with a view to economy—everything being made strictly to gauge.

Mr. Webb took me through the new erecting shop and explained many improvements which he had introduced, and showed me his three-cylinder compound engine, which was laid up while the wheels were being turned up, and explained the principle of construction and some of the advantages gained by it.*

The following are the leading particulars of this engine:-

$\operatorname{Diameter}$	•••		ure outsi	-			1.	L l ir	iches.	
Stroke of p	iston						. 2		do.	
1			ure insi	de culin	Im		_	_	u 0.	
Diameter		-					26	3 ir	iches.	
Stroke of p			·· ··				Ω.		do.	
outono or p							2	I)	uo.	
· 737:341 _f	Steam port	ts and v			ure cyt	ınders.			,	
Width of st	team ports		• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	•••	• • • •			iches.	
Length of	do			• •••	• • •	• •••)	do	
Width of e		ts .	••		•••	• • •		21/2	do	
Length of	do			• •••	• • •	• • •	. :	•	do	
Lap of valv	'e ·			• • • • •	• • •	• ••	•	$\frac{3}{4}$	do	
Lead of do				• •••	• • •	• • • •		<u>1</u>	do .	
Inside clear					•••	• • •		8	do	
Class of val	lve, " Tricl	c or All	an."							•
		Low-pr	ressure c	ylinder.	-					
Width of s	team ports				•••	•••	_	l∦ ir	ches.	•
\mathbf{Length} of	do^-			. í			14	b	do	
Width of e	xhaust do			. 	•••		6	31	do	-
${f Length\ of}$	· do						14	l _i	do	
Travel of v	alve in full	gear .			••;		4	Ŀ.	do	
Lap of valve	e	_						L	·do	
Lead of val	lve							3	do	
Inside clear	rance .				•••			1.	do	
Class of val								٠-		*
		٠,	Wheels			-		foot	inches.	
Diameter of	f leading-v	vheels r	adial	•		•••		3	6	
Do of	f front dri	ving-wh	eels (lo		ıre cvli	inder)	•••	6	Ğ	
Do. o	f hind driv	ving-wh	eels (hi	rh-press	ure cv	linder)		6	6	
Distance be	etween from	nt and h	ind driv	ing-wh	eels			8	3	
Do.		ding and			.0	•••		9	4	
Total wheel	base		0		•••			17	$\bar{7}$	
	5000	•••	72-21	•••	•••	•••	•••	-•	•	
Tanath of 1	hāilan hann	-1	Boiler					9	10	
Length of I	oton of he	51 lon (o4	 دمانت	•••	•••	•••	•••	4		
Mean diame	tubes betw	ier (out	side)	•••]	•••	•••	•••		14	
Length of t	tubes betw	een tub	e prates		•••	•••	•••	10	1,7	
Diameter of Number of			•••	•••	•••	•••	•••	0	$1\frac{7}{8}$	·
			ting sur	face.		•		gar	are feet.	
Firebox	•	22.00	•••	,		•••			03.5	•
Tubor	•••	•••	•••						80.0	
		•••	•••	•••						
	Total	•••						1,08	83·5	
•										
Area of fire										

Seeing

of driving-wheels.

Seeing that I was particularly interested in ascertaining information about the working of this engine, Mr. Webb very kindly invited me to travel on it and judge for myself, which I thankfully accepted, and subsequently availed myself of by riding on it from Rugby to London with the mail from Holyhead. The engine both worked and steamed well. The working pressure was 140 lbs. in the boiler, and by indication showed from 50 to 60 lbs. back pressure on the small cylinders. When the pressure exceeds 60 lbs. there is a loaded valve to allow it to escape. The large cylinder is coupled to the driving-wheels and the two smaller ones to the trailing-wheels, 6 feet 6 inches diameter, and quite independent of each other, so that coupling-rods are dispensed with. This, as well as several other engines on this line, is fitted with Joy's patent valve gear, by the use of which all eccentrics are dispensed with, and consequently the cylinders if inside are placed closer together, the cranks are closer to the centre, leaving room for bearings on the driving-axles 10 inches long, if required, instead of $6\frac{1}{2}$ inches as at present. This is a very important improvement, as double the mileage will be got before they require to be repaired. The slide-valve is worked from a large stud or pin near the centre of the connecting-rod which connects the two levers. The pins in the joints are placed the correct distance to give the proper travel for the valve, which is connected to a quadrant, and can thereby be regulated to cut off at the different points of the stroke by the reversing lever handle as with the ordinary valve motion. This valve motion is very highly spoken of, and is coming into very general use in English locomotives.

I went through the carriage shops at Wolverton, in company with Mr. Boar, the Superintendent. There are many designs of four and six wheeled carriages in use. The four-wheeled stock is used on the branch lines, and the six-wheeled on the main lines. The leading and trailing wheels of the six-wheeled stock slide on frames, and have springs to keep them central when running; the centre wheels are rigid. Some of the first-class carriages are fitted with lavatories, and have sliding chairs which are used for beds at night. The top berth beds shut up into the roof, but these are not much used, as they are not liked. I obtained one of the pulleys used for connecting cords by means of which the guard can communicate with the driver. I observed a number of perforated, stamped out, zinc plate, which is used instead of network, for racks in the second-class carriages.

Many of the carriages on this Company's lines are lighted by gas made on Pope's patent, which is very highly spoken of. The gasworks are at Euston Square, in quite a small building, the plant being very simple. I obtained full particulars of how this gas is made, as also the cost.

The following are the results obtained from a series of trials on the London and North-western line:—

Thirteen carriages fitted with eighty-eight lamps have made the journeys between

Euston	ı to	Holyhead a	nd bac	ek			520	miles
Do.	to	Glasgow	do.	•••			800	do
		Edinburgh	do.		•••		800	$_{ m do}$
Do.	to	Aberdeen	do.	•••		1	.,070	do

with only one charge of gas for each double journey. A test carriage was run to ascertain exact cost of lighting, with the following result:—

Miles run				 41,184
Gas burnt		•••	•••	 2,926 feet
Hours burni	ng			 1,287

giving a consumption of 2.27 cub. feet for four lamps per hour, at a cost for gas (at 12s. per 1,000 feet), or about $\frac{1}{3}$ of a penny for four lamps per hour. It is claimed for this system that it is free from smell, and is not affected in any way by atmospheric influences.

There is a very fine library at Crewe, also at Wolverton, for the benefit of those employed in the Company's service. There is also a Mechanics' Institution, where scientific and practical lectures are delivered and classes formed for giving instruction in science, literature, and art.

There is a laboratory where students can take up the practical course in chemistry, and there is a mechanics' shop fitted with small screw-cutting lathes, shaping, planing, and drilling machines, worked by a gas engine, where students (chiefly apprentices) can acquire a knowledge of mechanical engineering and tools after working hours. Valuable prizes are offered by the Company for competition yearly amongst the youths in their employ; in addition to which there is a valuable scholarship founded in the Owen's College in Manchester, available for students of the Crewe Mechanics' Institute only. Everything that is conducive to the instruction and well-being of the employés generally is provided, and the results, so far as I could ascertain, were most satisfactory.

I was furnished with the rates of wages paid to the shop hands, as also to drivers, firemen, &c., which will be found in the Appendix. There is a Mutual Insurance Society established amongst the hands employed in the running department, viz., drivers, firemen, and cleaners, which is aided by annual grants from the Company, a copy of the rules and regulations of which I was also supplied with. (See Appendix A.)

Rates of Wages.

Class of Workman.	•	Per week.	
Clade of Tryantian.	From.	То.	Average.
Fitters Turners Machinists Smiths (spring-makers) Labourers	£ s. d. 1 2 0 1 2 0 0 15 0 1 0 0 0 4 0	£ s. d. 1 18 0 1 17 0 1 5 0 1 18 0 1 7 0	£ s. d. 1 9 10 1 9 6 1 0 0 1 9 3 0 18 2

GRESHAM & CRAVEN'S WORKS, MANCHESTER.

Hearing that this firm had an arrangement for working Smith's vacuum break continuous and automatic, I was anxious to see what it was like, and readily obtained what information I required, including description books, &c., which will be useful.

SHARP STEWART'S ENGINE-BUILDING WORKS, MANCHESTER.

These are old shops, and are rather inconveniently situated for working. The erecting and machine shops are separated from the blacksmiths' shop by a public street. With this exception however they are well laid out for engine-building and machine-tool making, which are carried on very extensively,

and the class of work performed is of a very superior character.

The erecting and fitting shops are long buildings, with roads through centre, and overhead travellers by Craven Bros., similar to those in use at Beyer & Peacock's. This firm has purchased the right to use Sellar's motion in the planing machines made by them, which is an improvement on the rack and pinion, and is quite equal to Whitworth's screw motion in every respect. This firm have been successfully tendering for several of the machine tools we require.

LOCOMOTIVE WORKS OF THE MANCHESTER, SHEFFIELD, AND LINCOLN RAILWAY, GORTON.

These are very extensive shops, covering a very large area. It took me six hours to go over them with Mr. Sacre, the Locomotive Superintendent, who informed me we walked 7 miles in our inspection of them. The arrangement of the locomotive erecting shops, which are quite new, is very good, and a large number of the best tools for locomotive work are provided. The shops are of the long class, with three roads through each span of 44 feet. The height from level of rail to traveller is 22 feet, and from traveller to roof 6 feet 9 inches. The travellers are overhead worked by ropes, and were made by Craven Bros. Two are 25-ton and two 15-ton. The carriage and waggon shops are also very extensive, and well found in wood-working tools, &c. There is a very good arrangement for washing carriages in use here. There are rolling mills connected with the works, where frames, plates, &c., are made.

In addition to a Superannuation Fund for salaried officers and clerks, which is established on the railway clearing system, and enables members, on a payment of $2\frac{1}{2}$ per cent. on their salaries, to which the Company contributes an equal amount, to retire on a superannuation allowance, there is also a Mutual Provident Society supported by contributions from the Company's fines and small weekly subscriptions of the employés, for the relief and maintenance of its members in cases of sickness arising either from accident or natural causes, for the provision of medical attendance upon members, their wives, and those of their children who are under fourteen years of age, and also for the assurance of small sums upon the death of a member or his wife. I was supplied with copies of the rules of all these Benefit Societies.

WHITWORTH'S WORKS, MANCHESTER.

These celebrated works are quite a treat to the visitor: their arrangement and equipment are most perfect. The new shops are very extensive, and fitted with the best modern appliances. The machine tools (principally their own make) are exceptionally good.

Both overhead and walking cranes, made by Craven Bros. and worked by ropes, are used for lifting heavy weights. This firm has successfully tendered for several of the machine tools required for our new

shops.

THE ASHBURY CARRIAGE AND WAGGON WORKS, MANCHESTER.

These are very extensive, and well laid out for carriage and waggon building. A large number of carriages of similar construction to those made by this firm for our lines were in hand, the materials and labour in them being very superior. This type of carriage is much used on English lines.

CRAVEN BROS.' WORKS, MANCHESTER.

These works have a great reputation for making travelling cranes, and from my own observation I have no hesitation in stating they deserve all the high encomiums that have been passed on them. I was shown several plans of locomotive and other shops where these cranes were in use, and after a most careful inspection of their work I left the plans of the Eveleigh Workshops with them, to enable plans of cranes most suitable for our requirements being prepared for my approval. They made many very important suggestions in reference to the arrangement of our shops, which if practicable, were, in my opinion, well worthy of consideration (*Vide my letter to you of the 31st October*, 1882), and in support of their views asked me to visit the new shops of the Midland Company at Derby, where I would see them in full operation. This firm's tender has been accepted for a number of machine tools required by us.

LOCOMOTIVE WORKS OF THE MIDLAND COMPANY, DERBY.

These are most modern workshops, and admittedly the best laid-out in England, and cover 89 acres. The buildings are brick with slated roof. The erecting shops are 450 feet long, with three spans of 50 feet each, carried on iron columns 17 feet apart. The height from level of floor to rail of travellers is 20 feet 33 inches. Peads are laid through these above for a rise to be appropriately acreal of the control of the c is 20 feet 3½ inches. Roads are laid through these shops for engines to be run and to stand wheels on. The overhead travellers, by Craven Bros., are very highly spoken of. The boilers of the stationary engines used for driving the shafting are placed outside the building in a most convenient position. The shafting is worked by mitre wheels, which I may state is the universal system adopted in English workshops. Attached worked by mitre wheels, which I may state is the universal system adopted in English workshops. Attached to the erecting shop there is a machine tool-shop of similar dimensions (450 feet by 150 feet), in which the lifting is done by walking cranes. The boiler and turning shops are 400 feet by 200 feet, in addition to which there is a large smiths' shop, carpenters' shop, saw-mills, stores, &c. There is a very large mess-room where the employés may have their meals, in which there are a large number of tables with marble tops, on iron frames. A caterer has a contract for supplying the eatables at a fixed scale of charges, which are posted up, and everything is as well arranged as in a first-class dining saloon. There are several round sheds with central turn-tables for stabling engines; in addition to which there is a large building enclosing two turn-tables, from each of which stalls for engines run as in the round sheds. Some of the stalls in this building accommodate three engines. The coaling of engines is done by cranes with boxes holding five and ten hundredweight each, from a stage. This Company make their own gas, the works for which are extensive. The wood-working machine shop, belonging to the carriage and waggon departments, is 320 feet by 200 feet, fitted with the best wood-working tools, made by Robinson & Sons of Rochdale. The paint shop is 400 feet by 300 feet, and the carriage and waggon building shops are each 400 feet by The paint shop is 400 feet by 300 feet, and the carriage and waggon building shops are each 400 feet by 200 feet, in addition to which there is a large building 600 feet by 200 feet for smithy, turning, drilling, stores and foundry. There are three large sheds for timber, each 400 feet by 200 feet: a large stock is always kept, so as to admit of it being properly seasoned before being used.

Amongst

Amongst the many interesting things that I noticed was an ingenious arrangement for brazing tubes. It consisted of a small circular furnace with a tube on end with three jets of gas and air, worked by a boy. There is also a special machine for boring them out and turning down the outside ends. The rough brazing of the tubes is taken off by an emery wheel. As compared with the hand file it is a great improvement, and it turns out four times as much work. There are special tools for spring-making, which perform very good work and save much labour; also, a machine for pulling the spring-buckles off by hydraulic pressure. I obtained a copy of the rules and regulations for drivers and firemen, which affords some useful information. (See Appendix B.)

TANGYE BROS'. WORKS, BIRMINGHAM.

These are very extensive works. The different description of pumping-engines, a very large number of which is in course of manufacture, as also differential blocks, the making of chains, &c., all of which this firm make a speciality, gave me much interest. Some very good tools, as also small overhead travellers, are made here. Large additions were being made to the shops, to meet the demands of their increasing business. There is a large dining and lecture room connected with the shops. The tender of this firm has been accepted for a few machine tools.

THE PATENT BOLT AND NUT MANUFACTORY, BIRMINGHAM.

These are extensive works, employing 400 males and 200 females. The females were engaged in screwing bolts, tapping nuts, and pointing and turning heads of bolts, &c.

This firm has a large order in hand for spikes and nut-headed screws for our railways.

LOCOMOTIVE AND CARRIAGE AND WAGGON SHOPS OF THE SOUTH-EASTERN RAILWAY, ASHFORD, KENT.

These shops being of the old type, there is nothing specially attractive in their arrangement. They are, like all the locomotive shops which I visited in England, well found in machinery, tools, and other necessary appliances for carrying on the repairs and renewals of the engines and rolling-stock. An overhead traveller, worked by hand, is used for lifting engines. Some of the locomotives and carriages used in the repair that the relative to the repair of the repair o in the earliest days of railways are kept here as a curiosity.

TAYLOR BROTHERS' IRON AND STEEL WORKS, LEEDS.

When inspecting these works I saw a number of steel tires in course of manufacture, also the work of rolling iron plates.

KITSON'S LOCOMOTIVE WORKS, LEEDS.

These are extensive shops, and they have the reputation of turning out very good work. A large number of steam motors were in hand. Some "Rowen's patent" combined motor and car were principally for the Continent, with a few for Victoria. The ordinary type of motors were for England, Scotland, and Ireland, &c. A large number of locomotive engines were being constructed for some French railways.

Manning Wardle & Co.'s Works, Leeds.

These are very old established locomotive works. They are the most convenient, best laid out, and cleanest shops I have seen. The machine-tools and other labour-saving appliances are of the very best kind, and the work turned out is excellent. This firm make a speciality of building small locomotives and tramway motors. I obtained particulars, including specifications, photographs, and prices of classes of engines built by them, which, with some slight alterations of details, would be admirably adapted for the Camden line. The piece-work system is not followed in these works. There were several boilers in hand, the heles in which, were purpled by an extraction and transparent was also at the sole of the control of th hand, the holes in which were punched by an automatic machine, and were as true when the joints were put together as if drilled through the two holes by one operation.

FAIRBAIRN, KENNEDY, & NAYLOR'S TOOL SHOP, LEEDS.

A large number of tools were being made here for English and American Railway Companies. I obtained photographs and quotations of tools made by them. The tenders of this firm have been accepted for some machine-tools, which have a good reputation.

THE LOW MOOR IRON-WORKS, NEAR LEEDS.

I had the satisfaction of seeing some very large plates being rolled, the men engaged upon the works being paid at piece-work rates. The Company have an Inspector, whose duty it is to watch the operation, and who is held responsible for the quality of the plates passed. As may be imagined, he is very particular; if he sees the slightest blister, or even an indication of one (when the water is thrown on the plate or in rolling) it is thrown on one side and either cut into a small plate or cut up altogether. There are a pair of fine new horizontal engines used for driving the large rolls. Gas is used for heating the furnaces. A pair of old atmospheric engines are used for working blowing cylinders, which are kept out of curiosity, being the only engine of this class at use in the present age.

TWAIT BROS'. STEAM-HAMMER-MAKERS, &C., BRADFORD.

This firm make a speciality of the manufacture of steam-hammers, and when I visited there was a large number in hand for English and foreign works. They also manufacture "Root's blowers," which are considered a great improvement on the ordinary fan, and are coming into general use in England. I was surprised at the force of the air emitted from these blowers. The tender of this firm was accepted for large steam hammers, one canally and one dupler Root's blower. was accepted for large steam-hammers, one cupola, and one duplex Root's blower.

VICKERS & SONS' STEEL-WORKS, SHEFFIELD.

These are very extensive shops, and have the reputation of turning out the best class of work. From 800 to 1,000 tons of steel are turned out weekly. I saw a large number of tires and axles in the different stages of manufacture, also a large number of propeller-blades and shafts for large steamers. A number of carriage and waggon axles were being tested, under the supervision of an officer representing the Western Railway Company of France, to whose order they were being made. The following is the result of his tests:—

Waggon axles.

	Order of blows.	Weight of tup.	Fall of tup.	Deflexion per blow. Inches.	Bearings.
st axle	1	4 cwt.	13 feet	663	
	2	,,	,,	1.17	
	2 3 4 5 6 7 8 1 2 3 4 5 6 7 8	,,	,,	.663	of
•	4	,,	"	1.17	on the extreme end
	5	,,	1)	.702	er
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	7	,,	1)	·7 4 1	e,
_	8	,,	"	1.248	#
nd axle	¦ 1	,,	,,	.663	ě
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	5	,,	,,	663	56
	6			1.209	. g
	7	,,	,,	741	ිනි
	8	"	"	1.287	ısı
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	4	,,	"	1.248	V-H
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	8	,,	"		Ą
h axle	l i i	,,	"	1.209	ည္
11 GAIC	1 2 3 4 5	,,	"	'663	The axle is bolted down to a solid block, leaving one journal overhanging, which the tup is dropped.
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	3	,,	"	.702	¥
	<u> </u>	,,	,,	1.209	υ υ
	5	,,	"	.663	Ţ.
	6	,,	,,	1.131	
	7	,,	"	:663	
	8	,,	, ;	1.17	

Note.—Two blows of the tup are given before the axle is turned.

John Brown & Co.'s Works, Sheffield.

This is one of the largest and most important iron and steel works in England. When I visited them they were engaged rolling tires and armour-plates. The latter were 12 ft. by 10 ft. by 14 in. I was fortunate enough to see the process of steeling armour-plates carried on through all its different stages. Some of the machine-tools are exceptionally powerful. Two large planing and slotting machines, by Shanks, of Johnstone, near Glasgow, cost £2,600 each.

IBBOTSON BROTHERS' WORKS, SHEFFIELD.

These are extensive steel-works. I saw some Muchet's special steel undergoing the process of cleaning off and hardening; also, the drawing out of cast and shear; steel by the steam-hammer. I also saw the rolling of patent round steel in operation, which was made as true as if turned.

HADFIELD STEEL WORKS, SHEFFIELD.

When I visited these works there were several of the "Cowdery & Thomas" patent couplings being made, and twelve sets were being forwarded to Sydney. The steel castings were exceptionally good. A trolly wheel was bent in my presence, which appeared as tough as any wrought iron.

The process of annealing steel castings to give them the necessary toughness requires a large

amount of labour, and must necessarily be very expensive. This firm had an order in hand for car-wheels for our tramways.

OSBORNE & Co., SHEFFIELD.

There were many things in progress of manufacture which were of special interest, notably springs, files, shears, &c., &c., also the process of case-hardening Muchet's steel, which also requires much labour. Shear steel was being drawn out under the hammer, and some round steel passed through a spiral machine, which made it as true as if it were turned.

LOCOMOTIVE WORKS OF THE NORTH BRITISH RAILWAY COMPANY, COWLAIRS, GLASGOW.

These are very extensive and well laid out shops, and are equipped with the very best class of machine tools. The lifting of engines is done by hydraulic power, which in its operation appeared too slow for light lifts, and, through the shafting having to be taken the entire length of each shop for each crane for the purpose of working the pumps, it must be an expensive system. Saw an exploded boiler here, which was a complete wreck.

Dubs & Co.'s Locomotive Works, Glasgow.

These are extensive and well laid out works for locomotive-building. The machine tools are principally of Whitworth's manufacture. The erecting shops are long buildings, with roads through the centre. The engine-lifting is done by overhead travellers worked by ropes, and by walking cranes made by Craven Bros., Manchester. Inspected the work done for the engines in hand for us, and arranged to have the bogies made so that the inclined plane may be worked on a flat surface. I particularly impressed upon them the necessity of completing them as early as possible. A large number of locomotives were in course of construction for different Railway Companies. There are some extensive additions being made to these shops to meet their increasing business.

THE CALEDONIAN RAILWAY COMPANY'S WORKS, GLASGOW.

These are very old works, and very deficient both in arrangement and labour-saving appliances which are to be found in the northern shops. When visiting the works with the Locomotive Superintendent, Mr. Drummond, he fully explained the difficulties experienced in carrying on the works. He was having plans prepared for new shops, but he was crippled from want of sufficient space to build them on.

WORKS OF P. & W. MACLELLAN, GOVAN, GLASGOW.

A very large amount of bridge work is manufactured here. In addition to some large bridges and girders, they had 800 iron goods-waggons in hand for the Indian Railways. I observed some carriage locks, screw-jacks, &c., for which I inquired prices, &c.

GLEN & ROSSE'S WORKS, GLASGOW.

These are extensive tool works, of which I obtained catalogues and quotations. Steam-hammers are a specialty with this firm. The tender of this firm was accepted for the small steam-hammers we require.

RANSOME'S WORKS, LONDON.

These are extensive wood-working machine-tool works, and I saw some special mortising machinery, general joiner, panel-planer, &c., at work, which were admirably adapted for carriage and waggon shops. This firm was successful in securing orders for the greater portion of the wood-working tools we require.

LOCOMOTIVE WORKS, LONDON, CHATHAM, AND DOVER RAILWAY.

These shops are situated off Wandsworth Road, London. They cover a large and very valuable space of ground. The locomotive shops are well laid out. The engines are lifted off their wheels by overhead travelling cranes. There are a number of special wood-working tools in the carriage and waggon shops at Chelsea, some of which were made by Ransome, and two particularly useful tools were made by Fay & Co., of Cincinnati, America. Ground travellers are used in the carriage and waggon shops.

LOCOMOTIVE WORKS OF THE GREAT EASTERN RAILWAY, STRATFORD.

These are very extensive shops, new engines being built in addition to the ordinary repairs and

renewals. The erecting shop is a long building, with roads through it. Overhead cranes for lifting locomotives, which were originally worked by hand, have been rearranged by Craven Bros. to be worked by rope gear, which gives great satisfaction.

They were building some very fine express engines to run between London and Norwich, which were designed by Mr. Worsdell, the Locomotive Superintendent. They are four coupled 7-feet wheels; the leading wheels 4 feet in diameter have radial axle-boxes which give $\hat{\mathbf{I}}_{\frac{1}{2}}$ inch side motion each way, which leading wheels 4 feet in diameter have radial axle-boxes which give 1½ inch side motion each way, which is controlled by a horizontal elliptical spring fixed in a bearing beneath the axle with an adjusting arrangement. Joy's patent valve motion is adopted in them. The shell of the boiler and firebox is composed entirely of steel plates; the firebox is of copper, and the tubes of brass; the crown bars of the firebox are formed of steel plates. The boilers are fed by two injectors (Nos. 9 and 10), one of which (No. 9) is placed on the fireman's side. The working pressure is 140 lbs. per square inch. They are fitted with the Westinghouse automatic air break, the pump being carried within the splashers between the wheels, and the reservoir and valves, &c., underneath the foot-plate. The frames are made of a single steel plate, 1 inch thick; the frame cross-stays and buffer beams are also of steel, and the motion plate is of cast steel. On account of the distance between the coupled wheels, the rods are made of an H is of cast steel. On account of the distance between the coupled wheels, the rods are made of an H section. Sand-boxes are provided for the driving and trailing wheels, which are arranged to be worked from the foot-plate. An exhaust steam injector is being fixed on each engine. The weight of this engine in working order is-

_						Tons c.	q.
Le	eading	wheels		•••		$12 \ 19$	î
\cdot \mathbf{D}	riving	"	•••	• • •		15 O	0
Tı	railing	"		•••	•••	13 3	3
							_
		Total				41 3	0
The weight empty is :-							
L	eading	wheels				12 4	2
\mathbf{D}	riving	"		• • •		12 15	1
\mathbf{T}_{1}	railing	"	•••	·		13 1	1
							—
		Total	•••	•••		38 1	0

The tender holds 5 tons of coal and 3,200 gallons of water.

J. STONE & Co., DEPTFORD, LONDON.

These are very extensive works, the manufacture of patent anti-friction white metals being very largely carried on. The metals are those known as "Kingston's," "Babbitt's," and "Fenton's" patents, which are highly spoken of, as also the manufacture of patent bronze, for which this firm has a great reputation. Pumps, water-cranes, valves, copper rivets, washers, brads, &c., are made here.

LOCOMOTIVE WORKS OF THE LONDON AND SOUTH-WESTERN RAILWAY, NINE ELMS.

These are old shops, and although well found in equipment, machinery, and tools, they are not by eans well adapted for performing work expeditiously. Mr. Adams, the Locomotive Superinany means well adapted for performing work expeditiously. Mr. Adams, the Locomotive Superintendent, accompanied me in my inspection of the works, and took great pains in pointing out everything

which he thought would interest me.

The principal repairing shop has overhead travelling cranes worked by ropes for lifting engines. The engines are taken in and out by ground travellers worked by an endless wire rope from the shafting, by a belt on fast and loose pulleys. It is a slow process, but appears to answer the purpose. I inspected one of Mr. Adam's bogies for engines, also his radial boxes, of both of which he kindly supplied me with tracings; I also obtained a photo of Mr. Adams' standard engine for suburban trains. There is a large tracings; I also obtained a photo of Mr. Adams' standard engine for suburban trains, round shed for stabling engines, with a central turn-table of the usual description.

The carriage and waggon shops are commodious buildings, very extensive works being carried on in them. All the carriages are carried on four wheels. There is a carriage-painting shop on the upper floor of the carriage-repairing shop (which is a two-story building). The carriages are taken up and down from the paint shop by means of a lift, with a winch worked by a pair of engines on the top floor. This system was adopted through want of room.

The coaling of engines is done from the trucks. There is a gang of four men to a truck, two to fill the baskets and two to weigh the coal and put it on the tender. At country stations the coalmen unload the trucks when not engaged upon coaling engines.

APPLEBY'S WORKS, GREENWICH.

This firm has a reputation for travelling cranes, so I was particularly anxious to see some of them.

There were several of their cranes, both hoisting and travelling, in use in their shops; and, although they showed good workmanship, they are not to be compared with those made by Craven Bros. as being suitable for locomotive workshops. This firm had a very large order in hand for work connected with the Sydney Water Supply.

They were building a motor for a short tramway line at Holloway, which it was intended to work by air on Megarskie's plan. It is a most complicated machine, which must be very expensive to keep in

The following are some of the leading features of this car:-

The body is $11\frac{1}{2}$ feet long, and accommodates twenty inside passengers, and on a platform in the rear fourteen more can be carried. Compressed air, of 25 atmospheres, is stored in eight cylindrical reservoirs of plate-iron from 12 to 16 inches diameter, placed transversely underneath the car, and connected together. They are in two separate series. The capacity of the principal series is 52 cubic feet, and that of the second or reserve series, 17 cubic feet. An upright reservoir, 14 inches in diameter and about 5 feet in height, placed at the front end of the car, is three-fourths filled with water heated to 340° F., corresponding to a pressure of 103 lbs. per square inch above the atmosphere. The compressed air, as drawn off for consumption, is passed through this reservoir, in which it becomes saturated with vapour. The mixture of air and water occupies the upper part of the reservoir. The frame of the car is of wrought iron, 5 feet 10 inches wide and 18 feet 8 inches long. The car runs on two pairs of wheels about 28 inches in diameter, and placed 6 feet 10 inches apart. One pair of wheels is driven by a pair of cylinders about 6 inches in diameter and 10-inch stroke. The car weighs $4\frac{3}{4}$ tons empty, and 7 tons loaded. The air is wire-drawn to a pressure of 5 atmospheres for working in the cylinders. It is calculated by the patentee that the fall of pressure, by wire-drawing from 25 to 5 atmospheres, followed by the complete expansion on a piston from 5 atmospheres down to atmospheric pressure, results in an efficiency of 62 per cent., that is to say, a loss of 38 per cent., and that this loss is compensated for by the reheating of the air during expansion by the intermixed steam. The expense of reheating the air is only a small proportion of the total fuel consumed, being only 2 lbs. against 33 lbs. used in charging the reservoirs. The cooling of the heated water, and the diminution of pressure of the air in the reservoir, takes place simultaneously on the journey, and thus the elements are maintained in sensibly constant proportions. It is stated that the quantity of air consumed does not exceed 11 cubic feet per mile run, and the rate of off for consumption, is passed through this reservoir, in which it becomes saturated with vapour. It is stated that the quantity of air consumed does not exceed 11 cubic feet per mile run, and the rate of speed at which they travel is stated to be from 5 to 9 miles per hour.

I ascertained that these motors were on a tram line in Nantes $3\frac{3}{4}$ miles long, on a 4 feet $8\frac{1}{2}$ inch gauge, which is generally level; the time occupied on the trip being forty minutes, which is done with one It takes twenty minutes to charge it. 4½ tons of coal are consumed per diem for eighty-six trips,

double, which gives 15 64 lbs. of coal per mile run.

LOCOMOTIVE WORKS OF THE LONDON, BRIGHTON, AND SOUTH COAST RAILWAY COMPANY.

These extensive works, which are situated at Brighton, are under the supervision of Mr. Stroudley, who kindly showed me over them. Over 1,200 hands are employed. The shops are long buildings, with roads through them. The overhead travellers are worked by hydraulic power, which requires two lines of roads through them. The overhead travellers are worked by hydraunc power, which requires two are shafting the entire length of the shops for driving the pumps, the consequence being that the operation of lifting light weights was very slow. A Roots' blower was in use for the cupola, which is far preferable Steel ferrules are made from parallel steel by an Oliver, at a cost of 4s. per 100. some steel tubes by Howel & Son, of Sheffield, 14 W.G., and also some with a coating of copper, by the same makers, are being tried, sample of which I obtained. The coaling at Batersea is done from a platform which is raised 10 feet from level of rails. Small trollies, holding 5 and 10 cwt. each, are carried on four wheels placed near the centre, which allows of their being readily turned in any direction, and easily wheels placed near the centre, which allows of their being readily turned in any direction, and easily tipped into the tender. At New Cross and Brighton the engines are coaled by a small steam crane, with iron boxes, holding 5 and 10 cwt. each, with drop bottoms, which are raised from the ground to the tender. A man stands on the tender, and, as the boxes are raised sufficiently high, he pulls a catch, which allows the bottoms to fall at an angle of 45°, there being a stop in the quadrant to prevent its opening too far. In lowering the boxes to the ground, they close by their own weight, and are ready for filling again. A number of boxes are always kept filled. The running sheds are all round, with turntable in centre.

There is no scarcity of engines on this line, there being 420, or one for every mile of line, and more are being built. Each driver has his own engine, which he runs from the day it is turned out of the shops until it comes in for repairs. Should a driver be absent from sickness or other unavoidable cause, his engine remains in the shed until he resumes work. By this system each driver is compelled to take an interest in keeping his engine in running order as long as possible.

The driver's name and the mileage run is painted on the weather-boards each time his engine comes in for repairs. Two boxes of Saxby and Farmer's interlocking arrangements, with 240 and 120 levers respectively, are in use here. The largest one is arranged so as to be worked by air pressure.

All the carriages on this Company's lines are lighted by Defries' patent oil-lamps, with the exception of the Pulman cars, which are lighted by electricity. The battery for storing the electricity has sixteen cells on each side, or thirty-two in all, which is found sufficient to last the journey from London to Brighton. All the passenger trains are fitted with Stroudley patent electrical apparatus, for communicating between passengers, guards, and driver. I procured a pull and one set of couplings.

Westinghouse Brake Company's Works, New Cross, London.

Upon visiting these works I observed many new arrangements connected with the working of this system, with which I was deeply interested. I was shown plans (of which I was supplied with copies) of an arrangement invented by this firm for a semaphore signal for guards' vans, to be used in connection with the Westinghouse automatic break.

LOCOMOTIVE WORKS OF THE NORTH LONDON RAILWAY COMPANY, BOW.

These shops are of the long class, with two roads in each span of 42 feet 4 inches; the height from rail level to traveller is 21 feet, and from traveller to tie-rod 7 feet. There was a new over-head traveller, just erected by Craven Bros., which was tested in my presence; it lifted an engine off its wheels and placed it on blocks in five minutes. This crane was worked by ropes. Some smaller cranes by Tangye Bros. were in use for lifting lighter weights, which were worked by endless chains from the floor, but they were not considered satisfactory. I noticed that a locomotive boiler was being used as a steam-hammer furnace, which struck me as particularly suitable for the purpose, so I obtained a tracing of it. There is a very useful machine for drilling and tapping fire-boxes, made by Craven Bros.; also a machine for grinding the lathe centres, which is easily fixed to any lathe, and saves time and labour in softening them. I obtained several of the forms in use on this Company's lines. These shops are of the long class, with two roads in each span of 42 feet 4 inches; the height from

LOCOMOTIVE WORKS OF THE GREAT WESTERN RAILWAY, SWINDON.

These are very extensive works; they are the only shops where I have seen ground-travellers at right-angles to the pits. They are worked by small engines, and, being well constructed, they give no There is a 50-feet traverser outside, used for taking carriages in and out of the shops, which is worked by a small locomotive engine with a vertical boiler, on rails in the traversing pit. The carriage and waggon shops are also very extensive, and well equipped with machine-tools, &c. There is an iron and brass foundry connected with the shops. Some of the rolling stock is constructed for the wide gauge and some on the 4 feet 8½ inches, a third rail being laid to accommodate both gauges. I did not observe any round sheds at Swindon, but those at the several places on the journey were of the round class, with central turn-table. I obtained very complete information in reference to the classification of the officers, &c., and the salaries and wages paid to all classes of employés, also classification of goods.

Appendix C.)

There is an institution in connection with the Loco and Car Works at Swindon which has been established for the purpose of disseminating useful knowledge and encouraging rational amusement amongst all classes of people employed by the Company. The scope of the institution is very extensive, for in addition to possessing a good library (over 11,000 volumes) and reading-room, it has connected with the ducational science and art classes, &c. Lectures on scientific and literary subjects are delivered by company to propose a science of the institution of the science and art classes, &c. petent persons, in addition to which vocal and instrumental concerts and theatrical performances are given. There are kindred institutions (on a smaller scale) at the Company's Loco. Works, Wolverhampton, Newton Abbot, Pontypool Road, and Saltney. I may mention that there is a similar institution at the Paddington Station for the salaried officers and clerks, where, in addition to a large library and reading-rooms, &c., &c., there is a dining club established, to which the Directors contribute by allowing the use of a suitable room charge a fixed tariff. In addition to a Superannuation Fund, under which every officer and clerk is entitled to a pension upon attaining the age of sixty, the retiring allowance is 1-50th of a member's entitled to a pension upon attaining the age of sixty, the retiring allowance is 1-50th of a member's maximum salary for every year's membership. The subscription to the fund is $2\frac{1}{2}$ per cent. on the member's salary, to which the Directors add a like amount. There is a Guarantee Fund for officers who have to find security, and a Provident Society, by means of which on a small payment (6d. a week) each member is entitled, on becoming incapacitated by accident or sickness, to a weekly allowance of 12s. for twenty-six weeks, and 6s. per week for such period thereafter as he shall be certified as unfit for work. Medical attendance and medicine are also given free of shares also functed the same also given free of shares also functed. Medical attendance and medicine are also given free of charge, also funeral allowances for members and their wives. A Pension Fund for workmen, which provides members with a weekly allowance in old age. Provided a member who has thirty years' service arrives at the age of fifty-five, he is entitled to a pension of 10s. per week, with an additional allowance of 1s. per week for every five years' service over that period. The subscription to the Pension Fund is 3d. per week, to which the Company add a like amount. There is also a Widow and Orphans' Fund, by means of which assistance is afforded to widows and orphan children of deceased members until the children are able to earn their own livelihood.

The subscription is 2d. per week, a like amount being contributed by Directors, shareholders, &c., and the allowances granted are, to a widow, 4s. per week; first two children, 1s. per week; every other

child, 6d. per week.

The subscriptions to the different Societies are deducted on the pay sheets.

THE BRUNSWICK STEEL-WORKS, WEDNESBURY, BIRMINGHAM.

There are three large shops. One of the shops was known as the "Patent Shaft and Axle-tree Company's Works," another was known as "Lloyd & Lloyd's," which are now connected with and form a portion of the Brunswick Steel Company's Works.

I saw a number of carriage-wheels in all stages of manufacture. Several wheels were being bossed and welded in the rim by hydraulic pressure. A large number of wheels had solid spokes, the outside rim being rolled to the section required and turned round in a ring, when the spokes are welded in by hydraulic pressure by one man while the washer is welded in the boss by another. They are then welded together in the outer rim, when they are ready for the lathe. together in the outer rim, when they are ready for the lathe.

There are a number of Bessemer steel converters, which turn out a large number of ingots or cast-

ings, which are worked into the different shapes required by hammering or rolling.

I also observed the process of making Brunswick steel. The scrap and pig is put in an open hearth furnace, which only took a 4-ton charge, and is the only one they have of this description. It is heated by gas and fused, which process takes from six to seven hours before it is ready to be run off; then it is tapped similar to a cupola and the molten metal is run into a large vessel, which is placed on a trolly and run out to the moulds. The top is then skimmed off, and a valve or tap is opened in the bottom of the vessel, which allowed the metal to run into cast-iron moulds. The casting (4 feet long by 15 inches at one end, and tapering to 12 inches at the other) weighing 18 cwt. is then taken to a reverberatory furnace while hot, where it is brought to a white heat, when it is hammered down to bars 7 inches square, which are cut into axle lengths, after which it is heated to a soft heat and rolled to the largest size required for axles; these are again heated and taken to a tilt hammer and drawn down to form the journals and centre of axle to required size.

A 5-inch axle was tested in my presence. The bearings were 5 feet apart with a ton tup, the axle being turned after each blow, the result being as follows:—

Fall of 20 feet .blow bent it 43 inches. -1st2nd straightened it. 3rdbent it $3\frac{7}{8}$ inches. 4th straightened it. Fall of 25 feet. -5 hbent it 45 inches. 6th straightened it. Fall of 28 feet.--7th bent it $4\frac{5}{16}$ inches. ,, 8th broke it (when turned).

It was a fair fracture, but a good axle should not break with such long bearings and so few blows.

DEURANCE'S WORKS, DOVER ROAD, LONDON.

I inspected several steam valves for steam brakes, some test gauges which were in hand for us, also some speed-indicators.

Howell & Sons' Steel-works, Sheffield.

Saw a number of locomotive tubes in course of manufacture, and obtained sample of their locomotive iron tubes, which are coated with a solution of copper.

Brown, Bailey, & Dixon's Steel-works, Sheffield.

These are very extensive works, a great number of tons of steel being made into springs annually. One of their leading spring-makers (Wm. Banner) was recommended to me strongly as being an excellent mechanic, and bearing a very good character. He was eight and a half years in their service. I offered him employment in the Sydney shops at 12s. per diem, in addition to a free passage for himself, wife, and two children by an emigrant ship, which, after much consideration, he accepted.

BUTHER AXLE-BOX COMPANY'S WORKS, SALTLY, BIRMINGHAM.

These shops are specially laid out for the making of axle-boxes, and constant endeavours are made

to improve them.

They informed me it was their intention to send a number of their patent axle collar protectors with the axle-boxes ordered by us, for which it was not intended to make any additional charge, as they were anxious for them to be tried on our lines.

DEFRIES' WORKS, HOUNDSDITCH.

Observed a number of improved railway carriage and hand lamps, samples of which they intended to send to this and other Colonies for trial. Some very good carriage fittings, such as locks, &c., are made by this firm.

PETER'S CARRIAGE TRIMMINGS SHOPS, MOORFIELDS.

A very large assortment of carriage trimmings, blinds, springs for seats, &c. I obtained samples of what I considered most suitable to our wants.

OWEN & DYSON'S WORKS, ROTHERHAM.

As this firm were making a number of wheels for us I called to see them tested. I saw several of the wheels cut through the centre boxes, which were perfectly sound and a very good job. Of the 500 sets ordered, 300 are to be made with patent stamped bosses.

THOS. ROBINSON & SONS' SHOPS, ROCHDALE.

This firm has a great reputation for the class of wood-working tools made by them. The shops are very extensive, employing about 400 hands. Connected with the works there is a large lecture-room and a dining-room for the employés, of which I obtained a tracing.

The whole of the wood-working machines for the new shops at Derby have been made at these works, and they are of a very superior class. I also obtained from Mr. Robinson a tracing showing the arrangement of the tools and shafting of the Derby carriage shops, including the saw-mills, which will be very useful, and serve as a guide to the arrangement of our new carriage and waggon shops at Eveleigh. The tender of this firm was accepted for a few of the wood-working machine-tools we required. several other factories and shops, where I obtained more or less useful information. Amongst them were the following :-

Collier's tool shop, Salford, Manchester.
Allday & Sons' Works, Birmingham.
Handyside's do., Derby.
Church, Hill, & Co., London.

Having visited most of the great shops in England, I was anxious to see some of the French works, so I took a run over to Paris for a few days and visited the following workshops:—37—D

LOCOMOTIVE

LOCOMOTIVE WORKS OF THE GREAT EASTERN OF FRANCE.

This being only a running depôt for locomotives the running repairs are effected in round sheds, I saw several locomotive engines on Crampton's patent, of which they there being two very large ones. have one hundred for running fast trains. The carriage and waggon shops are very extensive, as they build a large quantity of new stock here annually. Many of the carriages have iron panels. A considerable portion of the rolling stock in use appeared very old, and in every respect inferior to that on the English lines. The Westinghouse automatic air brakes are used in the engines and passenger stock.

Electric communications between guard and driver are adopted, the wire for which is taken over the roofs and down the ends of the carriages with a coupling for each wire arranged so that if a coupling were to break, or if uncoupling is neglected, it will part without breaking the electric coupling or wire. The wires are connected at the ends of the carriages. Although the gauge of French railways is 4 ft. 8½ in. the carriages are wider than English carriages, the first-class compartments accommodating four and the

second-class five passengers.

LOCOMOTIVE WORKS OF THE PARIS AND LYONS RAILWAY.

These shops are about 3 miles out of Paris, and classed amongst the largest and most important in France, upwards of 900 men being employed in them. Locomotive engine building is carried on exclusively. The shops are very fine roomy buildings, with roads through them, but as regards lifting appliances they do not compare favourably with English workshops, at which I was much surprised, as French scientists and mechanics have a very high reputation. This Company adopt very rigid tests for all running stores, also steel, iron, ropes, leathern belts, &c. &c. The Westinghouse automatic air brake is used in all the passenger stock on this line.

ELWELL'S WORKS, PARIS.

These are large engineering works in which tools and shop appliances for French railways are manufactured. Between 300 and 400 hands are employed, and the class of work appeared to be good.

With the knowledge I have acquired of what is regarded as the best design for workshops, as well as from my long experience of locomotive requirements, I am exceedingly pleased to be able to say that our new shops will compare very favourably both in design and general arrangements with the best I have seen in my travels, the only serious objection being the want of sufficient space for enlargement when the necessity arises, as it most assuredly will, and I feel I should be neglecting my duty were I not to call attention to the necessity for additional land being provided to meet it. I am convinced that if the whole of the land at Eveleigh was available for locomotive; purposes it would not be enough to meet our future of the land at Eveleigh was available for locomotive purposes it would not be enough to meet our future requirements, even if it were not, as it is, intersected by the main lines running through it.

As for the tools necessary to properly equip the new shops, I collected all the information possible both by inquiry and observation, with the view to obtaining those best adapted to our requirements. I drew up specifications for makers to tender by, and the result is that we shall have the very best machine-

tools at the lowest possible prices.

I was naturally anxious to see what changes had taken place in the design of engines and rollingstock on English lines since I left it twenty-seven years back; and speaking generally, I find that they are no nearer now than they were then to arriving at standard classes of either engines, carriages, or waggons.

On nearly every line you will find a distinct class of engine for performing work that is common to all lines, with little difference of grade on any of them. As a rule you will find an express class, a goods class, and a suburban class of engines on each of the lines, differing considerably from those used for a class, and a suburban class of engines on each of the lines, differing considerably from those used for a similar class of work on any other line; in fact each Locomotive Superintendent has his own opinion of what is best, hence the diversity of classes. Speaking generally, the construction of locomotives on English lines does not materially differ from those built thirty years ago, the most striking points of difference being a tendency to make them heavier, and instead of the large single driving-wheel for fast passenger trains, four-wheeled, coupled, from 5 feet 6 inches to 6 feet 6 inches and a few 7 feet are used. Bogies of different form are coming into use, such as Adams' four-wheeled and the Bissel bogie. Radial axle-boxes are much used, particularly for the leading or trailing wheels. There are two axle-boxes coupled together which form a segment of a circle when rounding curves with a long wheel have and are coupled together which form a segment of a circle when rounding curves with a long wheel base, and are considered very satisfactory. Joy's patent valve motion is being very generally adopted, and is said to give very excellent results.* The most startling novelty in engines is, however, Mr. Webb's compound engine, which I have before described. At several of the large locomotive works steel plates for boilers and frames are used. It has also been tried for inside fire-boxes, but it did not answer on account of the plates cracking and wasting away after being a short time in use, so that they had to be taken out

and copper substituted.

With the knowledge possessed of the suitability of American steel for fire-boxes, the English engineers have been endeavouring to account for the failure of the English steel. It was stated that the engineers have been endeavouring to account for the failure of the English steel. It was stated that the cause of failure was in the water, and it was suggested that a number of American steel plates should be obtained and used in English engines as a test, the result of which will be looked for with much interest. There is a difference of opinion as to the proper type and weight of tank-engines for suburban traffic. Many of those in use have 17-inch cylinders with a 24-inch stroke and four wheels of 5 feet 6 inches diameter, coupled. The weight of this engine, loaded, is 34 tons. This is the standard engine now approved of by Mr. Strindley, of the London and Brighton line, who a few years back was in favour of small engines, wheels of 4 and 5 feet diameter. The Westinghouse of small engines, about 27 tons, with six coupled wheels of 4 and 5 feet diameter. The Westinghouse air-brake, automatic, is used on the passenger stock of the Midland, the London, Brighton and South The Westinghouse Coast, the Caledonian, Great Eastern, London, Chatham, and Dover, North-eastern, West Lancashire, Glasgow, and South-western and the North British and South. Vacuum brakes are used on the Great Western, London, and South-western, Manchester, Sheffield, and Lincoln, and the Great Northern, &c.

On the London and North-western the chain brake is still in use throughout the trains.

I consider the rolling-stock has been improved much more than the locomotives. The carriages are more roomy in every way, and are consequently much more comfortable than they used to be, and the waggons are generally built to carry greater local.

The six-wheeled first-class carriages on the Great Western Railway are 29 feet long, 7 feet high to centre of roof, weigh 9 tons 16 cwt., and carry twenty-four passengers.

The six-wheeled second class carriages are 25 feet long 7 feet high, weigh 8 tons 19 cwts. 1 qr., and accommodate thirty-two passengers. The third class 6-wheel carriages are 28 feet long, 7 feet high, weigh 9 tons 12 cwt., and carry fifty passengers.

The carriages on the London and North-western Railway are six-wheeled, of much the same dimensions and weight as those on the Great Western.

The carriages on the North-eastern Railway are four-wheeled, the composite class being 28 feet long, 6 feet $9\frac{3}{8}$ inches high, weigh 8 tons 18 cwt. 2 qrs., and carry eighteen first-class and ten second-class passengers. The second and third class are about the same length, height, and weight, and carry forty

and sixty passengers respectively.

The South-eastern Railway has both six and four-wheeled carriages. The six-wheeled first-class carriages are 28 feet long, 7 feet high, weigh 9 tons 17 cwt., and carry twenty-four passengers. The four-wheel first-class carriages are 21 feet long, 7 feet high, weigh 7 tons 13 cwt. 2 qrs., and carry eighteen passengers. The second and third class four-wheeled passenger carriages are 24 and 27 feet long respectively, 7 feet high, weigh 7 tons 16 cwt. and 8 tons 7 cwt., and carry forty and fifty passengers

The Great Northern has six-wheeled first-class carriages, 28 feet long, 7 feet high, which weigh 11 tons 11 cwt., and carry twenty-four passengers. The second and third class carriages are four-wheeled, 23 and 26 feet long respectively, 7 feet high, and carry thirty-two second and fifty first-class passengers, and

weigh 8 tons and 8 tons 11 cwt.

The London, Brighton, and South Coast Railway has six-wheeled first-class carriages, 28 feet 4 inches long, 6 feet 10 inches high, which weigh 9 tons 9 cwt., and carry twenty-four passengers. There are four-wheeled first-class also, which are 26 feet long, 6 feet 10 inches high, and weigh 7 tons 1 cwt. 2 qrs., and carry thirty-two passengers. The second and third class carriages are 26 feet long, on four

wheels, 6 feet 10 inches high, which weigh 6 tons 18 cwt., and carry fifty passengers each.

The Midland Railway has no second-class carriages. The four-wheel first and third class are 29 feet long, 7 feet 1 inch high, which weigh 9 tons 6 cwt. and 8 tons 16 cwt., and carry twenty-four and fifty passengers respectively. In addition to the four-wheeled stock there are a number of composite carriages, carried on six-wheeled bogies at each end. These carriages weigh 24 tons, and seat twenty-four first and forty third-class passengers. These are somewhat similar to the Ashbury carriages on our lines, and were made by the same firm. The London and South-western Company has a number of carriages carried on

four-wheel bogie trucks. These carriages, like the Ashbury class, have side-doors.

The goods stock is all very strongly built, and it is at once evident the tendency is not in the way of reducing the dead weight of the vehicles, but rather to strengthen the stock so that greater loads may be carried. The waggons are all carried on four wheels.

The waggons on the Great Western are 15 feet 6 inches long and 7 feet 6 inches wide. The covered goods waggons are 6 feet 2 inches high, weigh 5 tons 6 cwt., and carry a 9-ton load. The medium-sided (similar to our D trucks) weigh 43 tons, and carry 9 tons, and the low-sided trucks weigh 41 tons and carry 9 tons

On the London and North-western the waggons are the same length as on the Great Western (15 feet 6 inches), but are 7 feet 8 inches wide. The covered waggons are 6 feet high, weigh 5 tons 11 cwt. and carry 7 tons. The medium waggons weigh 4 tons 13 cwt., and carry 7 tons, and the low-sided trucks weigh 41 tons, and carry 7 tons.

The waggons on the North-eastern lines are only 15 feet long, but are 7 feet 11 inches wide. The covered goods vans, 5 feet 6 inches high, weigh 5 tons 19 cwt., and carry 8 tons; and the medium and low-sided stock weigh 5 tons 9 cwt. and 4 tons 15 cwt., and carry 8 tons.

On the South-eastern Railway the waggons are 15 feet 5 inches long and 7 feet 7 inches wide. The covered goods vans are 6 feet 6 inches high and weigh 5 tons 11 cwt 2 grs for a load of 8 tons.

covered goods vans are 6 feet 6 inches high, and weigh 5 tons 11 cwt. 2 qrs. for a load of 8 tons. The medium and low-sided waggons weigh 5 tons 6 cwt. 2 qrs. and 4 tons 7 cwt. 1 qr., and carry a 10-ton load.

The Great Northern covered vans are 16 feet long, 7 feet 8 inches wide, and 6 feet 2 inches high. They weigh 5 tons 17 cwt., and carry 8 tons. The medium-sided (3 feet) waggons are 15 feet long, 7 feet 6 inches wide, weigh 5 tons 4 cwt., and carry 9 tons; and the low-sided waggons are 17 feet long, 7 feet 11 inches wide, weigh 5, and carry 9, tons.

The London, Brighton, and South Coast Railway goods stock are as follows:—High-sided, 2 feet 11 inches, open goods waggon, 15 feet 5 inches long, 7 feet 9 inches wide, weighs 5 tons 3 cwt., and carries 10 tons. The medium-sided (1 foot 9 inches) stock of the same length weighs 4 tons 2 cwt. 1 qr., and carries 7 tons; and the low-sided waggons are 12 feet long, 6 feet 81 inches wide, weigh 3 tons 3 cwt. 2 qrs.

On the Midland line the covered goods waggons are 15 feet long, 7 feet 6 inches wide, and (only) 5 feet $2\frac{1}{2}$ inches high, weigh $5\frac{1}{4}$ tons, and carry 6 tons. The medium-sided (1 ft.) of the same length and 1 inch less in width, weigh 4 tons 14 cwt., and carry 8 tons; and the low-sided waggons are 17 feet long, 8 feet 8 inches wide, weigh 5½ tons, and carry 10 tons. Some of the suburban trains have central buffers and couplings, which are never uncoupled excepting when brought in for repairs.

TRAMWAYS.

I ENDEAVOURED to obtain as much information as possible about the construction and working of

Tramways both in Great Britain and on the Continent.

They are generally in wide streets, which are There are a number of horse tramways in London. chiefly paved with either stone or wooden cubes, the latter being made from the ordinary Baltic pine. The cars, which carry twenty inside and twenty-two outside, are on four wheels. The speed is between 5 and 6 miles per hour.

The system adopted for checking fares is as follows:—The conductor sells tickets, which he punches (as he hands them to the passengers), when he enters on a paper form placed in a temporary frame near the entrance door, and in view of the passengers, the number of fares received both from inside and outside passengers as the cars are on the journey. Several inspectors are engaged, whose duty it is to check the conductors, by seeing that each passenger has a ticket, and that the total agrees with the number entered on the form, before referred to, by the conductor. These inspectors may jump on at any part of the trip, so that the conductors may not be aware of their movements.

A cable road, on Hallidie's patent, is about to be laid at Highgate, for which the sanction of the Board of Trade has been obtained. It is about a mile long, with steep grades. It is intended as an experiment, which, if successful, will no doubt be the means of a number of cable roads being made where

steep grades have to be encountered in street traffic.

A Corporation has already been formed in London, with a capital of a million, for leasing, working,

and constructing tramways on Hallidie's Patent Cable system.

The gross receipts for the twelve months ending June, 1882, of the following horse tramway lines in London, as shown by their reports, were-

The North Metropolitan Tramway ... 297,422 The London Tramway The London Street Tramways 69,393 £579,009 Total

The average cost of these three lines is 76 per cent. of the gross receipts.

On a tramway line at Holloway, Megarski's Air Motors are to have a trial, the one I saw in course of construction at Appleby's Works, Greenwich, being intended for this line. (For full particulars of Megarskie's motors, see remarks on Appleby's Works, page 23).

By invitation of Colonel Beaumont, R.E., I accompanied a party to Dover, for the purpose of seeing

his compressed air-motor in operation on some works connected with the Channel Tunnel.

The air-compressing arrangements and appliances were of a temporary character, it being built merely as an experiment. It drew twelve waggons of shale for a short distance, which, under the circumstances, was considered satisfactory. I obtained full particulars of trials made with it by Captain Galton, F.R.S., Mr. Richard Rice Williams, C.E., and Mr. William Kirtley, the Locomotive Superintendent of the London, Chatham, and Dover Railway, which afford valuable information as to their adaptability for tramway work

The following is a summary of the trials made:—

Summary of trials made with the Beaumont Compressed-Air Locomotive, at the North Metropolitan Company's Depôt, Stratford, January 24th, 25th, 26th, and 27th, 1882, based on detailed report of Messrs Greathead and Eykyn, C.E.'s, referred to in report of Captain Douglas Galton, F.R.S., Richard Rice Williams, C.E., and William Kirtley, Locomotive Superintendent, London, Chatham, and Dover Railway.

Air-Compressor.—The boiler of the air-compressing engine was a locomotive boiler of the ordinary

For compressing the air a compound high-pressure horizontal engine with variable cut-off was used, having two cylinders of 12 inches and 20 inches diameter and 2 feet stroke with cranks set opposite, and working directly for stage pumps of 12 inch, $6\frac{1}{2}$ inch, 4 inch, and $2\frac{1}{2}$ inch diameter respectively, placed in two tanks of water. Intermediate coils between the pumps served to cool the air, so that it was barely warm on leaving the compressor.

The air, cold, after passing through a considerable length of small iron pipes, was delivered direct

into the reservoir of the locomotive.

Locomotives.—Consisted of a pair of engines working on four cranks set in two opposite pairs, each pair of opposite cranks being at right angles to the other, each high and low pressure cylinder being connected to each pair of opposite cranks.

Diameter of the cylinders, high-pressure 2 inch, low-pressure 7 inch, stroke 18 inches. Variable cut-off from 0 to full.

Driving done by the cut-off.

The air was heated before entering the cylinders by being passed through steam-jacketed coils, the steam being supplied from a small boiler on the locomotive.

The air-cylinders were also steam-jacketed. The driving-wheels were 3 feet in diameter. The capacity of the reservoir was 96.2 cubic feet.

The feed-water to boiler was supplied quite cold by a small donkey-engine.

The firing was done by hand, and the state of the fire was carefully observed, so as to secure at the termination of each trial as nearly as possible the same fire as at the commencement.

The quantity of coal used for getting up steam was 6 cwt., the boiler full of water to begin with

being too hot for the hand, but with no pressure.

The height of water in the boiler was also noted; on January 24th (trial No. 1) it was the same at the finish as the start, but on January 25th (trial No. 2) the level was $\frac{7}{8}$ in. lower at the finish than at

The steam-pressure was also noted from time to time, and at the commencement and ending of each trial it varied between 95 lbs. and 100 lbs. per square inch.

The power given by the locomotive was measured by a friction dynamometer, the engine being lifted that its driving-wheel ran freely.

Counters were fixed both on the locomotive and compressing engine.

TRIALS

TRIALS made on January 24th and 25th.

To determine the quantity of fuel consumed, indicated horse-power of compressing engines, and corresponding power given by the locomotive, the pressure of air in the locomotive being maintained constant at 1,000 lbs. and 750 lbs. per square inch.

Duration of trial	1,000 lbs. H. M. 4 O	750 lbs. н. м. 4 О
Fuel consumed { Under main boiler	cwts. lbs. 10 56 0 52	cwts. lbs. 10 0 0 44
Indicated power of compressing engines—		,
Total number of revolutions	11,473 47 [.] 8	12,052 50·21
Hp. developed by high-pressure cylinder Hp. developed by low-pressure cylinder	36·37 28·92	39·11 30·97
Total power exerted by engines	65:29	70:08
Actual consumption of coal per indicated horse-power per hour	4·5 lbs.	4:0 lbs.
Horse-power developed on the brake by the locomotives—		
Total number of revolutions Average number of revolutions per minute Mean power exerted, hp Percentage of the indicated horse-power of the compressing engines	17,755 73·98 13·12 20·1	18,974 79:0 14:0 20:0

January 26th.

To determine the quantity of effective power stored in the reservoir of the locomotive as given off on the brake, capacity of reservoir being 96.2 cubic feet; the power exerted by the engine was practically kept constant throughout the trial.

	First experiment.	Second experiment.
Initial pressure in reservoir Final pressure in reservoir, the engine being stopped by the brake Duration of run	1,000 lbs. 260 39 minutes	1,000 lbs 275 37 minutes
Total number of revolutions	3,403	3,113
Average per minute	87·25 12,731,439 lbs.	84 17 11,646,480 lbs.
Mean power	9·88 H.P.	9·53 H.P.
1,000 lbs	5·36 H.P.	5 06 H.P.
engine consuming an average of 4.2 lbs. of coal per hp. per hour Amount of coal which would be used with economical engines working	1.8 lbs.	1.8 lbs.
at 2 lbs. per hour, to put 1 cubic foot of air up to 1,000 Amount of coal required to haul 1 ton 1 mile on a railway	0.87 lbs. 0.2928 lbs.	0.87 lbs.
Amount of coal required to haul 1 ton 1 mile on a tramway	0.73 lbs.	
		·

The rise of pressure, as shown by the gauge on the reservoir, corresponded very closely indeed to the volume swept through by the piston of the large air-compressing cylinder, showing that the loss of

air from leakage, clearance spaces, &c., &c., was insignificant.

I believe that with a somewhat modified arrangement of valves and air-ways in the compressor, the h.-p. required to compress the air, as evidenced in the above trials, may be reduced about 25 per cent.,

h.-p. required to compress the air, as evidenced in the above trials, may be reduced about 25 per cent, thus improving by that amount the efficiency of the system.

Briefly, the results of the trials of January the 24th and 25th may be stated as follows:—

The first day's experiments extended over a period of four hours, with a constant pressure in the reservoir of the locomotive of 750 lbs. on the square inch, and the weight applied to the brake was such as to require the locomotive to develop on an average throughout the period of four hours 14 h.-p., to overcome the frictional resistances of the brake while running at an average of 79 revolutions per minute, corresponding to a speed of about 85 miles an hour, while in order to keep the locomotive running at this speed the compressor engine indicated about 70 h.-p., showing that the effective power of the locothis speed the compressor engine indicated about 70 h.-p., showing that the effective power of the locomotive under these conditions was just 20 per cent. of the total indicated power of the compressing engine.

The results obtained during the second day's experiments, which were made under precisely the same conditions, with the exception that the pressure in the locomotive reservoir was maintained at 1,000 lbs. instead of 750 lbs., as on the former occasion, were exactly the same, the power developed by the locomotive to overcome the friction of the brake at a speed of seventy four revolutions per minute being 20 per cent of the indicated power of the compressing engine. The amount of fuel consumed by the compressing engine, it will be seen, was at the rate of 40 lbs. per 1 h.-p. in the first experiment, and 45 lbs. per 1 h.-p. per hour in the second. This consumption, together with the small amount of fuel (viz., 0.78 lbs. to 1.0 lb. per h.-p. per hour respectively) required on the locomotive for heating the expanding air, would be equivalent to 20.7 lbs. of coal per effective horse-power on the first day's trial, and 23.4 lbs. on the second day's trial. Taking the average of the two days' trials, therefore would give 23.0 lbs. of coal. In order to saying a ten a will can the milway when the amount therefore, would give 22.0 lbs. of coal. In order to carry a ton a mile on the railway, where the amount of the frictional resistance would be considerably less than on a tramway, and assuming the average resistance (constant and variable) to be 10 lbs. per ton, the power required to be exerted to haul a ton a mile at an average speed of (say) 15 miles an hour, would be 5,280 × 10 lbs. = 52,800 foot lbs., or 1.6 dyn. h.-p. It has already been shown that the average results of the two days' trials give 22.0 of coal per effective horse-power per hour, and $\frac{22.0}{10.0} = 0.366$ lbs. per dynamical horse-power, equivalent to 0.366 lbs. 1.6 dyn. h.-p. = 5856 lbs. of coal to haul 1 ton a mile on the level lbs. \times 1.6 dyn. h.-p. \equiv 5856 lbs. of coal to haul 1 ton a mile on the level.

It is obvious, we think, that with compressing machinery working on a larger scale, and with highpressure condensing engines, the consumption of fuel ought to be very much less than the 4.25 lbs. per
1 h.-p. per hour shown in these trials; and assuming that it can be reduced to half that amount, the quantity
of coal required to haul 1 ton a mile would then of course be correspondingly reduced, and amount to

no more than 0.2928 lbs.

The average consumption of coal for passenger trains on nine of the principal English railways, is 30.76 lbs. per passenger train mile; and taking the average gross weight of a London and North-western passenger train at (say) 245 tons, and the average consumption of coal at 30.30 lbs., which closely agrees with the average of the other lines, the coal required to haul 1 ton a mile would be just 124 lbs.

A reference to the diagrams already referred to shows, we think, very strikingly, that the locomotive was driven on each occasion at a fairly regular speed against the resistance of the brake (amounting to 9.88 h.-p. in one case and 9.53 h.-p. in the other), although the pressure in the reservoir varied from 1,000

lbs. to 275 lbs. per square inch.

DOUGLAS GALTON R. PRICE WILLIAMS. WILLIAM KIRTLEY.

These reports, which may be considered to an extent satisfactory, induced me to visit Stratford, with the view of seeing the "Beaumont" engine at work, in which I was disappointed, as it had been stopped from running, owing to it frequently getting out of order, necessitating horse-power to be substituted for it. I was informed that the trial of this motor was looked upon in the light of an experiment.

As regards the relative merits of the Megarski and Beaumont motors for tramway work, I cannot, from the information afforded to me, offer an opinion. To my mind, the practical knowledge which can alone be acquired from experience of their working is the only reliable basis upon which such an opinion can be formed. I may state that the principles upon which these air-motors are constructed are not held in much favour by scientific men. The whole affair is looked upon as merely experimental and quite in its infancy, and it is considered very doubtful if it will ever be a success as a motive power

When in Leeds I examined the system of the steam trams in operation, which are worked by Kitson's motors, similar to those in use on our lines. I travelled on it for some distance, the motor drawing only one car would seat about twenty passengers inside and twenty-two outside. It worked smoothly, and is evidently much appreciated by the public. The Chairman of the Tram Company, after an eighteen months' trial of the Kitson motors, expressed the opinion that they had performed their work satisfactorily. Notwithstanding that a portion of the line runs through crowded streets, and about a mile of pretty stiff grades,* no material complaints have been made as to the emission of steam or smoke. As to the comparative cost of steam and horse tramways, both of which are in operation, the advantage in

favour of the steam is found to be very considerable.

Both at Sheffield and Manchester there are a large number of horse tramways, the cars upon which carry forty-two passengers each. Several of the cars were constructed so that their bodies, which were worked on swivels, enabled them to be reversed from one end to the other by the horses, upon the driver pulling out a catch. By this system the necessity for taking out the horses or turning the cars is obviated. The cars have but one stair for passengers to ascend to the roof. The stairs are attached to the body, and are always at the end furthest from the horses. At Sheffield I observed large traction engines drawing heavy

loads of iron, steel, &c., which did not appear to travel over 4 miles an hour.

There are very extensive horse tramways at Liverpool, Birmingham, and Bradford, similar to those at Sheffield and Manchester. In addition to horse, Glasgow has steam tramways. I travelled on the Govan branch of the Vale of Clyde line, which is worked by Kitson's motors.

The car carries sixty passengers, but I was informed that at busy times an additional car, capable of carrying forty passengers, is taken. The cars are carried on two four-wheel bogies, similar to those used on our lines. The line I travelled over was practically level, and runs through a populous district. The Tramway Company express themselves as being well satisfied with the working of the Kitson motors; but I noticed that, through the exhaust steam being forced through a series of small pipes for condensation,

a jerky motion at the end of each stroke of the piston is caused, which is not at all agreeable.

Edinburgh also has a steam tram-line.* It runs from Waterloo Place to Portobello, a distance of a little over 3 miles, the steepest gradient being 1 in 28. The Kitson motors are used and the cars, which carry forty passengers, are somewhat similar to those used on the Glasgow line, two of which, See diagram E carrying eighty passengers, are generally used. I noticed the same jerky motion at the end of the stroke, in the motor I travelled with on this line, that I referred to in my description of the Glasgow line. This class of motor is also in use on lines at Blackburn and Burnley in England,* Dublin and Portrush in Ireland, Canterbury and Dunedin in New Zealand, and at Calcutta in India.

There are steam tramways in Staffordshire, upon which engines built by Manning, Wardle, & Co., weighing from 13 to 15 tons, were used. I ascertained they had ordered several of the Wilkinson type of motors, weighing about 8 tons, which could be worked at much less cost, as the line was not substantial enough for the heavier class, consequently the cost of maintenance was very large

In accordance with your instructions I called on Mr. Arthur Rowan in London, with the view of obtaining information about the "Rowan combined motors and cars" which were said to be working on a line in Denmark. After calling several times I succeeded in seeing Mr. William Rowan, who had just returned from the Continent. He informed me that unless I had other business in Denmark it was quite unnecessary to go there to see their motors at work, as some were forwarded to Victoria to be worked on some light railways which he considered would be a better test of their capabilities for tramway work than any information I could get in Denmark than any information I could get in Denmark.

See diagram I.

*See diagrams F, G, & H.

The Dewsbury, Batley, and Birstal tramway line, which is about 31 miles, is worked by steam, the

Merryweather motor being used.

This line is an easy grade of about 1 in 200. The rails are of wrought iron, and weigh 41 lbs. to d. The rails are $3\frac{1}{4}$ inches wide and 2 inches deep, and are carried on chairs 3 feet apart, to which they are secured by vertical spikes through the bottom of the groove. The chairs, which are cast iron, are laid in concrete, run in with pitch, and the rails are packed underneath with concrete. This line is paved with granite 4-inch cubes between the rails, and cubes of 6 inches deep for 18 inches outside of

The motors have 6½ inch cylinders, with a 10-inch stroke, and four coupled wheels 2 feet 2 inches diameter. The cylinders are placed inside the framing and are joined together at the middle, where they form the valve chest, whilst a saddle is placed on each half for the purpose of supporting the boiler at the smoke-box end. The feed tank, which holds 100 gallons, is placed in front of the smoke-box. A fender is fixed at each end of the engine, to remove obstructions. The working pressure of steam in the boiler is 140 lbs. per square inch. The weight of this motor is 7 tons in full working order. The cars (one of which is generally and two occasionally drawn) weigh loaded about 3 tons. The double journey, $6\frac{1}{2}$ miles, is done in sixty-five minutes, including stoppages, thus giving an average speed of 6 miles per hour.

The working expenses per diem of each motor, running 72 miles, is as follows:-

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					_	
• •		•••	• • •	• • •	13	$11\frac{3}{4}$
		t) (do)	t)	t)	t)	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

which is equivalent to 2.33 pence per mile run, which is exclusive of renewals.

It has been ascertained that the cost of working this line by horse traction is $4\frac{1}{2}d$. per mile run per car, or nearly double the cost of engine power.

Merryweather motors are used on a tramway at Stoke-on-Trent, which is 4-feet gauge. engines are larger than those on the Batley line, weighing in working order $10\frac{1}{2}$ tons. This line is about 3 miles long and has several steep grades, some of them being 1 in 16, 1 in 18, and 1 in 20. The cars weigh about 3 tons and carry forty-eight passengers.

The engines take a loaded car up these inclines at a speed of from 4 to 5 miles an hour.

I ascertained that Merryweather's motors had been ordered for tramway lines at Liverpool, Stockton

on Tees, Darlington, Cardiff, and Guernsey.

At Bristol some of the tram lines on the Horsfield system were worked for a time, as an experiment, by seven of Hughes' motors, which had been running on the Paris lines, but owing to prejudice against steam-power and other influences they were abandoned, although so far as I could learn they had persteam-power and other influences they were abandoned, although so far as I could learn they had performed their work satisfactorily as compared with horse traction. The prevailing grades on this line are from 1 in 24 to 1 in 68. The Hughes motors have 7 in. cylinders, with a stroke of 12 in., and four coupled wheels $2\frac{1}{3}$ ft. in diameter. The pressure in the boiler is from 80 to 100 fts. per square inch. This engine weighs in full running order $7\frac{1}{2}$ tons. It is rather singular that in both Paris and Bristol, when these engines were worked, the use of steam power was abandoned, so that the suitability of this class of engine for tramway work is very questionable. The Bastille-Charenton line at Paris, where twelve of these motors were in use, is over 4 miles in length, the steepest grades upon which are 1 in 20 for 100 yards and 1 in 29 for a similar distance. The duty they had to perform was to draw one car capable of carrying forty-six passengers, the gross weight to move being about $11\frac{1}{2}$ tons. The journey (4 miles) was run in thirty-five minutes, being a speed of 7 miles an hour. The engines ran about 67 miles per diem, and consumed 17 fts. coke per mile run. The expenses averaged as follows:—

d.

u.
2.218
1.840
$\cdot 148$
$\cdot 160$
2.357
6.723
2.702
9.425

It is stated that the immediate cause of the contract entered into for working this line by steam being abandoned was owing to the engines frequently breaking down through (it is alleged) a lodgment of a compound of grease and lime on the walls of the fire-boxes (the grease being derived from the condensed steam and the lime from the water), by which means the fire-boxes became overheated and bulged inwards, and the tubes leaked and broke.

It was found that the condensing apparatus employed in these engines was uncertain in action,

and very fickle, which caused, it is believed, a considerable back pressure on the pistons.

A more powerful class of motors was designed by Mr. Hughes for the Lille-Haubourdin line, which is level and about $5\frac{3}{8}$ miles in length; also for the Lille-Roubaix line, which is about $6\frac{3}{4}$ miles long, the steepest grade upon which is 1 in 22. These engines have 9-in. cylinders, with a 13-in. stroke, and four coupled wheels $3\frac{1}{2}$ ft. diameter. The tank holds 400 gallons of water, which is heated by exhaust steam up to boiling point on the trip. The weight of these engines is 10 tons in running order.

The

The Hughes Engine Company contracted to supply the steam power for these lines at the same rate paid to them for the line at Paris, viz., 6.9d. per mile run with one car, and 9.2d. per mile with This contract only lasted four months, after which the engines were hired for a year. It is stated that these engines were worked at a disadvantage owing to their having to take their turns between horse-cars, which limited the speeds, it taking fifty-five minutes to run 5 13 miles, and they were compelled

horse-cars, which limited the speeds, it taking fifty-live minutes to run o'13 miles, and they were compelled to stop from twenty to twenty-five minutes at one terminus and from eight to ten minutes at the other.

Tramways at Rouen in France are worked by steam. The motors chiefly used on them are the Merryweather. The ruling grade at one end is 1 in 20, and the average grade is 1 in 40. The speed is 5 miles per hour in town, and 8 miles per hour outside. The total working expenses per mile run on this line is 8 12 pence. The average run per diem by each engine on duty is 56 miles. The cars weigh 2 tons 18 cwt., and carry forty-six passengers. Two cars of a gross weight of $12\frac{1}{2}$ tons, which is as much as the

engines will draw, are taken.

There are several lines of tramways in Belgium, Germany, Spain, and Italy, worked by steam, upon

most of which the Merryweather motor is used.

There is a tram line at Berlin 8 miles long, upon a section of which a motor designed by Krauss & Co., of Munich, is used. The cylinders (outside) are 6.3 inches diameter and 11.8 inches stroke. The wheels, 4-coupled, are $24\frac{3}{4}$ inches diameter, placed 6 feet apart from centre to centre. The heating surface is 139 square feet, the working pressure is 170 lbs. per square inch, and the weight in working order $7\frac{1}{3}$ tons. This engine draws one car which carries forty-eight passengers below and fifty-two above, with standing room for forty additional, making a total of 140 places. The weight of this car, which has the top covered in, is 111 tons

On the Cassel and Wilhelmshohe tramway, which is $3\frac{1}{2}$ miles long, in addition to Merryweather motors, there is an engine built by Herschel & Son, of Cassel, which has inside cylinders 7.87 inches in diameter and 11.8 inches stroke. The wheels are 4-coupled, $24\frac{3}{4}$ inches diameter, on a wheel base of 4 feet 7 inches. The weight in working order, $9\frac{3}{4}$ tons. This engine can take two cars holding eighty pas-

sengers each up an incline of 1 in 17 and on curves of 52 feet radius.*

In the opinion of all those whom I have spoken to who have a knowledge of tramway working, it is a foregone conclusion that horse power will ultimately be entirely superseded by mechanical power, but

it is very questionable if the best form of engine for mechanical propulsion has yet been invented.

Judging by what came under my own notice, I have no hesitation in asserting that both the motors pared most favourably in construction and accommodation with those used on English and Continental lines. and cars on our tramway lines are better adapted for their work than any I have seen, and certainly com-

I am very certain that those who have experienced the conveniences of our tramway system would never be satisfied with either the speed or accommodation afforded by horse tramways.

I am decidedly of opinion that in localities where steep gradients prevail the cable tramways will

be found to be the most suitable.

In most of the cities, both in America, England, Scotland, and France, where I have seen tramways in operation, the streets are paved with stone or wooden cubes. In many cases the cubes are laid between

and for about 2 fect outside the rails. In a few places they are on ordinary macadamized roads.

With reference to the obtaining of some of the most improved type of water cranes, I made diligent inquiries of those who had experience of what is best and most economical. Two different designs were strongly recommended to me as being very superior, so I ordered three of each to be forwarded.

One type has a column with a stop-valve above ground, and a short arm with a leather hose.

One type has a column with a stop-valve above ground, and a short arm with a leather hose. The other type has a column and a long arm for swinging round, similar to those we have now in use on our lines; but they have the stop-valves above ground, so that they can be readily got at for repairs.

1 regret that with the limited time at my disposal I could not make a more lengthy stay in America and on the Continent, as I am sure I should have been enabled to obtain a large amount of additional information in reference to railway and tramway working which would be of service to the Department.

I have to express my thanks for the very many obligations I am under for the courtesy with which I was treated by the locomotive superintendents of the different railway companies' works, as also the proprietors and managers of the workshops which I visited, and for the assistance they afforded in forwarding the objects I had in view. I also desire particularly to express the obligations I am under to Sir Saul Samuel, the Agent-General for the Colony, Mr. John Fowler, C.E., our inspecting engineer, and his able assistant, Mr. J. D. Baldry, for the very valuable assistance and advice rendered by them.

I wish to say in conclusion that I am deeply sensible of the kindness and liberality of the Government in having afforded me such an excellent opportunity of seeing the advances that have been made in scientific and mechanical appliances connected with railway and tramway construction and working; and I am sanguine that the knowledge I have acquired will conduce to the more effective conduct of the business of the branch of the Railway Department which has been placed in my charge.

conduct of the business of the branch of the Railway Department which has been placed in my charge.

I have, &c., WILLIAM SCOTT.

^{*} I regret that I am unable to afford any information about De Faur's system, and it is certainly not owing to want of inquiry on my part.

APPENDIX A.

LONDON AND NORTH-WESTERN RAILWAY.

- -The men are to be paid at the rate of ten hours for a day regular time, overtime at the rate of two hours for a quarter; but before overtime is allowed, sixty hours must be made within the week. All time over and above sixty hours must be counted as overtime, and paid for at the rate of two hours for a quarter. Sunday time must be reckoned time-and-a-half, that is, ten hours to be a day and a half, and any portion of ten hours to be reckoned at the same rate. You must arrange for the extra men to work as near ten hours as possible. All the regular work will be done by diagram furnished through this office, and you must, for the present, fix the time that engines shall leave the shed to go to their trains, reporting to me the time you allow, which must be as short as possible compatible with the punctual starting of trains.
- 2.—When regular enginemen are engaged working mail and express trains, and are paid by miles and not by hours, 150 miles must be considered a day's work, and their rate of pay will be 7s. 6d. per day. Drivers working local passenger trains will be governed by diagram as heretofore, and will be paid at the rate of ten hours for a day, and overtime at eight, after they have completed sixty for the week. Drivers working on branch lines, who have hitherto been paid at the rate of 6s., must in future be paid 6s. 6d. per day. Through goods or mineral trains, upon the trip or mileage system, will be considered first-class work, and will be paid for at the rate of 7s. per day for 120 miles, overtime as before described. Local goods trains worked by diagram will be paid for as at present. Drivers engaged taking engines to and from the works must be paid at the rate of 5s. 6d. per day. Shunting enginemen must be paid 5s. per day of twelve hours, including meal hours where such are allowed. Where there is not the paid of the rate of two hours for a day and eventime at the rate of two hours for meals, they must be paid at the rate of ten hours for a day, and overtime at the rate of two hours for a quarter.
- 3.—In the case of enginemen working by the trip, or by mileage, time will not be taken into account, except in extreme cases of detention over which they have no control. In such cases, if the detention, including the time allowed for the trip, amounts to more than would be allowed by mileage, it must be paid for at overtime rate.
 - 4.—The following work will be done by the trip, and paid for as under :-

PASSENGER TRAINS.

Crewe to London and back Crewe to Carlisle and back	•••	•••	•••	•••	•••	2 days a 2	llowed.
,	Goods	TRAIN	18.				
Camden to Crewe and back	•••		•••	•••		$2\frac{1}{2}$ days a	llowed.
Crewe to Camden and back	• • •	•••	•••	•••	•••	$2\frac{1}{2}$,,
Manchester to Camden and back		•••	•••	•••	•••	3	,,
Camden to Manchester and back	• • •	• • •	•••	•••	• • •	ō	"

Any other work that can be satisfactorily arranged on the trip system will be done so from time to time.

- 5.—All extra enginemen in charge of regular or special trains must be paid 6s. 6d. per day; and extra enginemen assisting trains must be paid at the same rate.
- 6.—Men acting as relievers and turners must be paid at the rate of 5s. per day, working shop time; and their mates must be selected from the staff of cleaners most likely to become extra firemen. No alteration must be made in their wages whilst acting in that capacity.
- 7.—Enginemen will be promoted from 6s. to 6s. 6d., and from 6s. 6d. to 7s. per day, by merit and seniority.

 8.—Engine-turners acting in that capacity must be paid 5s. per day.
- 9.—It is agreed to continue fuel premiums, but it is intended to make some alteration in the standard allowed, and also to put each class of work on a more equal footing.
- 10.—Enginemen and firemen having made, by working on the link or long-strip system, or with special trains, their sixty hours, within (say) the first four days of the week, are not to be kept off duty two consecutive days to limit their time to sixty hours; but are, after having had a reasonable time for rest, to be allowed, if there is an opportunity during the same week, to resume duty at the overtime rate, viz., eight hours per day.
 - -Firemen will be paid as follows:-With shunting engines, and taking engines to and from the works 0 per day. When out on extra main line trains 3 When appointed to a regular train job-for 1st year ... 6 3 for 2nd year ... for 3rd year ...
- 12.—Firemen who may be fined to the amount of half-a-crown and upwards for misconduct will subject themselves to the postponement of their promotion for twelve months.
- -In future overcoats will be allowed annually, if the previous one supplied has been worn out by fair usage, or until the men are better protected on the engines, and at the next issue the men will be allowed to retain their old ones; but after that, on receiving a new coat they will have to give in the old
 - 14.—A free pass will be granted annually to each engineman and fireman and his wife or daughter.

APPENDIX B.

MIDLAND RAILWAY.

Regulations for Drivers and Firemen.

On and after Monday, November 10th, 1873, the following regulations respecting time, rates, &c., of drivers and firemen will come into force, viz.

Time.—All drivers and firemen to be paid at the rate of ten hours per day, time to be taken when the men come on duty (by order), and when they leave duty.

Shunters.—Time to be twelve hours for a day's duty, to include 11 hour allowed for meals. Over-

time to be paid for at the rate of eight hours per day.

Sunday duty.—All time made between 12.0 midnight on Saturday and 12.0 midnight on Sunday to be paid for at the rate of eight hours per day.

Overtime.—Overtime to be calculated at the rate of eight hours per day, and to commence after ten Time off duty.—So far as the necessities of the service will permit, nine hours at the least off duty to be arranged for.

Men off duty.—Men who are not called on duty in consequence of trains being unexpectedly stopped, to be paid as if on duty, if they have not made six days during the week.

Wages.—Enginemen will be paid at the following rates, viz.:

Second six months 6s. 6d.

Firemen to be paid-

First twelve months 3s. 6d. per day. Afterwards 4s. 0d. When passed 4s. 6d.

Firemen will be promoted to drivers by seniority and merit.

When men are required to lodge away from home they will be paid-Lodging allowance.-

2s. 6d. per night in the country.

1s. 0d. ditto, where lodging-houses are provided.

1s. 6d. ditto in London.

Leaving the service.—Fourteen days' notice to be given by either party.

Premiums.—For the year 1873 the usual premium of £500 will be distributed amongst those drivers who have kept the most correct time, and whose consumption of fuel and general stores is the lowest.—For 1874 and following years £1,000 will be distributed as premiums, and in addition the amounts deducted for fines will be added to the premium fund.

APPENDIX C.

GREAT WESTERN RAILWAY.

Staff.

The salaries and wages paid to the staff employed in the Traffic Department vary, of course, according to grade, length of service, and the importance of the duties performed.

The principal distinctions of grade in the Traffic Department (i.e., the station staff) may be

described under the following heads:

Station-masters, Goods Agents, Booking and other Clerks.

Inspectors.

Foremen.

Guards.

Signalmen.

Policemen.

Porters, and men of similar grades.

Station-masters, Goods Agents, Booking and other Clerks.

Station-masters on the Great Western Railway are of two classes. Those at larger and more important stations are salaried officers, the salaries varying from £80 to £325 per annum, while at the smaller stations they are called booking porters, and wear a uniform, the wages varying from 20s. to 35s.

The practice on this railway differs somewhat from that adopted by some other English Companies.

On the London and North-western Railway, for instance, very few of the station-masters, even at the largest stations, are salaried officers, their practice being to put the actual out-door work under the charge of a man in uniform, who is called a station-master, but whose general status approaches more nearly that of an inspector on the Great Western Railway.

These station-masters, beyond exercising a general supervision over the whole of the staff employed at the stations, have nothing to do with the accounts, whereas on the Great Western Railway, whether the person in charge of a station ranks as a station-master or as a booking porter, he is responsible for every part of the station work

every part of the station work

The station-masters and booking porters are responsible to the superintendents of the divisions in all matters relating to the working of the line and the conduct of the passenger and parcels traffic, and to the district goods managers for the proper reception, delivery, loading, unloading and invoicing of the goods traffic.

Of course at many stations no goods traffic is carried on, and the district goods managers, therefore, have nothing to do with such stations, while on the other hand, at some of the larger stations the passenger and goods departments are entirely separate, the station-master being responsible to the superintendent of the division, and the person in charge of the goods department—generally termed the "goods agent" to the district and the person in charge of the goods department—generally termed the goods agent"—to the district goods manager only.

In these cases the station-masters in charge of the passenger stations have nothing to do with the goods traffic until the trains come upon the main line, or the traffic is placed ready to be taken on.

The salaries of the goods agents vary from £90 to £350 per annum.

The divisional superintendents and goods managers are responsible to the heads of their respective departments, viz., the superintendent of the line and the chief goods manager, who act under the general instructions and supervision of the general manager.

Inspectors.

The inspectors are either "travelling" or "station inspectors," the duties of the former being to see that the signalmen, policemen, &c., understand and thoroughly carry out their duties, to inquire into irregularities in the running of the trains, and the working of the traffic in the division to which they are attached, reporting to and acting under the instructions of the divisional superintendent.

Station inspectors are attached to a particular station, and are required to see that the men at the station perform their duties in a proper manner, and generally to assist the station-master in the carrying

on of the out-door work of the station.

Inspectors, as a rule, are men who have worked their way up from lower grades, and are chosen for the positions they hold on account of the practical experience of the working of the line which they have gained.

The pay received by the inspectors varies from £80 to £150 a year in the case of district inspectors,

and from 25s. to 40s. per week in the case of station inspectors.

The term foreman porter is of itself almost a sufficient explanation of the duties required of a man

in that position.

At the smaller stations foremen are not required, but where several porters are employed it is customary to put them under the charge of a foreman, whose duty it is to see that the work is properly done

At the larger stations where a large number of men are employed, the staff is divided into "gangs,"

each having particular duties assigned to it, and there is generally a foreman over each gang.

The wages paid to foremen in the passenger department vary from 21s. to 35s. per week, according to the importance of the station; but in the goods department, where the work is generally heavier and largely carried on at night, the wages vary from 25s. to 35s. per week.

These are divided into two classes, passenger and goods. The wages of the passenger guards vary from 21s. to 40s. per week in the case of head guards, and from 21s. to 35s. per week in the case of

junior guards.

As a general rule guards commence service as porters, and, after having gained sufficient experience, are promoted as vacancies occur to the position of junior guard, on short journey trains. If their conduct continues to be satisfactory, they are, as they gain further experience, and as vacancies occur, promoted, those holding the position of head guard in express trains being, as a rule, the oldest and most experienced men of that grade in the service.

The goods guards are paid from 26s. to 30s. a week, according to length of service as guard; but in special cases, after a service of eight years as head guard, it is possible for a man to receive 31s. or 32s.

These men as a rule do not become passenger guards, though they are liable to be, and in times of

emergency are called upon to act as passenger guards.

The assistant goods guards, or "breaksmen," are paid at rates varying from 19s. to 24s. per week, and in course of time they are promoted to the position of head goods guard.

Signalmen.

On this railway the signalmen and switchmen are divided into four classes, their wages varying from 18s. to 32s. a week, according to the importance of the post and the amount of work to be done. These considerations also govern the hours of duty, which range from eight to twelve hours per day.

Men of this grade are entitled to receive an annual bonus of from £2 to £5, according to class,

provided the manner in which they have performed their duties during the previous twelve months has been thoroughly satisfactory. In the event of a man committing an offence involving the infliction of a fine, it is customary for the payment of the next bonus due to be deferred for a period of twelve months from the date of the fine.

- Policemen.

Under this head are included men acting as policemen upon the Company's premises, watchmen, and ticket-collectors, and their wages vary from 16s. to 20s. per week.

Porters.

These are of two classes—lad and adult.

The lad porters range from fourteen to eighteen years of age, and are paid from 8s. to 14s.

Adult porters commence at 15s., and, in the passenger department, rise to 19s. per week; but in goods department, where the work as a rule is more laborious, the wages rise to about 22s. per week.

In the goods department, however, the duties are of a multifarious character, and a man, though classed as a porter, may have to undertake the "checking" of goods in and out of the trucks, or the shunting of the trains, &c., &c., work which at the larger stations is performed by men styled "checkers," "shunters," &c., &c. These men are paid higher wages than ordinary porters, and at large stations act under the order of foremen, who, as explained above, are responsible for seeing the work properly done.

In the locomotive department the servants consist of

Engine-drivers, Firemen or stokers, Fitters or artisans.

With respect to drivers and firemen, these are of three classes—the men in the third, or commencing class, working branch passenger and goods, and local main line goods trains; those in the second class, local main line passenger and through main line goods trains; and the first-class men, through main line passenger trains.

The wages paid are as under:-

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		,									· B.	d.	
			(1st	year l "		•••	•••				3	6	per day.
	2nd and	3rd class	es $ brace$ 2 nd	ľ"		• • •		•••			3	9	- ,,
			(3rd	,,,	•••	•••	•••	• • •		• • •	4	0	,,
	1st class		{ 1st	,,	•••	•••	•••	• • •		• • •	4	3	,,
	_		(2nd	l "	•••	•••	•••	• • •		•••	4	6	"
	Turners a	and shun	ting en	ginen	nen	•••	•••	•••		•••	5	0	"
					Engin	ne-drive	rs.						
											8.	d.	
		(1st year	ır .			•••	•••				5	6	,,
	3rd class	{ 2nd ,,		• •	•••	•••	•••	•••		• • •	6 6 7	0	"
		(3rd "	•	••	•••	•••	•••			• • •	6	6	,,
	2nd "			••	•••	• • •		•••		•••	7	0	,,
	1st "	•••		••	•••	•••	•••	•••		•••	7	6	"
In the	locomoti	ve works	hons th	e mei	are p	aid as n	nder						
111 0110	1000111001	10 110111	dopo da		P			8.	d.		8.	d.	
	Fitters		•••				•••	4	0	to	6	9	,,
	Smiths		•••				•••	6	2	,,	6	6	"
	Boilersm	iths		•••	•••		•••			"	5	0	"

It has been the practice of the Great Western Company for some years to appoint youths in the grades of clerks and porters, and to promote them year by year, until they are old enough to be placed on the adult staff, after which their promotion is strictly according to merit.

Experience being an essential qualification in a candidate for any post, and especially for those of superior grades, it necessarily follows that no person, except under circumstances of an exceptional nature, can profitably be appointed to a responsible post who has not had previous railway training. Besides, for many reasons, each Company prefers to appoint to such post an officer or servant trained on its own

Porters, police, and lad porters must comply with the Company's requirements as to height, &c., described in the paper C sent herewith, and they must also fill up the paper, and also pass a medical examination, which is required for two reasons: first, because it is necessary that every precaution should be taken against introducing into the service persons of delicate constitution, and next, because every person of the grade of a servant is required to become a member of a Provident Society, and persons not in good health could not be admitted. A form of the medical certificate, which is required to be filled up by the medical officer of the Company by whom the candidate is examined, is sent herewith (marked D).

All officers and servants of the Company are bound to subscribe to certain rules and regulations of

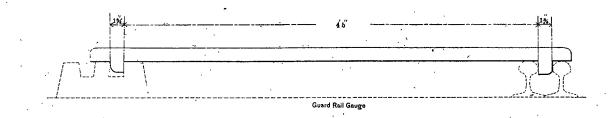
the service, a copy of which accompanies this memorandum (marked E).

The rules may be taken as containing the by-laws in force, and showing the relations between the Company and their servants, and will probably be found to be sufficiently clear on all points to which they relate without further explanation.

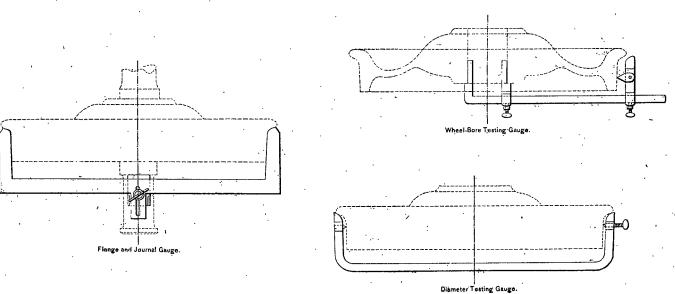
What are ordinarily termed "by-laws" are the regulations formed under the authority of Parliament for regulating the treffic upon the Company's premises

ment for regulating the traffic upon the Company's premises.

[Diagrams—A to L.]



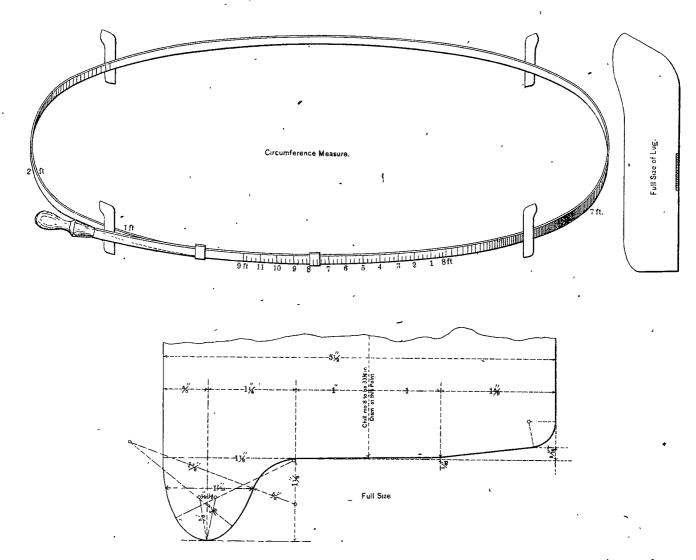




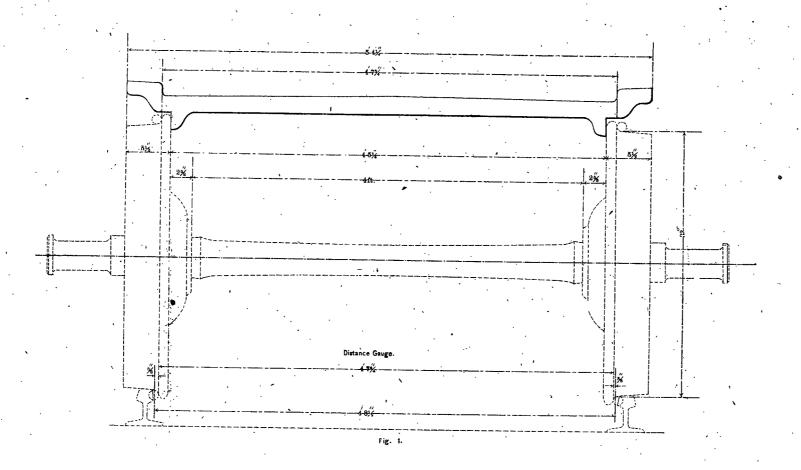
(Sig.37-)

PHOTO-LITHOGRAPHED AT THE GOVT. PRINTING OFFICE, SYDNEY, NEW BOUTH WALES.

ACCOMPANYING REPORT OF COMMITTEE OF THE MASTER CAR-BUILDERS' ASSOCIATION ON A STANDARD WHEEL GAUGE.



(Sig.37-)



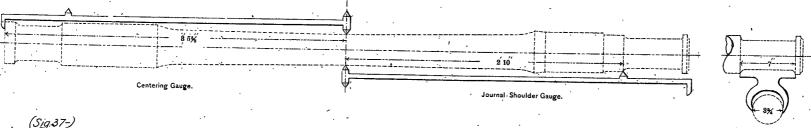


PHOTO-LITHOGRAPHED AT THE GOVT, PRINTING OFFICE, SYDNEY, NEW SOUTH WALES.

Journal Length and Diameter Gauge.

LEEDS - TRAMWAYS

WORTLEY BRANCH

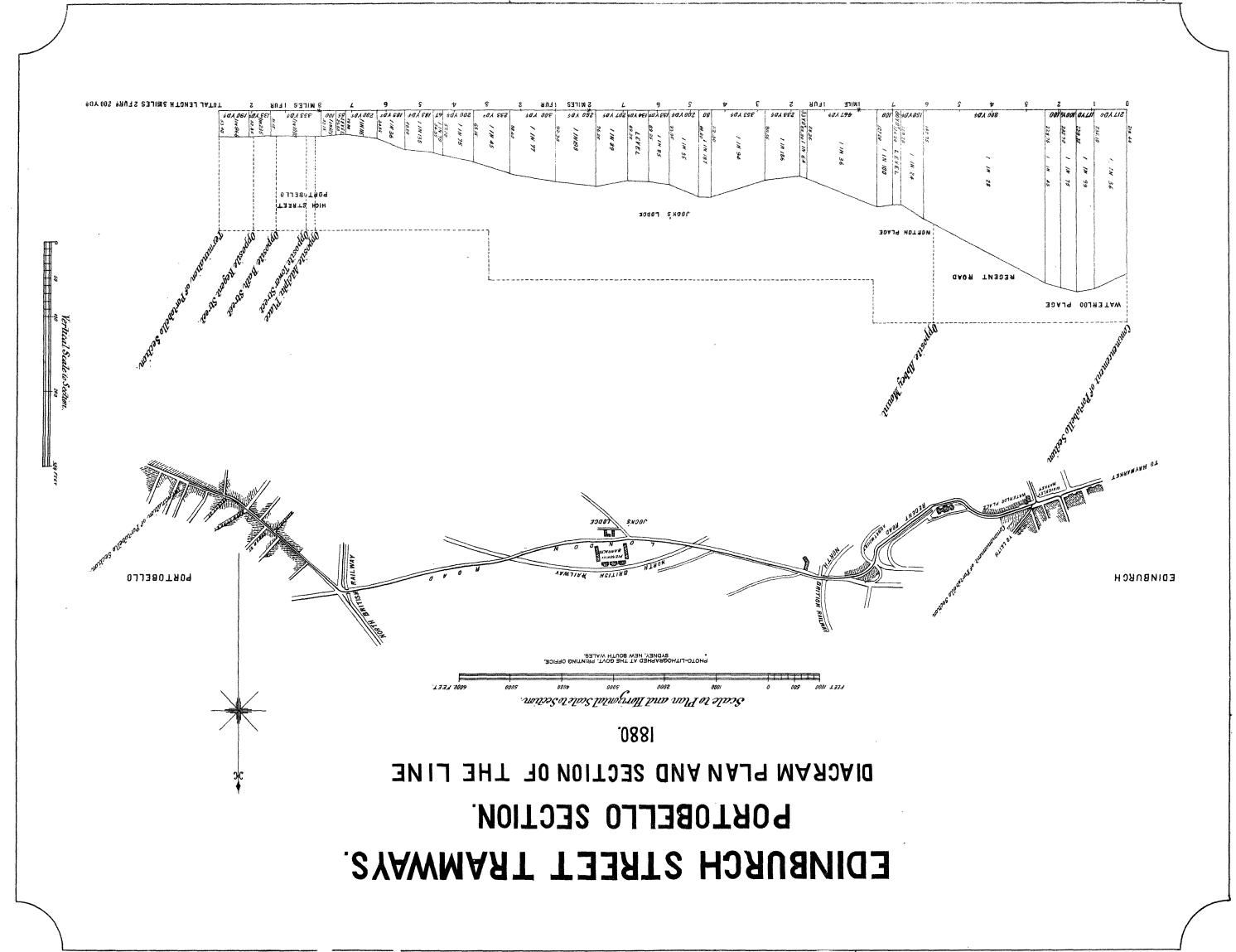
TONC ROAD SECTION

Vertical Scale

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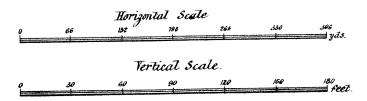
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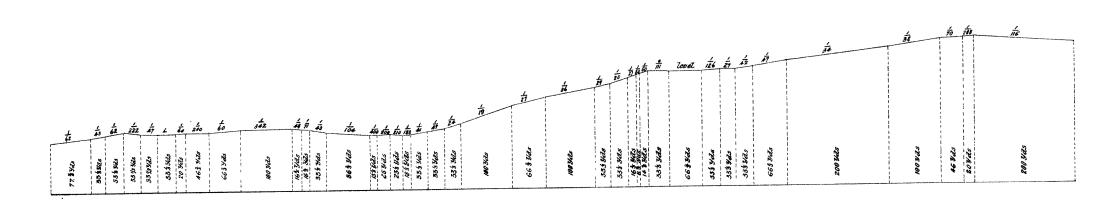
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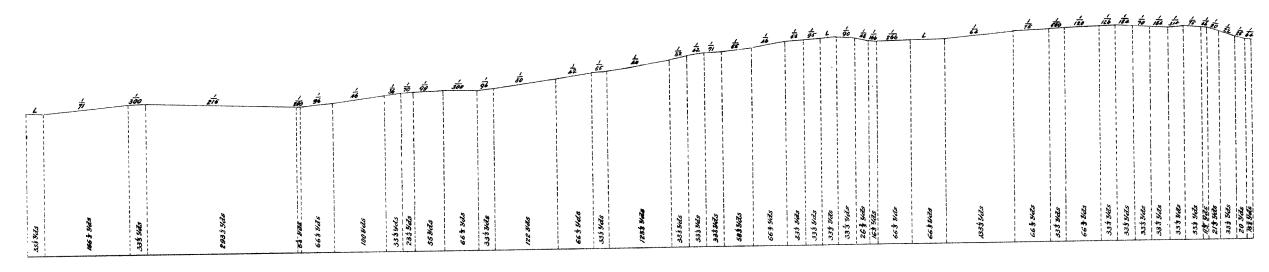


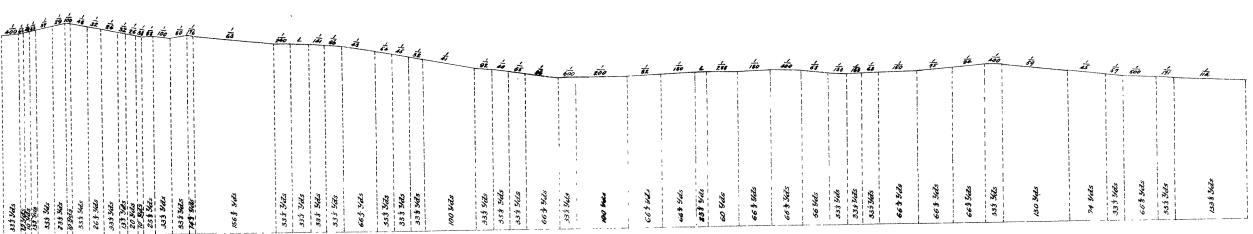
-----BURNLEY ----TRAMWAYS ----

BURNLEY-AND-NELSON-SECTION.







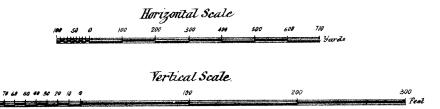


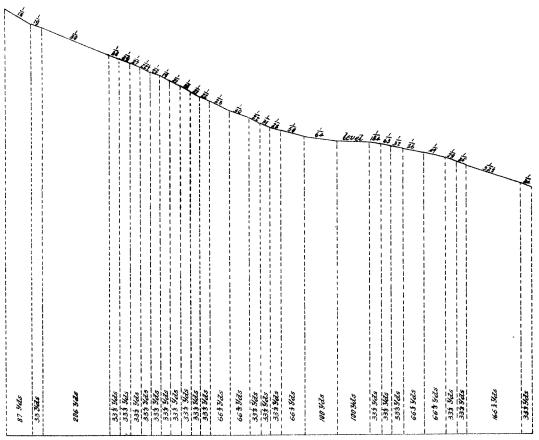
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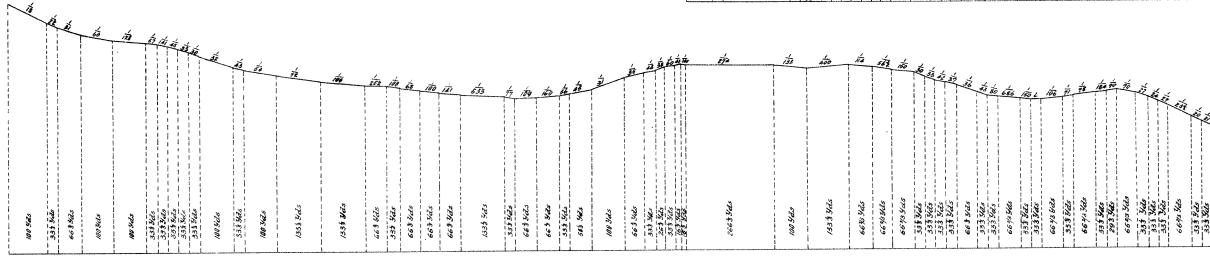
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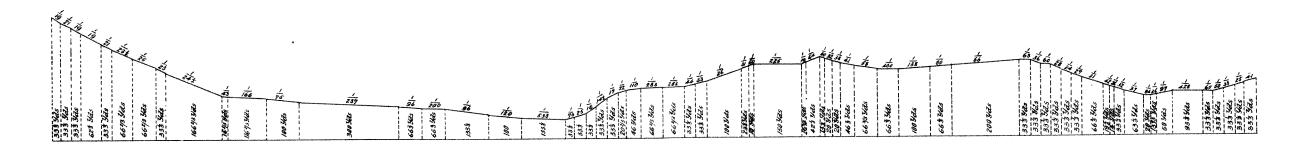
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DARWIN ----TRAMWAYS



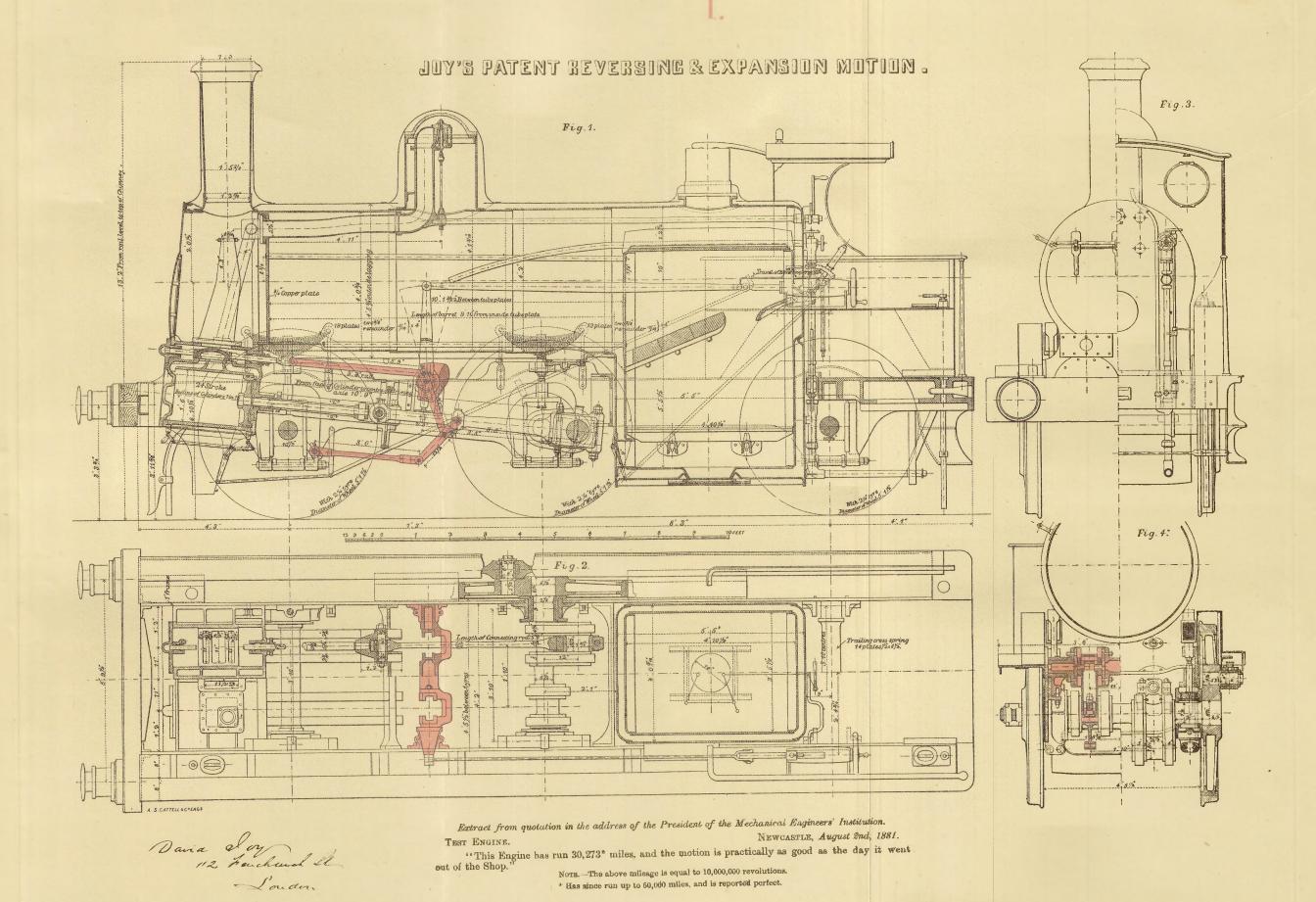






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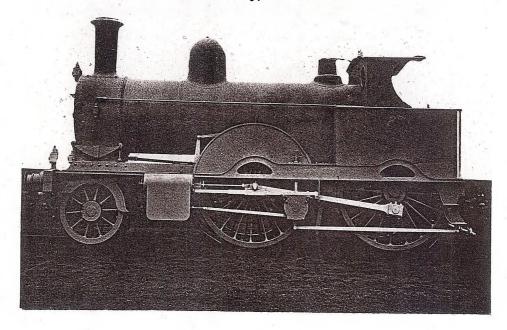
PHOTO-LITHOGRAPHED AT THE GOVT. PRINTING OFFICE. SYDNEY, NEW SOUTH WALES



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PHOTO-LITHOGRAPHED AT THE GOVT, PRINTING OFFICE, SYDNEY, NEW SOUTH WALES.

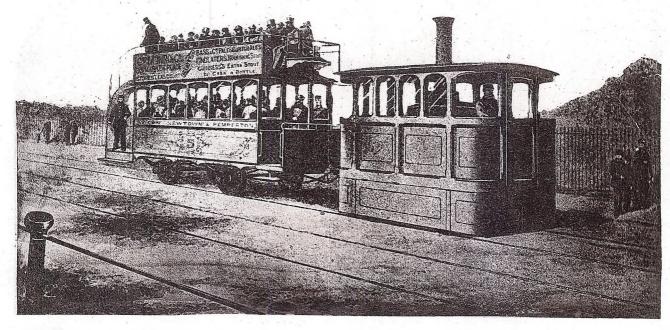
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1883-4

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

LIVE STOCK TRAFFIC BY RAILWAY.

(COMPLAINTS AS TO DELAYS, &c.)

Ordered by the Legislative Assembly to be printed, 15 January, 1884.

LAID upon the Table of the Legislative Assembly, by the Honorable the Secretary for Public Works,—

Copies of Minutes and Reports respecting complaints made as to irregularities and delays in the transit of Live Stock by Railway.

LIVE STOCK TRAFFIC BY RAILWAY.

No. 1.

Messrs. Pitt, Son, & Badgery to The Commissioner for Railways.

Sydney, 17 October, 1883. Sir, We have a lot of cattle, the property of Mr. Christian, which arrived at Blacktown this day from Nyngan, and the men in charge report seven head dead, and the whole lot much knocked about; they also complain much of the delays on the way, and the amount of shunting which went on. that stock coming so far should have quicker transit, and unless some improvement is made in the live stock traffic when the line is open to Bourke we shall not be able to use the line then.

We have, &c. PITT, SON, & BADGERY.

Inspector Hornidge to look into this and report as early as possible. To save time, send paper to Mr. Higgs, who will add his report and forward to me complete.—W. V. Read, per F.T., 19/10/83.

Report of Inspector Hornidge, Bathurst District.

CHRISTIAN'S cattle left Nyngan on No. 40 (twenty trucks) and No. 46 (thirteen trucks) at 10 a.m. and 1.30 p.m.

respectively.

No. 40 could not take so many trucks through, part were put on to No. 58 up, at Narramine. No. 40 ran through to time, at least it left Bathurst to time. No. 58 reached Bathurst to time, but the special to run in connection with it did not leave Bathurst until 6·10 a.m., causing a delay of one hour forty-five minutes; the engine did not arrive from Eskbank until 5·15 a.m. No. 46 ran in two divisions from Dubbo—Christian's being on the second; both kept good time, and left Bathurst at 8 and 8·10 a.m.

Bathurst at 8 and 8·10 a.m.

As regards the cattle being down, two only were down in the last train so far as I know (see Guard Ogden's report attached). As to shunting, No. 40 left Nyngan with twenty of cattle, a carriage truck, and five tank trucks; attached one truck at Mullengudgérý and one at Nevertire—they went on in front, and would cause no shunting to the cattle. At Narramine eight of cattle, the tanks, and the two intermediates were shunted on to No. 58.

No. 40 did not shunt between Dubbo and Bathurst.

No. 58 did not shunt between Narramine and Bathurst.

No. 46 left Nyngan with fourteen of cattle, twenty-four empties, and van; at Nevertire, detached empties and attached nineteen of cattle; at Narramine, detached twelve of cattle, which left at once as a first division of No. 46. There was no shunting between Narramine and Bathurst, except that engines and vans are changed at Dubbo.

M. A. HORNIDGE.

22/10/83.

Traffic Inspector's Office, Traffic Manager's Department, Bathurst, 22/10/83. Extract from Guard's sheet of No. 2 division of No. 46 up train, Dubbo to Orange, date 15/10/1883. W. Ogden, guard.

One bullock down in C.W. 164 on arrival of train at Dubbo, and one bullock down in C.W. 115 on arrival of train at Wellington. I was unable to get them up. There was a man travelling with the cattle; he gave me no assistance, although I told him at Wellington.

Report of Inspector Higgs, Penrith District.

The cattle left Bathurst by Nos. 40, 46, and two special trains; all these trains had full loads on for through, and had to shunt trucks on at Mount Victoria and off at Katoomba; no other shunting was done except into sidings to cross trains, and at the Zigzags. Two bullocks were reported to me as being down at Bathurst, and guard Barking reported five head being down when he attached his train at Mount Victoria. The bullocks, some of them at least, laid down and would not attempt to rise; a portion of them did not leave Bathurst until 6 and 8 a.m., and then were a very long time on the road, owing to engine of No. 16 up leaving road at Numantia. The principal lot that were down (five) were in No. 44 up, and had to stand a good many hours at Mount Victoria, as the engines that had to bring them were so late on the down journey, consequently none of the trucks left Penrith until after dark on the 16th, when, I presume, they would not be unloaded until daylight on the 17th, so that fatigue alone would make them lie down. Had it not been for the accident at Numantia blocking the line for many hours, all this stock would have left Penrith by Nos. 40 and 44 up. Reports about the cattle being down in the trucks forwarded to Goods Superintendent at the time.

Report of Traffic Manager.

I REPORTED on these cattle in the minute I sent to the Commissioner this morning.

The animals were from Queensland, and they were driven hard all the Saturday and Sunday, and put into the trucks on the Monday morning without getting a rest after their journey.

That was not a wise thing to do, seeing that they had a railway journey of 369 miles before them; but it was the wish of the sender's agents, and of course our officials could not interfere.

That the animals were exhausted, however, there can be no doubt. Some of them were down in the trucks when they arrived at Orange, and the train was delayed there while they were taken out and re-loaded again; indeed, one or two of them were down by the time the train arrived at Dubbo; and although the guard drew the attention of the drover, who was accompanying them, and tried himself to get them up, the drover gave him no assistance.

There was really no shunting in transit; and as the waggons were fitted with screw couplings, there could be very, very little ierking.

very little jerking.

Of course there was the delay at Orange which I have mentioned, and there was another of several hours on the mountains, in consequence of an engine being off the road at Numantia, but that was unavoidable.

But for these occasional unavoidable delays, we cannot possibly give better despatch than we are giving.

W. V. READ,

Per D.K. 26/10/83.

No. 2.

Report of Traffic Manager.

As several comments have appeared in the public Press recently reflecting upon the railway management in respect of the conveyance of live stock traffic, I think it is only fair to the Department and to myself, as the head of the branch responsible for its safe conduct, that a similar publicity should be given to the real facts of the case.

According to the *Herald* of the 19th instant, Mr. Griffiths is reported to have said, from his seat in Parliament the previous evening, that on that day (Thursday) out of one consignment of sheep that had arrived at Homebush seventy-one were dead, and that out of a truck of cattle ten were dead; and, he added, that it had become the practice to attach to the cattle trucks three or four heavy wood or coal waggons, which knocked the stock trucks about in such a way that the sheep and cattle were bruised and killed in large numbers.

In a sub-leader in the *Herald* of the 20th instant, and in the letters which have appeared in the Press from time to time, it is quietly assumed that the Department is entirely responsible for these deaths, and that the safe conveyance of the stock is regarded by the railway officials as subordinate to economy in working.

I need hardly say that this is altogether an erroneous view to take, and I have no hesitation in stating that, if the owners of stock were in many cases more eager for its safe conveyance and good appearance in the market, and displayed less desire to keep down to the lowest ebb the expense of conveyance, the number of deaths at the end of the journey would be reduced to a minimum. All owners of stock know that our sheep vans will convey 100 ordinary-sized sheep without overcrowding (if the sheep are very large the number should be correspondingly reduced), and cattle trucks from eight to ten bullocks, according to size; but the animals vary so much in size that it has never been considered advisable to lay down an arbitrary rule as to what number shall constitute a full truck load; and our practice in this respect, I may add, is identical with that of the English railways. As the rates are very low, it has been believed that the interest of the owners to present their stock for sale in the best condition would be sufficient safeguard against their overcrowding the trucks and running the risk of losing a number of animals, and, happily, many owners do take this view, while others appear to be content to risk a number of deaths so long as they can save the cost of an additional truck.

Now, with respect to the consignment of sheep to which reference was made by Mr. Griffiths, I find that thirteen vans were supplied for their conveyance, but only eleven were used by the senders, and it was not until the loading was completed that the Department was informed the consignment consisted of 1,387, so that each van carried an average of 126 sheep!

The excessive mortality in transit, viz., 83 out of a total of 1,387, was, I have no hesitation in saying, entirely due to the overcrowded state of the trucks, which, it will be seen, would, to a very large extent, have been avoided had the senders used all the vans placed at their disposal by the Department. Knowing that the sheep had to travel a distance of 412 miles, I can only regard the overcrowding of the trucks as an act of positive cruelty on the part of the senders. In proof of this I may mention that, on the same day that these sheep arrived at Homebush, there was another consignment of 1,500 sheep, which had travelled 284 miles, but in that case the owners had consideration for the animals and only put ninety-four in each truck, so that when they arrived at Homebush there were only two dead. A third consignment travelled 270 miles, but in that case, too, the average number was only ninety-four per van, and, as a consequence, only one died.

Sheep and cattle, too, are not unfrequently put in trucks after having travelled a long distance, and, being footsore, it often happens that they (particularly sheep) lie down before the train is long under way, so that if the truck happens to be overcrowded they are unable to get up again; the remedy, however, for this is simple, and it rests with the owners.

The cattle to which Mr. Griffiths made reference were not overloaded, but they were trucked at Nyngan on Monday, 15th instant, and, I have ascertained that, in order to accomplish this, they were driven hard all the previous Saturday and Sunday, and were put into the trucks by the senders or their agents without first having the benefit of a rest. Whether it was wise to do so, in the face of a railway journey of 369 miles, is for the owners and not for me to say, but clearly it was not a case in which the railway officials could interfere; and there cannot be the slightest doubt that the deaths in transit were entirely due to the exhausted condition of the animals and their need of rest. Out of this consignment, which consisted of 289 head of cattle, seven (not ten as stated) were dead, but the train, I may add, was delayed a considerable time at Orange in order that those animals which had fallen down before it reached that point might be taken out and reloaded. At that time they had only completed half the journey, and this, I think, strengthens the statement put before me, that they were exhausted before being loaded.

To provide as much as possible for the safe conveyance of stock the Department has provided waggons equal to any in the world; and as it has frequently been asserted that animals are thrown off their legs by the jerking of trains in consequence of defective couplings, I may take the opportunity of mentioning that, out of 507 cattle waggons and sheep vans that are running on the southern and western lines, there are not more than twenty that have not yet been fitted with screw couplings—the same as passenger carriages—so that jerking is reduced to a minimum.

Goods trucks are never put on live stock trains, unless when the latter are not fully loaded, in which case it would simply be a waste of engine power to leave goods behind; but when the train is a mixed one live stock trucks are always placed at the rear, next the guard's van, and are consequently not subjected to any of the shunting that has to be performed at the intermediate stations.

For every consignment of three trucks of stock and upwards that is conveyed a greater distance than 60 miles a free pass is issued to a drover to accompany and take charge of it; and if the consignment should be so large as to be placed on more than one train, a pass is issued for a drover to accompany each train, so that he can attend to the stock in transit and raise any animals that may get down; but it too frequently happens that these drovers disregard all responsibility after the animals are in the trucks. As a proof of this I may mention that on one occasion, when passing a country station, I saw a sheep train standing there, and although it was not more than 20 miles away from its starting-point a number of the animals had got down, while the drover, instead of bestowing any attention to them, was ensconced in the guard's van, and it was only after I had instructed the guard to request the drover's immediate attention to these sheep, or to take the pass from him, that he did attend to them.

It has been asserted that guards in charge of trains should be held personally responsible for the safe conveyance of the stock. As a general rule it is the guard's duty to see to this, but he has many other duties

duties to perform requiring constant vigilance, and it was in order that the comfort of the stock might not lack that attention which it is not always in the power of the guard to give that the practice of issuing free passes to drovers was introduced.

The drover has nothing else to occupy his attention, and it is within his power to give attention to rge at every station at which the train stops.

W. V. READ, his charge at every station at which the train stops.

25/10/83.

No. 3.

Report of Traffic Manager.

With reference to my report of the 25th instant, respecting the large number of deaths (eighty-three) in a consignment of 1,387 sheep that arrived at Homebush on Thursday, the 18th instant, I have since ascertained that the live sheep realized from 7s. 8d. to 7s. 9d., and the dead ones 4s. each.

Taking the maximum price, it follows that the owners lost 3s. 9d. per head on eighty-three sheep-

The consignment was large enough, however, to have occupied fourteen trucks, and as the owners of the sheep only used eleven, they effected a saving of £24 1s. 9d. by their action. From that sum must be deducted the £15 11s. 3d. alluded to, and we find that by crowding the sheep as they did, and notwith-standing the excessive number of deaths, the owners actually saved £8 10s. 6d. upon their consignment.

It is not taking a complimentary view of the owners' conduct to assume that they knowingly overcrowded the sheep and risked the consequences, but I am afraid it is the only explainable one.

W. V. READ,

Per D.K., 27/10/83.

No. 4.

M.P., 83/24,162.

Minute of Commissioner.

In reference to the letter in to-day's paper respecting the supply of live stock trucks, I wish to have a return showing the dates upon which trucks have been ordered to be at the various trucking stations, and the dates upon which they have been there, that is, to show in how many instances delays have taken place. Make it up for two months. CHAS. A. G.

11/12/83.

[Enclosure.]

Extract from the Sydney Morning Herald, Tuesday, 11th December, 1883.

STOCK.TRUCKING ON THE SOUTHERN LINE.

To the Editor of the Herald.

Str.—Great dissatisfaction, disappointment, and annoyance exist amongst stockowners here against the Railway Department in the trucking of fat stock to Homebush. Either there is gross mismanagement or incompetency in the working of this branch of the traffic, for it is without doubt irregularly conducted, and assuredly to the detriment of the consignors.

The officials either cannot grasp the business or it is the want of rolling stock. If the latter, it ought to be at once remedied; for if they extend their Ilines as they are doing, they should exercise the forethought that any business firm would by seeing that their rolling stock is equal to any demand that may be made upon it. Trucks sent from here with fat stock just as often miss the market as catch it; the consequence is that stock are in many instances five days without food, thus entailing a loss to the sender of at least 1s. to 1s. 6d. per head on sheep and a like proportion on cattle, besides being a monstrous cruelty to the dumb animals. This is a serious charge against our humanity, for which there is no excuse.

We ordered, sixteen days ago, trucks to be sent here on 7th instant, and the sheep were sent to the trucking yards in anticipation of their arrival. Judge our surprise when we received from the Junee traffic inspector a peremptory intimation that he could not tell us when we could get them. There is neither, grass nor water available within several miles of the yards, and, as a consequence, the sheep had to remain there awaiting the mandate of this important functionary. This morning we were apprised by him that trucks would reach us to-day; the sheep will then have been thirty-six hours in the yard, with the thermometer at 96° in the shade, without food or water. This is not business—it is playing at it, and stockowners suffer seriously through such manifest blundering.

Last week we sent sheep by special train, with the full assurance that they would catch the market has

Letters have been written by the score on this question, pointing out the evils, but without avail. The Department simply folds its hands, and tells you, with a chilling politeness, that it cannot be helped.

Is there no one in the House who has the moral courage to beard those sleeping officials and make a searching inquiry into this branch of the Department, which is a blot on our railway system, so that consignors shall receive attention, their stock reach the market in due time, and have some security against blunders?

Pomingalarna, Wagga Wagga, December 8.

We are, &c., MACKAY & COPLAND.

No. 5.

The Chief Clerk to The Traffic Manager.

M.P., 83/24,586.

Number of sheep and cattle waggons.

WILL Traffic Manager please furnish a return of live stock waggons in use and under repair, where they

are, and on what lines running; give mileage run.

Representations are made to Commissioner that we have not a sufficient supply to carry on the traffic. Some time ago you furnished a return in answer to Commissioner's inquiry (please quote minute No. and date of this return). The Commissioner wishes you to keep him posted up in this matter, so that nothing can be wanting to enable us to successfully cope with senders' requirements.

G.B.

Urgent.

B.C., 15/12/83.

No. 6.

Report of Traffic Manager.

WITH reference to Commissioner's 83/24,586 and 83/24,162, both enclosed, I enclose the return showing the number of live stock waggons ordered and supplied at the various trucking stations during the last two months; also a monthly statement of live stock traffic received at Homebush for the years 1881, 1882, and 1883.

There are 250 sheep vans and 270 cattle waggons on hand, and on an average 10 per cent. of these They are kept continuously running on both lines, and although the mileage has not are non-effective. been made up to date, and I am not therefore in a position to say exactly what it is, I am certain the great mileage of last year, as compared with former years, will be fully maintained. The figures are:—

Year.	Average mileage.	Average mileage.						
rear.	Per Sheep Van.	Per Cattle Waggon						
1879	20.302	12,360 ,, 11,002 ,,						

I cannot at this moment lay hands on the previous report, or quote the number and date, but as far as I recollect it was about a year ago.

The delays in supplying cattle waggons have been very few; they have been quite exceptional, and

due entirely to irregularities in the train service. The supply of waggons has been abundant.

As regards sheep the delays have been more frequent, but they have rarely exceeded one day. With the exception of one week (ending 8th December), during which there was an unusual number of vans ordered to far-distant stations, we have been able to meet all demands within the week, although we have occasionally been a day late, and the reports in the Press will show that the markets have been kept fully supplied, and there has been no lack of live stock in Sydney to meet all demands. Owing to the drought and want of fodder in the interior a very large number of sheep have been sent to Sydney after shearing. The average number received at Homebush during this year has been 95,000 per month, but in one month only 53,000 were received, while in November last the number was 113,000. This does not include sheep forwarded to Riverstone, Orange, Wellington, Nyngan, &c.; and it is worthy of note that, taking all stations, the increase for the last three months only has been 106,000 sheep as compared with last year.

Were the traffic likely to keep up to the November standard, when the demand was fully double what it had been in some other months, it would be necessary to supplement our stock of sheep vans, and so be able to work forward the empties in good time by ordinary trains, instead of by specials, as I have been compelled to do for the last few weeks in order to keep abreast of the demand; but the November traffic is quite exceptional, and it is more than probable the number of sheep in transit will not be so great for the

next twelve months.

I should mention, too, as a cause of delay, that the owner is not unfrequently late in bringing his sheep up to the trucking station; sometimes a whole day is lost in this way, and waggons are thus occupied with stock in up transit at a time at which I had calculated they would have been empty, and on their way down for another consignment. Delays have occurred in this way which have disarranged our plans for a Then, again, when up-trains get a bad start, or are delayed attending to stock in transit, they block those with empty waggons on the down journey, which in turn throws a subsequent up-train late. There is a great deal to contend with, but if a comparison be made it will be found there is not another railway in the world having the stretch of single line that we have in New South Wales where the running is better, or even so good, as it is here.

As regards delays, deaths, and alleged injuries sustained in transit, these have been fully dealt with in previous reports; particularly I would refer to those of 25th and 26th October and 11th instant.

The delay, as I have already stated in previous reports, is distinctly traceable to causes outside the Traffic Department altogether. Time is lost at the trucking stations, and attending to exhausted animals in transit; also by failure of locomotives. Either of these is sufficient to put the train out of its running, and in some cases all three causes have operated on one consignment.

I have already stated that the mortality in transit is due to the exhausted state of the stock when trucked, the excessive number loaded into each waggon, and the cruelty practised by the drovers. In proof of this I sent you a letter from Mr. Gee, who makes a point of giving the animals plenty room, and I now

enclose extracts from various reports made to me on the subject.

No exertions will be spared in order to expedite the traffic and to keep pace with the demands; at the same time I feel bound to say that live stock traffic has, during all the time of these complaints, been worked with as great regularity as ever it was, and I am very much inclined to express an opinion that the recent attack made upon the Department is not so much in the interest of the animals as to draw public attention away from the true cause of the deaths in transit. W.V.R., 18/12/83.

[Enclosures to Traffic Manager's Report.]

The Manager, Sydney Meat-preserving Company (Limited) Works to The Traffic Manager.

Dear Sir, Sydney Meat-preserving Company (Limited) Works, Rookwood, 30 November, 1883.

I have to thank you for your letter of the 27th instant, re my complaint in delivering sheep in the early part of this month, and to express my thanks for the trouble you have taken in investigating the cause.

Since then I have had large consignments, and am glad to say they have come through both with expedition and safety; in fact, in the whole of my consignments I have only had three sheep killed in transit.

I attribute this favourable result to not crowding the trucks, 105 being my maximum.

The large number of deaths which have occurred on the railway is, in my opinion, entirely caused by overcrowding.

Yours truly,

ALLAN GEE,

Manager. The Manager, Sydney Meat-preserving Company (Limited) Works to The Traffic Manager.

Manager. 280

^{*} The number received at Homebush for last two weeks were—December 8th, 30,615; December 15th, 34,188; total, 64,803;—being the largest number ever carried to Sydney in so short a space of time.

280 Sheep, Narrandera to Homebush, for Wilkinson, Graves, and Lavender, 27 November.

Coaching Superintendent's Minute, 4th December, 1883.

I saw this consignment passing through, and in the small consignment, two trucks, in which there were 280 animals, fifteen were dead, and in the large consignment, which was properly loaded, none were dead.

I think the Department should get the Inspector of Cruelty to Animals to prosecute owners in such cases as this.

Station-master's (Orange) Minute, 2 October, 1883.

I have the honor to report on Saturday, the 29th ultimo, No. 10 up arrived with stock, no less than eight being down in three trucks. I accompanied the train to the yard, unloaded and reloaded the bullocks, less one which was dead. This was left behind, and I managed to sell it to Mr. M Clymont for £1 10s.

I attribute the large number down to the overcrowding in the trucks.

Station-master's (Orange) Minute, 3 October, 1883.

I have the honor to report this day up special arrived with several bullocks down, one being dead, was removed and remainder reloaded. I sold the dead one for £1 10s. to Mr. M'Clymont. They were consigned to Pitt, Son, & Badgery,

Station-master's (Orange) Minute, 10 October, 1883.

I have the honor to report up-special arrived here this morning with cattle down in three different trucks.

Cattle waggon 49. Two down, unloaded; got those that were down up and reloaded into same truck.

Cattle waggon 24. One down, very much trampled, got it out, and after short time managed to get it up, but unfit for travelling. The local agent (Mr. Leeds) took charge of it, and as soon as able to walk will remove to his paddock.

Cattle waggon 40. Two down, one of which was dead and terribly trampled. The man in charge informed me the beast was down at Nevertire. It was disposed of for 30s. Cheque for same will be forwarded upon receipt thereof. The cattle were from Douglas, Nyngan, to Griffiths and Weaver, of Homebush.

Extract from Station-master's (Nevertire) Minute, 11 December, 1883.

A mos of 317 cattle, belonging to Mr. Tyson, of Queensland, arrived here on Friday afternoon about 3 p.m. for the purpose of being trucked for Messrs. Sullivan and Son, Homebush. The cattle were driven very fast from Warren (situated about 12 miles from here), and when they arrived here they were thoroughly knocked up and heated, having no water on the road. Eight trucks were loaded and despatched by No. 48 up-goods, which left at 10 30 p.m.; seven cattle were still remaining in the yards, and which I am informed could not be got in the trucks, on account of the furious state they were in after being driven so fast. The cattle could not be sent away on Saturday, and consequently could not be trucked before Monday the 10th instant. Mr. New, however, left the cattle standing in the yard till that time without a mouthful of food to eat or water to drink.

1,387 sheep in eleven sheep vans were sent from Carrathool to Rudd Bros., in October last, and in this lot 83 were out dead. The load equalled 126 sheep per waggon, instead of 100.

Woods, Ferguson, & Co's. cattle, Nevertire to Homebush, 17 September.

Station-master's (Nevertire) report, 22 September.

This was a consignment of 110 cattle which were loaded in twelve trucks, Woods, Ferguson, & Co., to Pitt, Son, & Badgery, despatched from Nevertire to Homebush by up-special train at 11 a.m. on 17th September. One cow died in truck when calving as the train was leaving; the rest appeared to be in very good condition. Contract-book was signed for same by A. Spilsbury, the person in charge of stock.

Tyson's cattle, Nevertire to Homebush, 16 November, 1883.

Inspector Hornidge's Minute of 16 November, 1883.

THIRTY-FOUR trucks of Tyson's cattle for Sullivan were loaded at Nevertire to-day. Arrangements were made to run these through by the No. 78 special, but only sixteen trucks were ready by starting-time; the rest were despatched by Nos. 46 and 48 goods. The cattle will be longer on the road than they would otherwise have been, for which we are not to blame.

RETURN of Live Stock Waggons ordered and supplied for two months ending 15th December, 1883.

Date of (order.	Number of Cattle Waggons.	Number of Sheep Waggons.	Wanted at.	Date	wanted.	Dat	e supplie
3 Oct.			28	Narrandera			172	
$^2 \;\;, \ ^1 \;\;$		$\frac{1}{2}$	2	Albury Wellington		,,	125	,,
i "	•••••	20	'	Nevertire	ווב	• •	7.5	,,
9 ′′		33		Nyngan		,, ,,	7	"
2 ′′		90	14	Narrandera	10	,, ······	16	"
4 ′′		•••••	15	Carrathool	10	,,	10	,,
n ′′			12	Benerembah		,,	17	"
) ,,			14	Old Junee	7.0	,,	17	,,
5 ,,		25		Dubbo	16	,,	17	,,
i "			3	Harden	17	,,	17	,,
5 ,,			2	Hay	17	,,	17	,,
1 ,,			22	Carrathool		,,		,,
9 ,,			32	,,		,,	20	1)
1 ,,			14	Darlington	19	,,		,,
5,,		40		Nyngan		,,		,,
0,,		36				,,	19	,,
6,,		2		Picton		,,		,,
6,,			14	Groongal		,,	21	"
6,,		20		Carrathool		,,	19	"
9,,		. 3		Narrandera	19	,,	19	,,

RETURN of Live Stock Waggons, &c.—continued.

Date of Order	Number of Cattle Waggons	Number of Sheep Waggons	Wanted at	Date wanted	Date supplied
10 Oct		60	Nyngan .	19 Oct	19 & 20 Oct.
12 ,, 20 ,,	4	20	Nairandera -	20 ,,	20 Oct
20 ,, 18 ,,	5		Harden	20 ,,	20 ,,
1 ,,	22		Wellington	20 ,,	20 ,,
l1 ,, l9 ,,	24 5		Orange . Wellington	$\begin{bmatrix} 20 & ,, \\ 20 & ,, \end{bmatrix}$	19 ,, 24 .,
6 ,,		20	Hay	20 ,,	23 ,,
t o ,,		35	Wagga Wagga	22 ,,	23 & 24 Oct.
l8 " l1 "	28	6	Nariandera Nyngan	$\begin{bmatrix} 22 & ,, \\ 22 & ,, \end{bmatrix}$	23 Oct
18 ,,	20	38	Never tire	$\begin{bmatrix} 22 & ,, \\ 22 & ,, \end{bmatrix}$	25 ,,
9 ,,		25	Hay	23 ,,	24,
l0 ,, l2 ,,		23	Nariandera Kooroongal	23 ,, 23 ,,	23 ,,
lz ,,		20	Narrandera	23 ,,	26 ,,
l2 ,,		3	Albury	23 ,,	23 ,,
9 ,, 17 ,,	İ	23 60	Nyngan	$\begin{bmatrix} 23 & ,, \\ 23 & ., \end{bmatrix}$	23 ,, 24, 25, 26 Oct.
23 ,,	4	00	Orange	23 ,,	23 Oct
4 ,,		14	Narrandela	24 ,,	27 ,,
18 ,, 19 ,,	10		Harden	$\begin{vmatrix} 24 & ,, \\ 24 & ., \end{vmatrix}$	$\begin{vmatrix} 24 & ,, \\ 24 & ., \end{vmatrix}$
19 ,,	12		Wellington	. 24 ,,	23 ,,
4 ,,		28	Nai randera	25 ,,	27 ,,
6 ,,	1	17	,,	$\begin{bmatrix} 26 & ,, \\ 26 & \end{bmatrix}$	$\begin{bmatrix} 27 & ,, \\ 27 & ., \end{bmatrix}$
11 ,, 17 ,,		$\frac{23}{24}$	Wagga Wagga	26 ,,	28 ,,
23 ,,	11		Bomen	26 ,,	27 ,,
16 ,,		28	Dailington	$\begin{vmatrix} 27 & ,, \\ 27 & \end{vmatrix}$	28 ,, - 27 ,,
26 ,, 16 ,,	4	6	Harden Narrandera	$\begin{bmatrix} 27 & ,, \\ 29 & ,, \end{bmatrix}$	30 ,,
22 ,,		15	Culcaiin	29 ,,	30 ,,
24,,	10	8	,,,	29 ,,	30 ,,
25 ,, 26 ,,	10	$\begin{vmatrix} 1 \\ 3 \end{vmatrix}$	Bomen Kooroongal	29 ,, 29 ,,	29 ,,
26 ,,	2		Hay	29 ,,	29 & 31 Oct.
24 ,,		70	Nyngan	29 ,, }	29 Oct
OE	40		Dubbo	90 " (2 & 3 Nov. 30 Oct.
26 ,,	1		Nyngan	29 ,,	29 ,,
22 ,,	40		Wagga Wagga	30 ,,	30 ,,
18 ,, 18 ,,		5 4	Wagga Wagga Canathool	30 ,,	30 ,,
22 ,,		4	Hay	30 ,,	30 Oct
24,,		5	Coolaman	30 ,,	30 ,,
26 ,, 29 ,,	8	1	Harden Wellington	30 ,, 31 .,	31 ,,
29 ,, 29 ,,		7	Dubbo	31 ,,	30 ,,
20 ,,		28	Darlington .	1 Nov	l Nov.
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	10	15	Culcann Wagga Wagga		1 ,,
4 ,,	10	14	Namandera	2 ,,	2 ,,
25 ,,		$\frac{6}{2}$	Canathool	2 ,,	$\begin{bmatrix} 2 & ,, \\ 2 & ,, \end{bmatrix}$
26 ,, 27 ,,		7	Carramoor	$\begin{vmatrix} \frac{2}{2} & \cdots & \\ \frac{2}{2} & \cdots & \frac{2}{3} \end{vmatrix}$	2 ,,
27 ,,		10	Cootamundia	3 ,,	3 ,,
31 ,,	8	05	Wellington	3 ,,	6 ,,
20 ,, 22 ,,		25 15	Hay Culcann	5 ,,	5 ,,
27 ,,		11	Nairandera	5 ,,	5 ,,
28 ,, 2 4 ,,		$\begin{array}{c} 5 \\ 28 \end{array}$	Hay	5 ,, 5 ,,	6 ,,
24 ,, 24 ,,		17	Nyngan Orange	5 ,,	7 ,,
29 ,,	1	2	Carrathool	6 ,,	6 ,,
29 ,, 29 ,,		14 20	,,	6 ,,	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
29 ,, 31 ,,	4	20	Wagga Wagga	6 ,,	6 ,,
27 ,,	0.5	2	Narrandera	6 ,,	6 ,,
30 ,, 1 Nov	25 35	Ì	Nevertne Nevertne	6 ,,	5 ,,
27 Oct	20		Dubbo	7 ,,	6 ,,
31 ,,	5		Wellington	7 ,,	7 ,,
9 ,, 2 Nov		$\frac{28}{2}$	Kooroongal Harden	7 ,,	7 ,, Did not turn up
5 ,,		3	Albury	8 ,,	11 & 13 Nov.
27 Oct		30	Dubbo	8 ,,	9 Nov.
2 Nov 24 Oct		18	Wellington Blayney	8 ,,	8 ,,
24 Oct 23 ,,		28	Nairandeia	9 ,,	10 ,,
27 ,,		4	,,	9 ,,	9 ,,
30 ,, 1 Nov.	10	5	Hay Wagga Wagga	9 ,,	9 ,,
23 Oct.		21	Wagga Wagga Nairandeia	10 ,,	11 ,,
20 ,,		25	Albury	10 ,,	10 ,,
18 ,,		$\frac{25}{2}$	Wagga Wagga	$\begin{vmatrix} 12 & ,, \\ 12 & \end{vmatrix}$	12 ,, 12 ,,
1 Nov 5 ,,		3	Carrathool Kooroongal	12 ,,	14 ,,
6	1	1-	Bomen	12 ,,	12 ,,

Return of Live Stock Waggons, &c — continued.

ate of Order	Number of Cattle Waggons	Number of Sheep Waggons	Wanted at.	Date wanted	Date supplied
Nov.		1	Carrathool	12 Nov.	12 Nov.
3 ,,		34	Wagga Wagga	12 ,,	12 ,,
3 ,,		3	Darlington	12 ,,	12 ,,
,,		2	Canathool	12 ,,	13 ,,
,,		4	,,	12 ,,	13 ,,
,,		8 1	Albury	12 ,,	13 ,,
. "		$\frac{1}{2}$	Nariandeia	$\begin{vmatrix} 12 & ,, \\ 12 & ., \end{vmatrix}$	13 ,, 13 ,,
Oct.		3		13 ,,	13 ,,
٠,,		24	Hay"	13 ,,	14 ,,
Nov.		7	Darlington	13 ,,	14 ,,
,,		2	Narrandera	13 ,,	14 & 15 No
,,		14	G ", 1	13 ,,	14 Nov.
,, ,, ,,		$egin{bmatrix} 1 \\ 2 \end{bmatrix}$	Canathool	13 ,,	14 ,,
,,		13	Culcarn	19 "	14 ,, 11 .,
		28	Narrandera	119 "	114 "
,,		7	Cootamundra	13 ,,	13 ,,
,,	4		Bomen	13 ,,	13 ,,
,,	4	Į	Cootamundia	13 ,,	13 ,,
,,,	2	90	Albury	13 ,,	13 ,,
Oct.		28	Kooloongal	14 ,,	16 ,,
Nov.		15 5	Narrandera Hay	15 ,, 15 ,,	16 ,, 16 ,,
,, .	_	16	Hay	1 1 5 ''	16 "
Oct.	_	25	Narrandera	16 ,,	16 & 17 No
',,		28	Darlington	16 ,,	16 & 17 No
Nov.		5	Wagga Wagga	16 ,,	18 Nov.
,, .	0.4	5	Wellington	16 ,,	17 ,,
, ,,	34	٠.,	Nevertne	16 ,,	20 ,,
,, .	. 7	30	Dubbo Wellington	17 or 19 Nov	19 ,,
. "		12	Cootamundia	17 Nov. 17	16 ,, 18 .,
,, ,,	•	20	Wagga Wagga	17 "	18 ,,
,,		22	Narrandera	17 ,,	20 & 21 No
: ,,	11	ł	Harden	17 ,,	18 Nov.
,,	5		Bomen	17 ,,	17 ,,
,,	2		Wagga Wagga	17 ,,	17 ,,
, ,,	36		Nyngan	19 ,,	19 ,,
Oct		32 26	Dubbo Waga Waga	19 ,,	23 ,,
Nov.		3	Wagga Wagga Kooroongal	$\begin{vmatrix} 19 & \\ 19 & \end{vmatrix}$	$\begin{bmatrix} 21 & \\ 20 & \end{bmatrix}$
,,		16	Narrandera	10 "	101 ′′
,,,	1		,,	19 ,,	20 ,,
,,		45	Nyngan	20 ,,	20 ,,
,,	35		Nevertire	20 ,,	20 ,,
,,		5	Wellington	20 ,,	20 ,,
"	1	4 3	Dailington Coverback	20 ,,	20 ,,
: "	•	3	Carrathool Albury	$\begin{bmatrix} 20 & ,, \\ 20 & ,, \end{bmatrix}$	20 ,,
, ,, , ,,		28	Kooroongal	01 ′′	22 & 23 No
		4	Cootamundia	21 ,,	Did not turn u
Oct		20	Narrandera	22 ,,	23 & 25 No
Nov.		9	Handen	22 ,,	24 Nov.
Oct. Nov.		28	Namandera	23 ,,	24 ,,
		$\begin{array}{c c} 7 \\ 21 \end{array}$	Wagga Wagga	23 ,,	24 ,,
,,,		13	Old Junce	23 ,,	28 & 29 No 24 Nov.
,,		ĺíź	Hay	09 ′′	25 ,,
: ,,		2	Darlington	26 ,,	27 ,,
- ,,		3	Camathool	26 ,,	27 ,,
,,		19	Namandera	26 ,,	26 & 27 No
,, ,,	10	3	Hay"	26 ,,	27 Nov.
	10	4	liay	26 ,, 26 ,,	27 ,,
,, ,,		10	Devlm's Siding	07 1	107
· ,,		3	Nanandera	27 ,,	27 ,,
: ,,		16	Cootamundia	27 ,,	27 ,,
.,,,		3	Namandera	27 ,,	27 ,,
Oct Nov		14	Roman	27 ,,	27 ,,
		3 5	Bomen Wagga Wagga	27 ,,	27 ,,
,,		10	Nariandeia	97 11	l 077 ''
. ,,		3	Culcann	97	28 ,,
) ,,	22		Nevertne	26 ,,	27 ,,
, ,,	00	31	Dubbo	26 ,,	23 & 26 No
,,	30	,,	Nyngan	26 ,,	27 Nov.
) ,, } ,,		11 4	Dubbo	26 ,,	22 ,,
• • •		2	Orange Warne	28 ., 28 .,	28 ,,
· ,,	34	–	Nyngan	[00 ''	00 ′′
; ,,	î		Blayney	00 "	00 ′′
' ,,	3		Nevertue	28 ,,	28 ,,
' Oct		28	Kooroongal	28 ,,	29 ,,
Nov.	00	19	Old Junee	28 ,,	28 ,,
,	22	İ	Nariandeia	28 ,,	28 & 29 No
,,,			137 - mm - 137 - m :	1.00	10037
,, 2 ,, 5 ,, _	5 3	1	Wagga Wagga Harden	28 ,,	28 Nov 28 ,,

RETURN of Live Stock Waggons, &c.—continued.

				30 /			
Date of	i Order.	Number of Cattle Waggons.	Number of Sheep Waggons.	. Wanted at.	Da	te wanted.	Date supplied.
	!	<u> </u>			i		<u></u>
27 Nov.			10	Orange	29	Nov	30 Nov.
24 Oct.	÷	• • • • • • • • • • • • • • • • • • • •	14	Narrandera	30	,,	
27 ,, 10 Nov.		•••••	28 26	Darlington	30	,,	1 7
10	· !		6	Wagga Wagga		****	100 NT
19 ,,		*********	3	Narrandera	30 30	,,	Δ.Τ.
19 ,,	1		10	Hay	30	,,	00.37
26 ,,	1	1		Bomen	30	,,	I
27,	ļ	5		Harden	30	,,	. 1 Dec.
28 ,,	ļ	36		Nevertire	30	,,	
21 ,,		27		Dubbo	30	_,,	
20 ,,	<u> </u>	• · · · · · · · · · · · · · · · · · · ·	5	Harden		Dec	
07	i		15 6	Old Junee	1	,,	
10 "	¦		1.	Wagga Wagga		,,	
16 "	ļ		9	Carrathool	3	,,	9 "
16 ,,	Į	*******	20	Hay	3	,,	A "
20 ,,	Į		13	Wagga Wagga	3	,,	12"
21 ,,	Į		2	Carrathool	3	,,	1 4 "
21 ,,	Į		11		3	,,	1 4 "
21 ,,	ļ	• • • • • • • • • • • • • • • • • • • •	10	Old Junee	3	,,	9 ''
30 ,,	!	4.		Outcarri	3	,,	. 3 ,,
l Dec.	•••••	3	,	Harden	3	,,	. 3 ,,
l ,,		*******	· 1	*************************************	3	,,	. 3 ,,
1 ,,		•••••	1	Wagga Wagga	3	,,	. 3 ,,
24 Nov. 23 ,,		39	13	Nevertire	3	,,	1 4 "
07	•••••		14	Nyngan	4	,,	9
2 Dec.	•••••	10		Dubbo	4	,,	1 4
9		17	********	Blayney	4	,,	l 4 "
2 Nov.			28	Narrandera	4	,,	K ''
17,			3	1)	4	,,	1 4 "
19 ,,			14	Carrathool	4	,,	1 4 ''
21 ,,			1		4	,,	1 4 '''
21 ,,			2	Old Junee	4	,,	1 4 ''
22 ,,	• • • • • • •		3	Wagga Wagga	4		Did not turn up.
22 ,,		*******	11	Carrathool	4	,,	1 4 75
26 ;,			1	Hay	4	,,	
27 ,, 28 .,	• • • • • • • • • • • • • • • • • • • •	10		Cootamundra	4	,,	
1 Dec.	•••••	•••••	4 1	Hay	4	,,	
9		********	i	Harden Wagga Wagga	4	,,	
3 ,,		******	$\hat{5}$	Bomen	4	,,	K
30 Nov.		25		Blayney	5	,,	K ''
27 Oct.			28	Kooroongal	5	,,	6 "
2 Nov.			5	Harden	5	,,	0 "
30 _,,		5		Narrandera	5	,,	5 ,,
	·;····	. 1	1	Harden	5	,,	. 3 ,,
16 Nov.	•••••		· 3 20	Albury	5	,,	0 "
91		*********	13	Hay	6	,,	h 7.
23 ,,			$\overset{15}{25}$	Yanko Wagga Wagga	6 6	,,,	H C O TO
23 ,,			ĩĩ	Harden	6	,,,,,,	0.70
26 ,,		1		33	6	,,	_ c
30 ,,			5	Wagga Wagga	6	39	0 "
27 ,,		1	9	Blayney	6	,,	e "
2 Dec.			5	Dubbo	6	,,	. 6 ,,
3 ,, 27 Oct.	•••••	38		Nevertire	6	,,	I & ''
6 Nov.	••••	•••••	28	Darlington	7	,, .i	1 0 "
20 ,,			5	Coolaman Wagga Wagga	7 7	,,	0 "
22 ,,			6	Carrathool	7	,,	10 "
5 Dec.		3		Cootamundra	7	,,	e ''
27 Oct.			28	Narrandera	8	,,	10 "
30 Nov.		10		Wallendbeen	8	,,	8 ,,
3 Dec.		5		Carrathool	8	,,	1 ''
30 Nov.	- 1	34		Dubbo	9	,,	0 "
4 Dec.	•••••	27		Nyngan	10	,,	. 14 ,,
5 ,, 19 Nov.	•••••	•••••	3	Wellington	10	,,	. 14 ,,
0.4	•••••	*******	$\frac{3}{25}$	Hay	10	,,	1 2 2 11
ດ/ ′′		•••••	13	Cootamundra Yanko	10	,,	11 "
30 ,,			4	Narrandera	10 10	,,	10
5 Dec.		7	*	Albury	10	,,	111 "
6,,		1		Bomen	10	,,	10 ,,
7 ,,		3	•••••	Carrathool	10	,,	12 ,,
7,,			5	Hay	10	,,	1
24 Nov.		*******	$\frac{2}{10}$	Darlington	11	,,	. 12 ,,
24 ,, 26 ,,		********	10	Cootamundra	11	,,	. 11 ,,
ο ^η ΄΄	•••••	*********	3 4	Old Junee :	11	,,	$ 12\rangle$
ne ''			5	Whitton	11	,,	111
20 ′′		4		Culcairn	11 11	,,	10
30 ,,	`		8	Wagga Wagga	11	,,	10 "
30			$\tilde{3}$	Culcairn	11	••	1111
2 Dec.		1		Narrandera	11	,,	1
5 ,,			1	Bomen	îî	<i>j</i> ,	1 2 2 11
5 ,,	•••••		2	Wallendbeen	11	,,	110 "
6 ,,		1		Carrathool	11	,,	111
	1						
		207 D					

Date of Order	Number of Cattle Waggons	Number of Sheep Waggons	Wanted at	Date wanted	Date supplied
24 Nov 4 Dec 4 ", 7 ", 4 ", 10 ", 11 ", 11 ", 13 ", 27 Oct 27 Nov 28 ",	• 3 28 6 6	34 11 10 12 1 4 28 25 1	Nevertne Blayney Wellington Blayney Dubbo Nyngan Orange Wellington Orange Kooroongal Old Junee Harden	11 Dec. 11 ", 11 ", 11 ", 12 ", 12 ", 12 ", 12 ", 12 ", 12 ", 12 ", 12 ", 12 ", 12 ", 12 ", 12 ", 12 ", 12 ", 12 ",	11 Dec. 11 ,, 8 ,, 12 ,, 14 ,, 12 ,, 12 ,, 13 ,, 13 ,, 13 ,, 12 ,,
25 ,, 30 ,, 30 ,, 8 Dec 10 ,, 10 ,, 10 ,,	1 4 1 5	3 2	Culcairn Wallendbeen Wagga Wagga Haiden Canathool Haiden	12 ,, 12 ,, 12 ,, 12 ,, 12 ,, 12 ,,	12 ,, 12 ,, 12 ,, Did not turn up 13 Dec Did not turn up 13 Dec.
11 ,, 29 Nov 10 ,, 11 Dec. 27 Oct 6 Nov 11 Dec 11 ,,	5 1	15 4 28 28 28	Wallendbeen Wagga Wagga Narrandera Wagga Wagga Darlington Coolaman Harden Narrandera	12 ,, 13 ,, 13 ,, 14 ,, 14 ,, 14 ,,	Did not turn up 13 Dec 13 & 14 Dec. Did not turn up 15 Dec. 14 " 13 " Did not turn up
11 ,, 24 Nov 11 Dec 24 Nov 12 Dec 14 ,, 7 Nov 24 ,,	7 2 3 5 3 5	2i 1 14	Nevertue '' Nanandera Bomen Canathool Moss Vale ''	14 ,, 14 ,, 15 ,, 15 ,, 7 Nov.	14 Dec. 14 ,, 15 ,, 14 ,, 7 Nov. 28 ,,
20 ,, 4 Dec 24 Nov	3 5 5	10	Maiulan Goulbuin	21 ,, 4 Dec 29 Nov	21 ,, 4 Dec 29 Nov. 5 loaded. 31 Oct
27 Oct 1 Nov 13 ,, 22 ,, 24 ,, 28 ,,	6	10 6 4 10	;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;;	3 Nov 21 ,, 5 Dec 12 ,, . 8 ,,	3 Nov 21 Nov 5 Dec. 12 ,,
6 Dec 12 ,, 8 Nov 23 Oct 31 ,, 14 Nov	4 4	4 3 3 4	Breadalbane Gunning	7 ,, 12 ,, 10 Nov. 24 Oct 1 Nov 24 ,,	7 ,, 12 ,, 10 Nov 24 Oct. 1 Nov. 24 ,,
19 ,, 5 ,, 13 ,, 6 Dec 26 Nov	3	13 4 4 4 4	Bowning Binalong	28 ,, 14 ,, 21 ,, 28 ,, 12 Dec 28 Nov	28 ,, 14 ,, 21 ,, 28 ,, 12 Dec 28 Nov
Small con-	1,250	2,950	-		
signments Total	1,396	2,995	_		

STATEMENT showing the number of Cattle and Sheep received at Homebush Station during each month in 1881, 1882, and 1883

	18	81.	18	82.	1883.		
Month	Cattle	Sheep	Cattle	Sheep	- Cattle	Sheep	
January February March April May June July August September October November	2,085 2,286 3,799 2,768 1,413 2,075 1,287 2,763 2,923 3,140 5,122 3,607	53,413 41,078 53,291 40,070 38,275 34,037 33,193 63,319 56,423 68,683 67,387 62,967	5,393 3,671 4,645 4,151 4,529 4,495 4,517 4,363 7,507 7,690 7,271 6,563	60,850 52,136 62,163 41,828 37,392 24,171 46,434 60,869 76,961 78,626 98,740 73,058	7,143 6,157 5,109 3,740 6,168 3,712 4,424 2,588 3,867 3,392 2,889	102,581 79,606 70,255 72,143 63,333 66,749 63,465 70,168 53,769 99,571 112,667	

No. 7.

Minute of Secretary for Public Works.

I HAVE read this report with pleasure: it bears out a statement I made to the House the other evening that I was satisfied the Officers of the Department had made every effort to meet the requirements of this class

20/12/83.

No. 8.

Report of Traffic Manager.

Question to be asked in Legislative Assembly on 11th December, 1883.

MR. BADGERY to ask THE SECRETARY FOR PUBLIC WORKS,-

- (1.) Were nineteen trucks of cattle loaded at Narrandera on the 21st of last month and consigned to Homebush?
- (2.) When did they leave Narrandera; when did they arrive at Homebush; and if any delay occurred en route, where, and for how long?

Traffic Manager's reply :-

Yes.
 The nineteen waggons were forwarded from Narrandera in two detachments, one of eight and

the other of eleven waggons.

The eight waggons left Narrandera at 5.30 a.m., and arrived at Homebush at 9.45 a.m. next day, four hours late, twenty-eight and a quarter hours in all. The train was delayed sixty-five minutes at Bowning, in order to unload and reload animals observed to be down. This put it out of its proper course, and it lost time at various points waiting to cross other trains in consequence. The eleven waggons left Narrandera at 3.15 p.m., and arrived at Homebush at 1.50 a.m. on the second day following, eight and a half hours late, thirty-four and a half hours in all. The train was thrown out of its proper course by the late running of 31 down, which was in turn caused by up live stock trains. It met with a further delay of thirty minutes by failure of the locomotive, and seventy minutes were lost at Yass unloading and reloading animals observed to be down. Being now completely out of its course, it lost time all the way to Homebush, arriving there as already stated eight and a half hours late.

This inquiry has been suggested by the fact that six of the animals died in transit, and I have no doubt an attempt will be made to show that the excessive mortality was due to the length of time the waggons were in transit; but it can be proved conclusively, I think, that the injuries were not caused by any want of attention on the part of the Department, nor by delay in transit, which I may say in passing was

unavoidable.

The cattle were in a state of complete exhaustion when loaded into the trucks, caused it is said by the difficulty of getting them across the Murrumbidgee, and it is reported to me that five of them were altogether lost while crossing the river. In proof of this I may point out that the trains were delayed at Bowning and at Yass, in order to raise animals which had given way by that time, and that was before they had been twelve hours in transit. Not only were the animals in an unfit state to undertake a railway journey of 340 miles, but they appear to have been overcrowded in the waggons, no less than eleven in most of the trucks instead of eight (or nine if they were not too large). The Department supplied twenty-two

waggons for the conveyance of the herd, but only nineteen were used.

There have been delays unfortunately, but with a large traffic on single lines such as ours it is a matter of impossibility to avoid occasional irregularities in the time-table working. The delays are not unfrequently caused by time lost at the trucking stations on the part of the loaders, and when it is considered that on a single line the delay to one train throws a great many others out, it is not to be wondered at if they occasionally arrive late. The delays to goods trains caused by the failure of the locomotives and a greatly-increased traffic for some time past have been most troublesome; but it cannot be said, in the face of what I have pointed out regarding the condition of the animals and the way in which they are packed into the trucks by the owners and their servants, that the delay is the sole or even the chief cause of the deaths in transit. There is no want of screw couplings, and I may take this opportunity of again stating that on English railways live stock waggons are not fitted with screw couplings at all, nor are they better in any respect than those in use on New South Wales railways.

It cannot be said either that the animals suffer on account of goods trucks being put on the same trains, because that seldom occurs, except on the level lines on this side of the mountains and in the far interior. It is only done to avoid waste of locomotive power, and great care is always exercised in the

selection of waggons, and avoiding shunting in transit.

Were the stock well rested, fed, and watered at the trucking stations, then quietly loaded and not overcrowded, I am confident that deaths in transit would be seldom if ever heard of. In this I am borne

out by the written testimony of a gentleman of great experience, Mr. Gee, Manager of the Sydney Meatpreserving Company, whose letter I enclose.

Until last Saturday week all orders for live stock waggons had been completed, but during last
week, on account of the extraordinary demands made upon the Department to rush stock forward to the
Sydney markets, and partly owing to the irregularities of the trains, we fell behind to the extent of fortysize regarders of Schundary last. Special efforts are being made, and I trust that before the end of this week six waggons on Saturday last. Special efforts are being made, and I trust that before the end of this week W. V. READ, we shall again be working smoothly.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

CARRIAGE OF LIVE STOCK BY RAILWAYS.

REPORT OF THE BOARD

APPOINTED TO ENQUIRE INTO THE

CONDUCT OF THE LIVE STOCK TRAFFIC ON THE RAILWAYS OF NEW SOUTH WALES,

WITH

MINUTE OF COMMISSIONER FOR RAILWAYS THEREON,
DATED 15 MAY, 1884.

ORDERED BY THE LEGISLATIVE ASSEMBLY TO BE PRINTED, 10 June, 1884.

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CARRIAGE OF LIVE STOCK BY RAILWAYS.

Legislative Assembly, No. 35, Tuesday, 18 December, 1883.

Mr. Wilkinson moved,—That in the opinion of, this House, it is desirable that the Government should without delay appoint a Board to inquire into the Live Stock Traffic on the Railways, for the purpose of finding out and removing the causes of the existing irregularities and delays in the transit of live stock.

Question put and passed.

Mr. John Sanger, of Wangamong, near Corowa, called upon the Commissioner to make representations as to the urgent necessity of effecting certain alterations and improvements in the construction of our sheep vans.

One of the principal points which he laid stress upon was the necessity for dividing our compartments to prevent the sheep from being thrown down by the weight of their number.

Another point was the necessity of a board to prevent the sheep's legs slipping through at the floor along the sides of the van; of course it would require to be movable so as not to interfere with the cleaning of the trucks.

What is being done in the matter? Mr. Dawson some time ago saw Mr. Midelton on the same subject.

See if we have any report from Locomotive Engineer, and if not forward this for early report.

D.V., 6/12/83.

PLEASE report what has been done in this matter. See my memo. to you of 30/6/83.—W.S., per R.J.S., 13/12/83. Mr. Midelton.

Nothing has been done towards altering the vehicles, but I have given the matter consideration, especially since Mr. Dawson called on me. It seems by the papers that in 1880 six sheep-vans were subdivided for trial, but I see no reports as to result, but I notice that the Traffic Managers of the South and West and Northern Lines both say they think there will be very little to be gained by subdividing as suggested by Mr. Dawson and others, and I am somewhat doubtful about the benefits of such a scheme myself. From what Mr. Dawson told me of his scheme I consider he has well worked it out, but I think the real secret is not in subdivision but in being able to convey the sheep and cattle somewhat quicker or very much slower. I think it would be unnatural to expect a sheep or bullock to stand fourteen or sixteen hours (continuously) even in a turnip-field, much less in a railway waggon in motion up and down inclines of 1 in 40 and so on, and I certainly agree with the Traffic Manager that many of the waggons are over-crowded, and that is the principal cause of the animals dying, as I am sure the temperature of 100 sheep packed closely together must at all times be very high indeed. It would be well therefore as a first experiment (and as the cheapest too) to allow not more than a fair quantity of sheep to be put into a waggon, especially on long journeys; on short ones the same number as at present perhaps could be sent. Mr. Dawson has called on me several times, and he is now in possession of sufficient information to employ a draftsman, who I understand is designing a waggon to Mr. Dawson's ideas, and I dare say in a week or two we shall be favoured with a view of it.—Thomas Midelion, 14/12/83. Loco. Engineer.

According to the Traffic Managers'—south and west—reports, the subdivision of the trucks will necessitate additional races and loss of time which are matters of grave consideration.—W. Scott, 18/12/83. The Commissioner.

Something more should be done in my opinion than this. Great outcry is made for the subdivision of the trucks, and it is stated that the Victorian trucks are subdivided into four compartments. Traffic Manager might ascertain whether this be a fact through Station-master, Albury, or Inspector Roberts.—D.V., 21/12/83. Urgent.

In is a fact that Victorian sheep-vans are divided into four compartments, but they have also double races to suit, while ours are only single.

It would no doubt be a benefit to have the vans divided into compartments, but, as I said before, it will be necessary to go to very considerable expense in doubling our races too, unless, as I fear is impracticable, a portable sliding door were made in the partitions.

Please see my minutes of 18/6/83 and 14/9/83. While stating that the partition would be an improvement I am quite satisfied that the real remedy lies in abstaining from overcrowding.—W. V. Read, per D.K., 22/12/83. Commissioner.

None of our officers appear to me to look at this question aright. The result will be that the Department will presently be *compelled*, by force of public opinion, to make some advance towards meeting public requirements, and meantime the tendency will be to drive this traffic in the direction of Victoria. I am inclined to think we are behind that Colony in our means and facilities for conducting sheep traffic.—D.V., 27/12/83.

Minute

Minute of Commissioner.

MR. COWDERY to say what the cost will be of doubling the races at all the live stock stations South, West, and North, so as to admit of the sheep-vans being divided into four compartments.

I wish to have a reply to this not later than the 15th January. Please detach an officer to go into the whole question, not referring it to each District Engineer. I shall be glad if Mr. Avern can undertake this duty.

CH.A.G., 29/12/83.

Upon further consideration, the better plan will be to appoint a Board, consisting of Mr. Avern, Mr. Midelton, and Mr. Kirkcaldie, to report upon the whole question. In connection with this reference I think it desirable that both the design of truck which Mr. Dawson is said to be making, and also one which Mr. Evans has designed, should be taken into consideration by the Board. In the latter design I am informed provision has been made for subdividing the truck into four compartments during the process am informed provision has been made for subdividing the truck into four compartments during the process of loading, or after the sheep are loaded, by movable divisions, carried when not in use on the top of the van. If this contrivance be of any practical use it may save the cost of increasing the races at the live stock yards, and could readily be applied to our present vans at a trifling cost. As this Board may, in a measure, meet the requirements of the resolutions lately passed in the House on Mr. Wilkinson's motion, I submit the proposal for the consideration of the Minister.—CH.A.G., '29/12/83. Approved.—F.A.W., 31/12/83.

INFORM the members of the Board through their respective heads.—CH.A.G., 2/1/84.

Engineer for Existing Lines, Locomotive Engineer, and Traffic Manager informed as under.—

I HAVE to inform you that the Minister has approved of the appointment of a Board to enquire into the whole question of the carriage of live stock by rail, the Board to consist of Mr. Avern, Mr. Kirkcaldie, and Mr. Midelton. Will you please inform Mr. , and ask him to place himself in communication with the other members of the Board to arrange for meeting, &c.—G.B., 4/1/84.

Board appointed to inquire into the conduct of the Stock Traffic.

I THINK it would be as well, and give confidence to any recommendation which the Board may make, and to the conclusions which may be arrived at in regard to the causes of the alleged misconduct of the Stock Traffic, if the names of two gentlemen be added to the Board who are not railway officials. I have ascertained that Mr. Wilkinson, M.P., who moved the resolution in Parliament for the appointment of the Board, will be willing to give his services as a member of the Board; and Mr. Gee, of the Parramatta Meat Works, who is a large consignee of stock, might also be made a member with advantage to the

inquiry.

I therefore approve of the appointment of Mr. Wilkinson and Mr. Gee to the Board. Mr. Gee will be paid a fee of £3 3s. a sitting for his services.

F.A.W., 15/1/84.

The Secretary for Public Works to R. B. Wilkinson, Esq., M.P.

Department of Public Works, Railway Branch,

Sir,

Sydney, 15 January, 1884.

With reference to your personal interview of this morning on the subject of the Board appointed to inquire into the conduct of the Live Stock Traffic on the Government railway lines, and your consent, as mover of the resolution in the Legislative Assembly for the appointment of the Board, to act as a member of the same, I have the honor, while thanking you for your consent to act, to inform you that your appointment as a member of the Board is hereby approved.

I have, &c.,

F. A. WRIGHT,

Secretary for Public Works.

The Secretary for Public Works to The Manager Sydney Meat Preserving Company.

Department of Public Works, Railway Branch, Sydney, 15 January, 1884.

Referring to the representations that have from time to time been made as to the alleged misconduct of the Live Stock Traffic on the Government Railways, I have the honor to inform you that in accordance with a resolution passed by the Legislative Assembly it has been decided to appoint a Board to inquire into the matter, and it has been suggested to me that from your knowledge of the live stock traffic you would be eminently fitted to sit as a member of such Board.

I shall be glad, therefore, to learn, at your earliest convenience, whether you will consent to undertake the duties, and may add that a fee of £3 3s. will be paid you for each sitting. It is intended the Board shall consist of five members; those already appointed are R. B. Wilkinson, Esq., M.P.; F. M. Avern, District Engineer; D. Kirkcaldie, Assistant Traffic Manager; and Thomas Midelton, Locomotive Overseer; and the meetings will be held forthwith at the Central Railway Office, in George-street.

I have &c. F. A. WRIGHT,

Secretary for Public Works.

REPORT of Board appointed by the Honorable the Minister for Public Works to inquire into the Conveyance of Live Stock by Rail.

1. The members appointed to the Board were:

Members of Board.

MR. R. B. WILKINSON, M.P.,

Mr. A. Gee, General Manager Sydney Meat Preserving Company (Limited),

Mr. D. Kirkcaldie, Assistant Traffic Manager, New South Wales Railways,

Mr. T. Midelton, Locomotive Overseer, New South Wales Railways,

- Mr. F. M. Avern, M. Inst. C. E., and District Engineer, Western Railway, New South
- 2. The Board held its first meeting on 18th January, and elected Mr. Wilkinson, M.P., as Chairman of Board. Chairman.
- 3. The Board has held twenty-six meetings, extending over the period between 18th January and Board held twenty-six meetings.
- 4. At these meetings the Board examined thirty-four witnesses (as per list attached), and obtained witnesses examined by Board. suggestions in writing from others-comprising the leading stock and station agents and owners and trucking agents.

5. The Board visited Homebush Sale Yards and saw stock untrucked and yarded; also inspected inspection of yards by the Nyngan, Nevertire. and Dubbo stock yards, on the Western Line; saw a train of cattle loaded at Board, and journey Dubbo, and travelled by the stock train to Homebush.

6. The business which the Board considered itself called on to take in hand was:-

Business of the Board

- 1st. The consideration of such complaints as have been made against the traffic as at present
- 2nd. To obtain from witnesses a statement of any shortcomings in the service of which they might be cognizant.
- 3rd. To obtain suggestions for the remedy of such shortcomings and for the improvement generally of the Service.
- 7. The Board found the recorded complaints to consist of :-

Recorded complaints.

- 1st. Inability of Railway Department to supply sheep-vans when ordered.
- 2nd. Disappointment by sheep-vans not arriving to time at loading stations.
- 3rd. Inability of Station-masters at loading stations to give timely information as to exact time at which sheep-vans will arrive.
- 4th. Inability of Station-masters at Homebush, and Farley and other stations, where stock is unloaded, to give information as to the time when stock trains will arrive.
- 5th. Deaths of stock in trucks.
- 8. In regard to the first complaint, "Inability to supply trucks," the Board finds that the Depart- Inability of Department ment has been occasionally unable to supply the sheep-vans ordered, and this has been the case, frequently during the last two and a half months of 1883, when the orders were unusually heavy, consequent on the drought. [See Traffic Appendix.]

9. The witnesses all express themselves as believing these failures to arise from an insufficient stock witnesses consider rolling stock deficient in quantity.

10. The Board are of opinion that under a different system of dealing with orders the present Board thinks rolling number of vans, viz., 250 on the Southern and Western Lines and 139 on the Northern Line, might be found sufficient for the traffic, even when the demand is as abnormal as it was during the two and a half months referred to. At the same time the Board is of opinion that it would be a most expedient measure Board advisboth as an insurance to the Commissioner and as a safeguard against accidental disappointment, to increase the present number of vans by a reserve of about 10 per cent.

- 11. In regard to the second complaint of "Disappointment in supply of vans," some of the Disappointment in supply of sheep-vans. witnesses have admitted that they have been about as often in default by not getting their stock at the Consignors as much in fault as Department has been in not supplying the vans to time; and nearly witnesses taken and the properties and the constitute of the supplying the vans to time; and nearly witnesses and out the constitute and the constitute of the constitute and all the witnesses testify to uniform exertion and courtesy on the part of the railway officials of all grades, exertion and courtest on the part of the railway officials. in trying their utmost to push on business and to meet the reasonable wishes of customers.
- 12. The Board finds that the traffic has been heretofore regulated on a system of give and take, the system on which the Department has con-Department making no definite engagements, but promising to do its best to meet the orders of its cus- ducted the traffic. tomers, and the customers trying their best to get the stock in the yards at the times and on the days for which trucks are ordered.

Disappointment in the non-supply of vans by the Department arises frequently out of short-comings of owners.

13. The Board finds that many cases in which the Department has not succeeded in getting vans at the stockyards at the times appointed, arise out of disappointments which the Department itself experienced through owners failing to get their stock in the yards according to arrangement. Thus Mr. A. who was to have loaded sheep at X station on Wednesday, fails to do so until Thursday; the trucks are kept at the yards a day to suit Mr. A's convenience, and as a consequence these trucks, which are under promise to Mr. B. at Y station on the following Tuesday, do not reach him until Wednesday.

Board recommends system of deposits and fines.

14. The Board believes, and most of the witnesses are of the same opinion, that it would be most advantageous to all parties that this system of mutual accommodation should cease and give place to a system involving a guarantee of supply by the Department in return for a deposit on trucks ordered and fines and forfeits for trucks not used or availed of at the appointed times,—such a system as is now in force in Victoria.

Some hard cases must arise out of this system but the Board recom-mends consistent adherence to system.

15. The Board strongly recommends the change to such a system as being the root of all improvement in the punctual supply of vans. In doing so it has most carefully considered that in some quarters objections will be raised, especially when, as must occur, hard cases arise, particularly in connection with stock coming from Queensland and other distant places. The Board, however, thinks that a determined and consistent adherence to the rules of the proposed system will in a short time result in such increased vigilance and promptitude by all concerned, as to cause all ground for opposition or complaint in this respect to disappear.

Capabilties of rolling stock will be increased by this system and correspondence diminished.

Inability of Station-masters to give informa-tion as to arrival of

Inability of Station-masters at Homebush to advise as to arrival of stock trains.

Board advises better advices, and telegraphing of delays.

Cause of death of stock in trucks.

- 16. It is under this system that the Board considers the effective capabilities of the rolling stock will be largely increased and much of the present written and telegraphic correspondence be abolished.
- 17. The third complaint, that Station-masters are unable to give information as to when trucks ordered will arrive, would disappear on the introduction of the proposed new system.
- 18. In regard to the fourth complaint, "that the Station-master, Homebush, cannot advise as to the arrival of stock trains with sufficient certainty," the Board finds that the complaints on this head are many, and advises that the present system of advices between the despatching and arrival stations be more carefully and more rigidly carried out, and that certain of the intermediate large stations be ordered to telegraph to the stations to which stock are consigned the running of trains in case of delays.
- 19. To the fifth complaint, death of stock in trucks, the Board has given the most careful consideration and finds the causes to be those enumerated below in the order of their importance.

DEATH AMONGST SHEEP.

- 1. Overcrowding.
- 2. Jerking and shunting.
- 3. Want of attention on the part of the drovers in charge.
- 4. Want of arrangement in floor of upper deck for getting rid of droppings and urine and deficient ventilation.
 - 5. Length of time in trucks.
 - 6. Natural causes.

DEATH AMONGST CATTLE.

- 1. Overcrowding and use of old style of trucks.
- 2. Want of water and rest before trucking.
- 3. Jerking and shunting.
- 4. Want of attention on the part of drovers in charge.
- 5. Length of time in trucks.
- 6. Natural causes.

Difference of opinion as to best number of stock to load in truck.

Majority advocate a moderate number of stock to be loaded in each truck.

Owners who do not overcrowd have had very few losses.

Death rate in sheep has varied from 1 in 3,500 to 1 in 480.

have plenty of room and a chance of getting up should they fall. Others think it better to pack the animals as closely as possible with the idea that they are less likely to get down from the jerking of the train. The majority of the witnesses advocate a middle course. 21. The Board finds that owners who have paid careful attention to loading and refrained from

best method of loading. Some witnesses believe in loading a small number of animals, so that they may

20. In regard to the overcrowding of sheep and cattle much difference of opinion prevails as to the

overcrowding make very few complaints as to deaths.

22. One firm had consigned to it during the past year 37,000 sheep, and out of all these only lost 20 by death; and 10 of these deaths they admit to have been caused by unavoidable overcrowding in one consignment of about 1,600, so that out of the other 35,400 there were only 10 deaths, or about 1 in 3,500. In the cases of sheep landed at Homebush for other consignees the average mortality during the last eight months of 1883 was 1 in 480. The Board cannot too strongly invite the attention of owners to the desirability of avoiding overcrowding.

Board strongly advises owners to avoid overcrowding.

23.

23. The second cause of death in the case of sheep, and the third cause in cattle, "jerking and Jerking and shunting as a cause of death to stock. shunting," is testified to by a large number of witnesses, many of whom have travelled with stock trains. Jerking occurs occasionally on the road through bad management of the brakes and careless driving; but it more frequently happens at stations either at stopping and starting, or from shunting when the train is a mixed one of goods and cattle.

24. All witnesses agree that this serious cause of loss in stock has been much reduced by the intro- Death of stock much reduced by use of screwduction of screw couplings which are now suppled to nearly all the trucks on the Southern and Western couplings. lines, and to some on the Northern line. This improvement is one which it is believed exists on very few lines in any part of the world.

25. The Board recommends that the supply of screw couplings to all stock trucks be completed as quickly as possible; that none but experienced drivers be entrusted with stock trains; that drivers and guards be severely punished for neglect of care in starting trains and working brakes; and that such and equards for inching the severely punished to the severely puni experienced drivers. Punished for neglect of care in starting trains and working brakes; and that such negligence should be strictly reported as often as observed by Inspectors and all other railway officers; that stock trucks be mixed as little as possible with goods trucks, and that where this is unavoidable and obedience by men. That mixing stock and the rule of the Department, providing that stock trucks shall be put next the brake be much more rigidly enforced.

26. The third cause of death in sheep and the fourth in cattle is the want of attention by the want of attention to stock by drovers in drovers who accompany the stock trains, and in some cases the absence of any one in charge.

27. The Department issues free passes to drovers for the purpose of ensuring a caretaker for the stock by Department to during transit. The Board considers that by the constant attention of such caretaker and by raising such per animals as have fallen, the number of losses may be much reduced. At present, by the evidence of many drovers. witnesses, a great many of the drovers entering the brake vans tired from long stages, spend most of their Drovers sleep instead of caring for stock. time in sleep instead of in looking after their stock.

28. The Board considers that in all cases stock should be accompanied by a drover, and the efficiency and attentiveness of this man should be a matter for the special attention of owners and agents.

29. The Department should require guards of stock trains to note in their train report all cases Guards to report inattentive drovers. of drovers neglecting their duty.

30. In regard to fourth cause of death among sheep, viz., Want of arrangement in floor of upper want of foothold and ventilation in upper deck deck for getting rid of droppings and urine and deficient ventilation," all witnesses, with one exception, of sheep vans. agree that most deaths among sheep occur in the upper decks, and that the cause of the same lies in the want of arrangement for getting rid of the droppings and urine, and the want of ventilation through the top floor. To remedy this the Board recommends that in new trucks a second bottom, probably of sheet Board recommends double-bottom to upper iron, be fixed below the upper floors to receive the droppings and urine from the upper floor, which may dethen be arranged with holes or spaces between the battens, whereby both ventilation and cleanliness may

31. In regard to the fifth cause of deaths among stock in the trucks, the Board finds that the time Length of time in trucks. is occasionally considerably in excess of what it should be, according to time-table. The cause of this Caused by delays at lies in delays, sometimes occurring in consequence of the engines of stock trains losing time on the road, but more frequently from trains having to wait at stations through other trains running late. A frequent Unpunctuality of consignors a frequency cause of such delays at stations is that the stock trains are running out of their proper time, consequent cause of delay. on consignors having failed to load their stock in time to admit of the trains leaving the yards at the hour

32. The Board is of opinion that the time of live stock journeys should be shortened as much as possible, and that all possible precaution for preventing live stock trains being delayed or thrown out of Board recommends their running should be taken; and with this view recommends that additional crossing places be formed places. where such are found to be necessary.

33. Further, that the same class of coal and stores as are issued to passenger trains be served out Best class of stores recommended for stock to stock trains, so as to better enable them to run to time. Statements have been made that goods trains trains. have had preference of stock trains, but the Board has received no evidence to prove that the rule of the Department giving stock trains the preference has ever been infringed.

34. The last reason of death common to sheep or cattle is that of natural causes. This, though Deaths arise from natural obvious, the Board thinks has sometimes been overlooked, and such deaths have been ascribed to the treatment the animals received whilst in the trucks.

35. Finally a very important cause of death among cattle, but one applying only to a limited Bad condition of stock extent to sheep, is the bad condition of the stock as put into the trucks, arising from want of water and cause of death in cattle rest. Cattle driven into the yards and loaded at once after undergoing long marches, over a country often without grass or water, commence a long railway journey in a state of suffering, and many of them

fall down through weariness and thirst. This no doubt occurs chiefly in seasons of drought like the present, and is to a large extent practically unpreventible under existing arrangements, still the Board desires to commend the matter to the careful consideration of owners, as one from attention to which might result a great decrease in the number of deaths. In the third part of this report the Board deals with remedial arrangements, which it is hoped may materially assist in having the stock loaded in better condition.

PART Nó. 2.

Matters affecting the traffic.

- 36. In addition to the more general complaints which have been dealt with the following matters affecting the traffic in live stock were brought to the notice of the Board:—
 - 1. Unsuitability of stock-yards.
 - 2. Unsuitability of old cattle trucks.
 - 3. Want of cleanliness in trucks.
 - 4. Loss of sheep in transit.
 - 5. Splitting up of cattle trains, whereby consignments become divided and arrive irregularly.

Unsuitability of stock-

37. In regard to the first matter, that of "unsuitability of stock-yards," all the witnesses having experience of the stock-yards on the Western Railway say that the yards as now altered are suitable, particularly those at Dubbo, which would be complete and satisfactory in all respects except that the sheep and cattle races are not a sufficient distance apart to give the necessary truck space in the rare case when sheep and cattle are being loaded at the same time.

Nevertire and Nyngan

- 38. The yards at Nevertire and Nyngan were constructed in a particularly inconvenient design and wanting in strength. They have been altered by the Department, and made workable, but larger receiving yards at each place are still said to be a great necessity.
- 39. The yards on the Southern and Northern Lines are, some of them, incommodious, and the witnesses would like to see them altered and improved on the model of the Dubbo yards.

Recommendation of Board in regard to con struction of yards. 40. The Board is of opinion that in the construction of new lines more attention should be given to the design of stock-yards, and that such design should be based on observation of the practical working of existing yards, both Government and private.

Unsuitability of old style of cattle trucks.

41. In regard to the unsuitability of "old cattle trucks," all witnesses agree in condemning them and are as unanimous in praising the new trucks. The great defects complained of in the old trucks are their want of breadth and being open on both sides and having so many iron bars about them. One of the witnesses and the largest customer of the Department was most emphatic in denouncing the old trucks and declared they ought every one of them to be burnt.

Recommendation of Board in regard to old trucks and building of new ones.

- 42. The Board recommends that the old trucks be replaced as soon as possible by others on the new pattern and with the following improvements:—
 - 1. The removal of the iron rod at the bottom of the trucks and the filling up of the space, excepting a sufficient width to admit of ventilation and cleaning. All witnesses agree that this rod is dangerous to cattle from their getting their horns under it when thrown down. (This alteration should be made at once in the trucks now in use.)
 - 2. The omission of the rump-board, the utility of which seems more than doubtful
 - 3. The raising of boxing round trucks 6 inches higher than in those now in use. This alteration will increase the advantage that this style of truck possesses in screening the cattle and preventing their being frightened at the sight of people, lights, &c., at stations.
 - 4. Making the doors at end of sides of trucks instead of near the middle as at present.

 This alteration is recommended for preventing cattle knocking themselves about against the styles of doors when leaving the trucks.
 - 5. Rounding off of edges of all door and other posts.
- 43. The old style of trucks should be boarded up and as far as possible should, until replaced by others, be kept for traffic within short distances of the sale-yards, as between Homebush and Goulburn, and Bathurst, where the cattle are smaller.

Want of cleanliness in trucks.

44. The third matter, that of want of "cleanliness in trucks," has been spoken of by several witnesses, whose evidence is to the effect that on the Northern line trucks are seldom cleaned, and that in times of great pressure the matter has not been so regularly attended to on the Southern and Western lines as it should have been.

Recommendation of Board in regard to cleanliness in trucks 45. The Board considers it very important that trucks should be thoroughly cleaned before being sent out, and all necessary arrangements and appliances to this end should be considered, and supplied by the Department.

- 46. In regard to the fourth matter, "loss of sheep in transit," many witnesses complain of consign- Loss of sheep in transit. ments arriving with a less number of sheep than are invoiced to them, and some attribute these losses to sheep being taken out of the trucks during transit. The general experience is that these losses have become less frequent since the Department has adopted the plan of putting a wire and a seal on each
- 47. The Board has carefully considered this matter, and has come to the conclusion that it is Very doubtful if sheep have ever been stolen doubtful whether any sheep have ever been taken out of the trucks during transit (certainly since the from vans. introduction of seals), and think it much more probable that the invoiced numbers were never put in the trucks. But be this as it may, the Board considers that no better means of preventing sheep being taken seals the best kind of fastening. out of the trucks could be devised than those now in use by the Department. With proper sized wire and the lead seal carefully compressed, it seems impossible to remove a seal and replace it.
- 48. The only suggestion the Board can make is that a more careful and systematic examination suggestion by Board for systematic examination suggestion suggestion by Board for systematic examination suggestion sug of the seals should be made at receiving stations by an officer of the Department before the trucks are nation of seals handed over to the consignees, and that any cases of trucks found carelessly sealed should be reported.
- 49. The fifth matter, that of trains being split up, is one of which several witnesses have com-splitting up of trains. plained. A certain number of trucks of stock are started together in a train, and on arrival at certain places on the journey, one, two, or three or more, are cut off and left to be brought on by trains following. In this way it has happened that on sale days portions of consignments are not to hand, and it becomes a matter of favor to the agents selling the same that buyers will purchase the whole consignment. Also, trucks so cut off are very liable to get mixed with trucks of goods, notwithstanding regulations ordering them to be placed next the brake. .
- 50. The Board finds that owing to the varying character of the lines and the very heavy gradients splitting up of trains the splitting up of some consignments is unavoidable, and can only recommend the greatest promptitude and care in forwarding the trucks cut off.

PART No. 3.

51. The recommendations and suggestions elicited from witnesses for the general improvement of Recommendation the Service are as follows:-

- 1. The establishment and strict conservation of reserves at all the most important trucking Reserves.
- 2. The provision of a suitable water-hole or watercourse either at the yards, or, preferably, in water. the reserves, especially at such stations where natural water does not exist within a reasonable distance.
- 3. The watering of stock on the journey.
- 4. Supervision by the Department to prevent bad loading and overcrowding in trucks.
- 5. Division of sheep trucks with double races for loading.
- 6. Division of cattle trucks.
- 7. A combined sheep and cattle truck.
- 8. Special pick-up trains for small lots.
- 9. Increased speed of stock trains.

Supervision of loading. Division of sheep trucks. Division of cattle trucks.

Watering stock on the

Special pick-up trains. Increased speed.

- 52. In regard to reserves the Board finds that at many of the trucking stations these already Reserves. exist; but through want of fencing, or a ranger to have control over the same, these reserves chiefly supervision of reserves. benefit local proprietors and are of little or no use to stock travelling by rail.
- 53. The Board considers this matter one of very great importance, and especially will it be so Reserves of very great importance. should the system of deposits and fines recommended by the Board be adopted, inasmuch as under such a system owners of stock, in the desire to avoid being late, are more likely to have their stock at stock likely to be waiting the yards a longer time than at present, previous to loading them. In such case grazing and water for system of deposits and fines. stock will be of the very greatest possible benefit.

54. The subject is, however, surrounded by no few difficulties. In the first place there is the Difficulties in the way of making reserves effective. obtaining of reserves where not already secured and secondly, to make the reserves thoroughly effective they ought to be fenced in, and as such reserves would, according to the importance of the yards and the Reserves require to be fenced in. character of the country, vary in size from (say) 200 to 2,000 acres, such fencing would of necessity mean a very considerable outlay; and whether such outlay should be borne by the Railway or by some other Fencing very expensive and Department liable to Department is a matter for the consideration of the Minister. Thirdly, the reserves would require to be incur the same uncertain. carefully superintended to prevent stock-owners from grazing their stock on them an improper time, Ranger required. and also to prevent their misuse in other ways.

55. These points will require careful consideration and regulation; but the Board considers the matter well worthy of full attention and development in a practical and workable form.

Provision of water for stock. Board recommends provision when natural water is unobtainable within 3 miles of stock-yards. 56. In regard to the provision of water for stock the Board considers this of very great importance. When a natural supply is unobtainable within a reasonable distance of the stock-yards, say three (3) miles, the provision of water in connection with the yards is, in the opinion of the Board, an absolute necessity and in all cases a want that it is very desirable to meet.

Reserve the most suitable place for water in general. Dam recommended.

57. The Board considers that in most cases the reserve will be the most suitable place in which to establish a water supply, and probably a dam may generally be found to be the best arrangement.

Wide surface trough recommended for yard Description of trough. 58. In cases where it is found necessary or advisable to give the supply in the stock yards, the best form for inviting cattle to drink in small lots at a time, will probably be that of a trough from 4 to 6 feet wide, slightly raised above the general level of the yards, with the ground filled in to rise gradually to the lip of the trough. Such a trough should be 20 or 30 feet long and about 2 feet 6 inches deep and may be formed of brick in cement or timber. Water should be pumped into this through a pipe entering the trough near the bottom and overflowing near the top, so as to admit of a frequent change of the water. A pipe should also be fixed in the bottom of the trough, through which it could be emptied and cleaned out when necessary.

Condition of stock to be improved by watering and feed.

59. The Board considers this provision, together with that of reserves, should result in the stock being put into the trucks in very much better condition than at present, and that thereby one of the leading causes of death would be removed.

Watering stock in the trucks impracticable.

60. The question of watering stock during the journey has been very carefully gone into by the Board. A large majority of witnesses consider that it would be futile to attempt to water stock by means of troughs attached to the trucks. The animals are unaccustomed to troughs and are too wild to drink out of them, and this opinion is much strengthened by the evidence that even on arrival at Homebush after long journeys cattle will seldom drink out of the Corporation troughs.

Taking stock out of trucks for watering more injurious than beneficial. 61. A nearly equally large number of witnesses are of opinion that to unload cattle at some point on the journey, to water them and then to reload, would cause the animals so much knocking about as to be productive of more injury than benefit.

Sluicing cattle in trucks. Witnesses' opinion not favourable.

62. The question of sluicing cattle in the trucks by means of a hose has been carefully considered. The opinion of most witnesses was that after the first cooling effects of such a sluicing had passed off the animals would suffer from increased sweating, and be also much frightened.

Board not favourable.

63. The Board does not consider that animals so treated would be benefited; a trial of the plan can however be easily made.

Supervision of loading by Department.

64. In regard to the supervision of loading by the Department which has been advocated by several witnesses, the Board cannot see its way to endorse the advisability of such supervision. Theoretically it may be desirable, but in practice there are too many difficulties and objections, and the Board would therefore throw the responsibility of overcrowding on owners, and limits its recommendation to the following:—

Officer in charge at loading yards to record his opinion as to loading and condition of stock.

65. That the Department order the officer at the loading stations to take note of every consignment and to record in the contract book before it is signed by the owner or his representative, the condition of the stock so far as his judgment allows, and also his opinion as to whether a proper number of animals are loaded in each truck.

Division of sheep trucks. Centre division approved. 66. As regards the "advisability of dividing the sheep trucks" a large majority of witnesses have expressed the opinion that a centre division in both floors would be a great improvement.

Duplication of races required.

67. Some witnesses were of opinion that subdivision would involve extra labour or delays at time of loading but considered that such objection would cease to apply if the loading races were duplicated. This duplication, involving an expenditure of about £90 at each of the more important yards, is a necessity attendant on division, to obviate twice shifting the trucks and getting the sheep to run three separate times.

Cost of duplication.

68. The probable cost of dividing the vans by vertical bars would be £7 per van.

Cost of dividing trucks.

Board recommends
division of sheep trucks
and duplicating of races.

69. The Board recommends that this alteration in the vans and loading races be carried out.

Division of cattle trucks:

70. The Board has inquired of many witnesses their opinion as to the advisability of attempting to subdivide cattle trucks, so as to separate a truck into compartments, each containing two or more bullocks.

Witnesses not in favour of dividing cattle trucks

71. The general opinion is that any such subdivision would lead to trouble and delay in loading and lessen the number of animals which each truck could carry and should not therefore be attempted, especially as the new box truck seems to meet all practical requirements.

72.

72. Under these circumstances the Board has not deemed it advisable to recommend any system of Board does not recommend divi divisions in cattle trucks.

73. The Board viewed a long American bogie truck with divisions recently imported from America. American cattle truck recently imported. This truck is provided with water troughs and movable divisions which require to be lowered by a person entering the truck after an animal has been loaded. Manifestly such an arrangement could only be used in dealing with very tame animals and is altogether unsuited for the wild cattle of Australia.

- 74. Mr. Dawson submitted drawings of a cattle truck with movable divisions to be worked up Mr. Dawson's truck. from one end of the truck by means of a rack and pinion, each division to be worked up separately after two or more animals, according to the number desired to be placed together, had been loaded. There is some gear about this truck which, simple as it is, would be in danger of getting out of order and choked by dirt and droppings and thus might become difficult to work, or from other causes not work with that extreme simplicity which is absolutely necessary in a cattle truck. Still the Board have pleasure in recording their appreciation of much ingenuity in this plan and had any division of trucks seemed necessary would have recommended Mr. Dawson's design as the best under their notice.
- 75. Mr. Dawson also submitted a plan for movable divisions in sheep-vans, but the Board is of Mr Dawson's plan of opinion that a fixed division in the centre of the truck is the simplest and most satisfactory way of dividing sheep vans. the vans.
- 76. Mr. Dawson also proposed a movable platform for facilitating the loading of stock, and in Mr. Dawson's movable platform and decoy connection with the same suggested the use of a decoy mirror, but the Board does not find itself able to mirror favour this idea.
- 77. The Board had submitted to it a model with description of a combined cattle truck, sheep-van, Mr. Evans' combined and goods' truck, designed by Mr. Evans, the Goods Superintendent of the N.S.W. Railways. In this truck, truck the boxing in of the sides is made as flaps hinged half-way up the sides and capable of being raised into a horizontal position so as to form an upper deck for sheep. The flaps in this position are supported in the centre by a beam the length of the truck, which is lowered by means of a handle at the top of the truck, working a worm wheel and screw.

78. The Board believes that the invention of a good and simple convertible sheep-van and cattle A convertible sheep and truck is of the greatest importance and worthy of every encouragement by the Department as being likely great desideratum. to materially economize the quantity of rolling stock, and as offering greater facilities for the conduct of the stock traffic.

79. The Board considers Mr. Evans to be deserving of great credit for having gone far towards Board considers Mr. Evans deserving of great credit.

Board considers Mr. Evans deserving of great credit. realizing the idea, and for the display of considerable ingenuity in his proposed truck.

80. The Board recommends the construction by the Department of four (4) or five (5) of Mr. Board recommends trial of Mr. Evans' truck with trucks. but the following matters in which the truck is wanting should receive his attention:— Evans' trucks, but the following matters in which the truck is wanting should receive his attention:-

- 1. Some more effective arrangement for raising the flaps forming the upper deck.
- 2. Some means of giving efficient foot-hold to sheep on the upper deck, without such means rubbing or otherwise injuring cattle when the flaps are down and the truck in use as a cattle waggon.
- 3. Some means of ventilating and getting rid of droppings and urine from the upper deck.
- 4. Divisions in the upper and lower decks.
- 5. An alteration in the heavy bottom door in the centre—such a door having been found too heavy and inconvenient in the old cattle trucks.
- 6. That the truck complete have the full inside dimensions of the box cattle trucks, and shall not exceed 6 tons 14 cwt. in weight.
- 81. The matter of "Special Pick-up Trains" to run on certain fixed days of the week, for the Pick-up trains. purpose of picking up small consignments of stock at different stations, is one recommended by several
- 82. Such an arrangement would be undoubtedly advantageous in preventing the mixing of stock Advantageous to stock, with goods, and ensure the consignments a more speedy run into market; but there are difficulties in the Department way, and so nearly a practical certainty that such trains would not pay, as to place it out of the power mend pick-up trains. of the Board to recommend.

83. In the matter of speed of stock trains, all witnesses have advocated an increase in speed as the best and surest means of overcoming the difficulties connected with the stock traffic; but the majority outs witnesses are doubtful of the ability of the trade to pay a higher rate of freight for such advantage.

84. Increased speed of stock trains advocated by witnesses are doubtful of the ability of the trade to pay a higher rate of freight for such advantage.

Speed of stock trains in New South Wales.

84. The Board has carefully considered this subject, and finds that in the matter of speed of trains, excepting on the North-western line, where the speed requires to be accelerated, the Department is very little behind any railway of which it has any information, and if the very heavy gradients and sharp curves be considered the running is practically better than elsewhere.

Speed and weight of stock trains.

- Speed and weight of mail trains.
 Time of stock and mail trains from Nyngan to Homebush.
 Special circumstances
 only warrant a higher
 rate of speed.
- increase.
 Stock carried abnormally long distances through a semi-tropical climate. Wild nature of animals prevents feeding and watering in trucks. Board recommends pard recommends ghest practicable rate speed
- 85. At the present time, inclusive of stoppages, the time-table speed of stock trains, whose weight may be taken at 300 tons, is 22 miles an hour over the flat country, such as between Nyngan and Dubbo and Hay and Junee, and 14 miles an hour over the heavier portions of the line, where the load is about 150 tons. The speed of the mail trains, whose weight may be taken at 80 tons, is, over the same lines, 30 miles and 20 miles respectively. The time occupied by a stock train running from Nyngan to Homebush at the above rates of speed is 25 hours, and by a mail train $17\frac{1}{2}$ hours.
- 86. The Board thinks that only special circumstances would warrant the Department in attempting Special circumstances exist in N. S. Wales.
 Importance of meat trade a higher rate of speed than that now in force, but is of opinion that a fair claim to there being in this with Europe.

 Stock trade likely to Colony special circumstances which do not obtain elsewhere may be made out. Already in consequence of the trade with Europe in frozen and preserved meat, the stock trade is one of the most important in the Colony, and its importance promises to increase in the future. Stock has to be carried abnormally long distances, through a long stretch of almost tropical country, and the wild nature of the animals preventing the adoption of any means of feed or watering on the journey as is practised in other countries, seems to afford a special reason for the Department making a strenuous effort to run stock trains with the least possible delay at stations and at the highest speed practicable.

ROBT. B. WILKINSON, Chairman. ALLAN GEE. DAVID KIRKCALDIE. THOS. MIDELTON. FRED. M. AVERN.

APPENDIX. Stock received at Homebush for twelve months ending 31st December, 1833.

Week ending.	Cattle.	Sheep.	Horses.	Week ending.	Cattle.	Sheep.	Horses.
1883.				1883.			
6 January	1,779	14,088	32	21 July	969	18,690	
0 "	1,817	24,093	78	28 ,,	773	16,528	,
·Λ	1,069	24,598	36	4 August	1,060	10,865	
17 °	1,211	14,879	42	11 "	772	18,964	2
3 February	1,842	21,550	35	18 ",	362	15,521	
^	1,325	22,860	39	25 ,,	$1,\!219$	19,406	
H ''	1,483	18,381	31	1 September	366	11,183	
· / /	693	26,738	20	o = .	859	10,203	
24 ,,	1,265	9,858		15 ,,	1,439	15,494	
	1,203 $1,434$	23,775		22 ,,	780	15,562	4
.0, ,,	1,453	22,044	13	1.90	640	11,865	2
	1,433 $1,028$	11.384	50	6 October	876	15,193	
24 ,,	485	10,675		1 10	738	22,713	
31 ,,	696	20,916	20	1 00 "	1,402	16,233	4
	810	18,676		97 "	535	37,025	7
	1,172	12,768	24	3 November	530	23,413	
21 ,,	885	16,209	42	10	879	23,423	1
28 ,,	696	, 15,162		17 "	833	22,481	
5 May			20	94. "	991	28,057	
12 ,,		8,639 $12,625$	33	1 December	1,126	38,398	8
19 "	1,643	12,020		10'	1,104	31,713	11
26 _ ,, '	1,053	11,713	9	ا دوا	313	34,094	5
2 June	1,460	21,645		11 "	659	15,572	1
9 "	662	18,009	25	90 "	614	2,007	`
L6 ,,	1,308	21,425	26	91 "	385	500	
23 "	994	10,736	58 22	31 ,,	909	500	
30 "	115	11,997	j-	,	51,993	944,346	1,16
7 July	995	10,677			91,995	044,040	1,1
14 "	1,063	13,123	4	N .			

It will thus be seen that, as regards sheep, the lightest week—if the one between Christmas and new year is excluded, when the number was only 2,007—was that which ended on May 12th, when the number was 8,639, and the heaviest on December 1st, when the number was 38,398.

During 18 weeks the number did not exceed 15,000

,,	15	,,	` ,,	was betwee	en 15,000 and 20,000
,,	13	"	,,	**	20,000 ,, 25,000
"	2	"	,,	,,	25,000 ,, 30,000
,,	2	"	,, '	,,,	30,000 ,, 35,000
. 33	2	,,	"	was over	35,000

Average from 1st January till 20th October, 16,373; and from the latter date till 15th December, 29,826. From the 1st January till the 5th April, 1884, the average number has been 21,315.

Of course this is irrespective of stock conveyed to other stations than Homebush.

Minute of Secretary for Public Works.

WILL the Commissioner favour me with his views upon the suggestions made by the Board.

F.A.W., 5/5/84.

See my minute herewith.—Chas. A. G., 15/5/84.

The Commissioner for Railways to The Secretary for Public Works.

Minute of the Commissioner for Railways on the Report of the Live Stock Board.

In moving, on the 19th December last, for the appointment of a Board to inquire into the way in which the carriage of live stock by rail was conducted, with the view of finding out and removing "existing irregularities," Mr. Wilkinson confined his remarks entirely to the alleged insufficient supply of trucks for the conveyance of the stock, whereby vexatious delays and considerable loss were entailed upon stock-owners in getting their stock to market; but as, in the course of previous discussions, and in the discussion that ensued on that occasion, as well as by numerous representations which appeared in the public Press, strictures were made regarding what was called the "mismanagement of the traffic," to which cause the excessive number of deaths amongst the stock was attributed, it was determined that the Board should not be restricted in the scope of its inquiry, but that the fullest possible information should be elicited, so as to ascertain in what way an improvement could be effected.

As Mr. Wilkinson expressed his willingness to sit upon the Board, he was appointed thereto (and subsequently elected Chairman), together with Mr. Gee, the General Manager of the Sydney Meatpreserving Company, who from his extensive experience, was justly considered well qualified to aid materially in the thorough investigation of the subject.

The other three members of the Board were officers of the Department, representing the Traffic, Locomotive, and Permanent Way Branches.

The Board has dealt with the subject very exhaustively, and it is gratifying to find that, in effect, it exonerates the Department from the charges that have been so freely made against it.

With reference to Mr. Wilkinson's contention that the stock of trucks is insufficient for the traffic, it is admitted that for about $2\frac{1}{2}$ months at the end of last year the supply of sheep vans was not equal to the demand; but it is also admitted by the Board, and by all the witnesses who were examined, that, in consequence of the severe drought through which the Colony has passed, the sheep traffic during that period was very much greater than ever it had been before—the owners of the sheep having no other option than either to sacrifice them in an unfavourable market or lose them altogether through starvation.

I have no doubt that, but for the abnormal magnitude of the sheep traffic during the period named, there would have been no cause for complaint of the insufficiency of trucks. The supply of rolling stock of all kinds has been carefully seen to from time to time, and I submit that due regard has been paid to the requirements of the sheep traffic, and further, that even if the exceptional season we have passed through

through could have been foreseen, it is a question whether the stock of trucks should have been increased (particularly as sheep vans cannot be utilized for any other kind of traffic) to meet a traffic which is admitted on all hands to have been abnormal, and which in excess of our ability to cope with it only lasted for a few weeks.

Reference to the Appendix to the Report of the Board shows how the traffic fluctuated during the year.

From the beginning of January till the 20th October, 1883, the average weekly number of sheep received at Homebush was 16,373, while from the latter date till the 15th December the number was as high as 29,826 per week. It must of course be taken for granted that if the Department was able to convey the larger number for eight weeks in the year it could have done so for the whole fifty-two, so that for five-sixths of the year the stock of vans was considerably in excess of actual requirements, and I may add that since the beginning of the present year the supply of vans has exceeded the demand.

Although the Board has recommended that the present stock of vans be increased by ten per cent. I cannot admit that such an increase is necessary for the present traffic, but in view of the great increase that may be expected on the extension of the lines, orders were given before Mr. Wilkinson's motion was brought before Parliament for an additional number which will increase the present supply by twenty per cent., and some of these vans have already been supplied.

Before leaving this part of the question I should mention that, large as the sheep traffic was from the middle of October till the middle of December, the carrying capabilities of the Department were not even then legitimately tested, because it not unfrequently happened that vans supplied at stations in accordance with orders received were not made use of, presumably because of the fluctuating markets, and but for that cause other stock-owners would not have been subjected to disappointment. In this respect some of the witnesses admitted having, from causes which they say were beyond their control, transgressed to a greater extent (in not having been able to load the vans at the appointed time) than they were inconvenienced by the Department.

I may add that, as regards cattle, the supply of cattle trucks has been more than equal to the demand. The Board is silent on this point, and it may therefore be assumed that it is of that opinion also.

The Board recommends the introduction of the system of deposits (to be forfeited if the trucks are not used) when ordering trucks, and expresses the belief, in which I concur, that such a system will greatly increase the capabilities of the present rolling stock.

I may point out that this system is not new to us. It was in full operation some years ago, and was only discontinued at the repeated requests of the stock agents, who urged that the infliction of the fines pressed very severely upon the owners of stock, who were unable from unforeseen causes to keep their engagements with the Department, and expressed their willingness to abide by occasional disappointments at the hands of the Department if the system were abandoned.

Even now the witnesses are not unanimous on the point. Several of them, notably one who is said to have been one of, if not the largest importer of stock into Homebush market for the last few years, would rather have things remain as they are than revert to the system of deposits.

In view, however, of the opinions of the majority of the witnesses, and of the recommendation of the Board, I have no hesitation in advocating the re-adoption of the deposit system. I believe it to be a good system, and one that would not have been discontinued but for pressure from the very class which now recommends its introduction.

The officers of the Department have over and over again stated that the primary causes of death amongst live stock during transit were due to overcrowding and the exhaustion of the animals before being trucked. The Report of the Board very emphatically confirms such conclusions, and expresses the opinion, which has also been held by our officers, that however desirable it may be that the loading of trucks should be regulated by the Railway staff, there are too many difficulties in the way to justify them in recommending the adoption of such a course, and they therefore leave the responsibility, as it has always been left, on the shoulders of the owners or their representatives.

The recommendation of the Board that the condition of the stock, after being trucked, should be noted by the officer in charge at the loading station, and entered on the contract note, is open to some objections, which may be stated as follows:—

1st. It would bring the station-master or officer in charge into direct contest with the senders or their representatives, and probably, where a difference of opinion existed, as it may be assumed would not unfrequently be the case, engender a feeling of antagonism and hostility.

- 2nd. The probability of the owner or his representative refusing to sign the contract should it on the face of it bear remarks about the stock being, in the opinion of the railway officials, over-crowded, exhausted, or otherwise in bad order.
- 3rd. The probability that, should the station-master omit for any reason to note his opinions in the face of the contract, advantage would be taken of the omission to make the Department responsible, should any of the animals die from any cause in transit.

It is worthy of special remark, as testifying to the low rate of mortality amongst stock which is not overcrowded, that one firm received 37,000 sheep at Homebush during last year, only twenty of which were dead on arrival, and out of that number it is admitted that ten died from over-crowding in one consignment of 1,600, so that out of the remaining 35,400 the deaths only numbered 1 in 3,540, while in the case of other consignments where attention was not paid to the evils of overcrowding the mortality was 1 in 480. Considering the great length of the journeys most of the sheep are conveyed, even 1 in 480 does not seem an excessive mortality; but when it is compared with 1 in 3,540 the evil of overcrowding is at once apparent; it is equal to over 7 to 1 of all the other causes put together. I do not know how this bill of mortality compares with the deaths which occur in the transit of stock elsewhere, but we are told by an eminent authority that "there is no flock, however cared and tended, but one dead lamb is there," and I think it will be conceded that one dead in a flock of 3,540 leaves but little to complain of.

The attention of the Locomotive Engineer will be drawn to the representation of the Board respecting the effect of careless driving, and every means will be used to provide a remedy; but it is worthy of note that the witnesses admit that there has been a great improvement in this respect since the introduction of the screw couplings.

As the Board points out, the mortality amongst cattle is due, more than in the case of sheep, to long journeys and scarcity of food and water before they reach the trucks, and as they are in many cases trucked without obtaining rest or water it is not to be wondered at that some of the animals fall or lie down from sheer exhaustion before they have long started on their journey, and not only get trampled to death themselves, but are the cause of others falling and meeting a similar fate.

It may be, and very probably is the case, that there is no opportunity in dry seasons of getting water within a reasonable distance of the loading station, and that the best course is to get the stock to their destination as quickly as possible; but if that be so, I contend that it is more than ever necessary that the animals should not be overcrowded.

Although the Board has recommended the division of the sheep vans, I see from the evidence that the witnesses are not at all unanimous on the point. I will not, however, deny the advantages of divided spaces in the vans, but I think it is apparent that if sheep can be carried long distances with an average mortality not exceeding 1 in 3,540, the division of the vans is not a very urgent nor an indispensable measure of improvement.

The cost of dividing the vans is estimated at £7 each; there are at present 389 of them, and the immediate cost will be £2,723; in addition to this it will be necessary to duplicate the races at the more important trucking stations (say at those loading 20,000 and upwards per annum, of which there are at present twenty-five) the cost of this work is estimated at £90 for each yard, swelling the total expenditure for this service to £4,973.

While I do not regard the carrying out of the work as an absolute necessity, I am not disposed to oppose the recommendation of the Board, and the Government will no doubt give effect to it.

The only other recommendation that has been made as regards the construction of the new sheep vans is the introduction of a false floor to the upper deck, so that better ventilation and cleanliness will be obtained.

The recommendation will of course be adopted in the construction of new vans, but from inquiries I have made I am afraid it will not be possible to effect the improvement in the present vans.

I confess I am not surprised at the Board objecting to the old style of cattle wagons, because they are undoubtedly too narrow for large cattle, such as those that come from Queensland and the Western interior of this Colony, and they are also too open round the sides, although, it may be stated, the latter defect is being remedied. The recommendation of the Board, that the use of these trucks be confined to the districts between Sydney and Goulburn and Bathurst, will be complied with; indeed, I find that the Traffic Manager, twelve months ago, issued instructions to this effect.

Some years ago I devoted some time and attention to the consideration of the best style of wagon to adopt, and designed the cattle truck which, it is satisfactory to know, is so highly spoken of by all the witnesses. All new cattle trucks will, of course, be built upon this design, and due attention will be given to the alterations suggested by the Board, not only in the new but the existing stock, as far as practicable.

It will be observed that the division of cattle trucks is regarded by the Board as unnecessary. In deference to the wish of some persons who had travelled in America, a cattle truck was imported from that country a few months ago with a division for each animal, but all the stock-owners and agents who have seen it regard it as I regarded it, and so stated when the order was given, as only suitable for stall-fed animals and not for the wild cattle of Australia. It is therefore being altered.

A great deal has been said from time to time about the desirability of having all live stock trucks fitted with screw couplings, so as to save the jerking in transit to which trucks with the ordinary chains are so subject. As a matter of fact instructions were issued some years ago that this should be done, and with almost immaterial exception all the trucks have been so fitted; the remaining few trucks with chain couplers will have screw couplers substituted at once.

As the Board points out, this is an improvement which has not been introduced to the same extent on any other railway. I am aware that cattle trucks are so fitted in Victoria, but not sheep vans, and believe I am right in stating that on no British, Continental, or American railway are screw couplings provided for live stock trucks.

The Board has given due attention to the proposal that stock should be watered in transit, either by providing troughs in the trucks, or by unloading, watering and resting the stock at some suitable intermediate station, and has come to the conclusion that neither plan is practicable. The Board recommends, however, the fencing in and strict conservation of existing reserves at trucking stations, and the creation of others where they do not already exist, and also the supply of water at those stations where there is not a natural supply within a distance of 3 miles. No doubt such facilities would be of great advantage to stock-owners, but the expense would be so great that I cannot possibly recommend it, unless indeed, the rates are increased to such an extent as to yield a fair return upon the outlay. Attached will be found a comparative statement of rates in force here, and at other places, from which it will be seen that notwithstanding the smaller load we are able to haul, owing to the severe gradients of the lines, our charges for cheapness compare favourably with those charged elsewhere.

About eighteen months ago a proposal was made that the reserve at Wagga Wagga should be fenced in, and a couple of dams made, but upon inquiry it was found that the work would cost fully £1,200; and it was not considered at that time that the expenditure would be justified in view of the low rates charged. If reserves of something like 2,000 acres (and I presume little less would do at the principal trucking stations) were provided at each of the stations, at which more than 20,000 sheep are trucked in the year, the cost for fencing and providing water would be approximately £30,000.

As regards the speed of trains, I can only endorse the opinion expressed by the Board, that the time occupied in the transit of our live stock trains compares most favourably with the like running in any part of the world, although it might be reasonably expected that, considering the great lengths of our single lines, the number of trains running in each direction, and the very heavy gradients to be contended with, the loss of time would be greater here than where such obstructions to speedy running do not exist.

Even for the delays that do occur the Department is not always responsible, because, as stated by the Board, it frequently happens that stock is not trucked in time to permit of the trains leaving the loading stations at the appointed hour; and the result is that such trains must either be subjected to further delays at intermediate stations, or the whole of the traffic be upset to give them an uninterrupted passage; the adoption of the latter course would be necessarily out of the question.

I need hardly say that no opportunity will be lost for reducing the time occupied in transit, but to run to the *present* time-table the engine-load had to be diminished: The train earnings, I need hardly point out, were correspondingly reduced.

The proposal of the Board to increase the crossing-places is one which, if effect be given to it, will involve a very large expenditure, and would only be of benefit when trains are running late, because the time-tables are so compiled as to reduce to a minimum delays at crossing stations. Moreover the introduction of the deposit system, as recommended by the Board, will render, in my opinion, additional crossing-places unnecessary: It has been shown that the delays that have arisen have almost invariably been due to the senders failing to have their stock loaded at the appointed hour; and as one of the conditions of the deposit system will be that trains must start to time, whether the stock is loaded or not, there will be no delays in reaching the appointed crossing-places, except those due, which are few and far between, to the ordinary exigencies of traffic.

Each additional crossing-place would entail an outlay of about £1,000, irrespective of excavations or filling-up where such work is necessary; and the annual expenditure for wages, &c., with interest on the outlay, would amount to about £350. For thirty additional crossing-places the capital outlay would be at least £50,000, and expenses of maintenance and working £12,000 a year. I can see no necessity or even justification for such an outlay, and cannot support the proposal. Where, however, it is found that additional crossing-places are necessary for the general traffic they will be provided.

The proposal of the Board that the same quality of fuel should be supplied to the engines of live stock trains as to passenger engines will involve a sensible increase in the expenditure, as it means the substitution, in a great measure, of Newcastle for local coal; but I will give directions, in deference to the views of the Board, that coal only of the best quality is to be used for engines of stock trains.

The Department has been so often charged with the loss of sheep in transit, presumably from theft, that it is gratifying to find the Board express serious doubts as to whether any sheep were ever lost on the railway at all. All the efforts made by the Department to trace theft were unsuccessful. In any case, the Board has emphatically expressed the opinion that no sheep have been lost since the introduction some years ago of the system of sealing the vans, and that this system of securing the doors cannot be improved upon.

The cleansing of the trucks, to which attention has been called by the Board as having been to some extent disregarded, will be attended to.

The shunting of trucks containing live stock is avoided as much as possible, and orders were given long ago that, when conveyed on goods trains, they should always be kept next the guard's van, and the goods trucks next the engine so that they would not be subjected to any shunting that might be necessary at intermediate stations on the journey. It appears that this rule has in some instances been disregarded, and orders will be re-issued for its proper observance. I may here state that goods are never put on a train when a full load of live stock can be obtained.

The statement has often been made, and as often denied, that stock trains have been delayed, while precedence has been given to goods trains. It is satisfactory to find that none of the witnesses examined by the Board could point to a single infraction of the rule of the Department which requires that stock trains are in all cases to have priority of transit of goods trains. The Board also admits that the splitting up of trains on the journey is unavoidable, owing to the varying gradients.

The Board refers in disparaging terms to the original design of the stock-yards at Nevertire and Nyngan. The defects were painfully manifest to those officers of the Department who had the practical working of the yards, and I gave directions for alterations to be made. The Board admits that the yards as altered are satisfactory, with the exception that larger receiving yards are required. This recommendation, as well as those referring to the design of stock-yards generally, will receive due attention, but I must say that, in view of the extension of the Western line at an early date, I am not at present prepared to recommend the expense that would be involved in increasing the receiving-yards at Nyngan and Nevertire, but if further experience proves the additional accommodation to be necessary it will of course be provided.

I invite the attention of the Minister to the recommendation of the Board that more attention should be given than hitherto to the designing of stock-yards on new lines.

The recommendation of the Board that more attention be paid to the forwarding of telegraphic advices to the receiving stations, in order that consignees may be apprised, will be attended to. In giving this concession originally I was aware that such advices were not sent on any other railways, the consignees being left to be apprised by the consignors. With a desire, however, to afford the public the fullest facilities, I gave directions for the information to be furnished; and although the advice has been sometimes omitted, such omissions have been the exception and not the rule. I believe that there has been very little to complain of in regard to the way in which this concession has been carried out.

The Board has recommended the construction of four of Mr. Evans' combination trucks, with certain improvements which they point out, and I endorse the recommendation, with the addition that a sufficient number of these trucks be built to form a train load—say fourteen. In this way a more effectual trial can be given to them.

It seldom happens that there is a large cattle and sheep traffic at the same time, and a suitable combination truck would therefore effect an immense saving to the Department; indeed some years ago so satisfied was I on this point that I obtained the Minister's approval for the construction of a combination car, designed by an officer of the Engineer for Existing Lines Branch, but it failed owing to the imperfection of some of the working parts. Mr. Evans, in his design, seems to have overcome this difficulty.

I think I have now dealt with all the matters referred to by the Board.

CH. A. GOODCHAP.

15/5/84.

839-C

Minute

Minute of Secretary for Public Works.

I entirely concur with the Commissioner in this Report, with the exception that I do not think there is sufficient evidence to justify the Department in the expense of dividing the sheep trucks, the cost of which would be large, and I fail to see that any substantial benefit would accrue from it.—F.A.W., 30/5/84.

COMPARISON OF LIVE STOCK RATES.

		•	CATTLE.			
Railways.		Distance.	Rate per truck.	No. of stock per truck.	Rate per truck per mile.	Rate per head per mile.
New South Wales	· ··· ·	400 miles	£ s. d. 9`10 0 11 13 4	9 cattle 9 do	d. 5°7 7·0	d. .63 3 .777
English and Scotch		do	10, 0 0	8 do	6.0	750
	<u>.</u> .		SHEEP.			
New South Wales Victoria	····	400 miles do	7 17 1 11 13 4 8 6 8	100 sheep 100 do 40 do	4·7 7·0 5·0	·047 ·070 ·125
English and Scotch	•••	do	000	40 uo	00	. 120

Sydney: Thomas Richards, Government Printer.-1884

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY LOAN VOTES.

(PARTICULARS OF EXPENDITURE.)

Ordered by the Legislative Assembly to be printed, 16 July, 1884.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 28 November, 1883, That there be laid upon the Table of this House,—

- "(1.) A tabulated Return showing the amounts expended from Railway
- "Loan Votes after the Railways or Sections thereof have been opened for
- "traffic and delivered over to the Engineer for Existing Lines, the Return
- "to show the expenditure for each year separately from the 1st of January,
- "1873, to the 31st December, 1882, exclusive of expenditure sanctioned by the Engineer-in-Chief for Railways."
- "(2.) A like Return, and for the same period, showing the expenditure
- "sanctioned by the Engineer-in-Chief for Railways on Lines opened for "traffic."

(Mr. Poole.)

RAILWAY LOAN VOTES.

RETURN showing Expenditure sanctioned by Engineer-in-Chief from 1st January, 1873, to 31st December, 1882, out of Railway Votes, after lines or sections thereof were opened for traffic.

Year.	Votes.			Engineering Expenses.	Cost of Land.	Construction, Bridges, Sidings, Tools, Signals, Turntables, &c.	Stations and Buildings.	Cost of Main Lines, Rails, &c.	Water Supply for Engines.	Total.
1873 ,, ,, ,, ,, ,,	Completion of Lines— SM. House, further sum Extension to Bathurst. New Station, Redfern Relaying Line, Sydney to Parramatta New Machine-shop, Newcastle Station buildings, West Maitland Carriage-shed, Newcastle Extension to Goulburn	36 Vic. 2	257 \ 230,000 30,500 35,000 13,000 2,000 5,000 1;000,000	£ s. d.	£ s. di	£ s. d. 16,177 4 5 4,262 13 10 101 17 10 938 18 4 149 13 5 21,630 7 10	£ s. d. 5 16 6 4,089 16 5 16,920 0 2	£ s. d.	£ s. d. 665 12 11 665 12 11	£ s. d. 5 16 6 21,138 5 11 21,182 14 0 77 10 4 165 8 8 1,069 2 7 3,591 2 5 149 13 5
1874	Carriage-shed, Newcastle New Station, Redfern Completion do. Station buildings, W. Maitland Extension to Bathurst. New Machine-shop, Newcastle Excavating, Sydney Yard Land, &c., Darling Harbour Extension to Murrurundi	25 Vic. 19	5,000 30,500 6,000 2,000 230,000 .13,000 5,000 25,000 400,000			92 9 3 271 13 2 1,465 5 1 	7 2 6 45 4 1 3,982 13 7 807 7 7 2,842 2 3 586 10 2	3 6 0		99 11 9 316 17 3 5,447 18 8 807 7 7 2 3 4 3,086 16 0 .1,677 13 2 4,504 4 4 165 9 11
1875	Completion of new Station, Redfern New Machine-shop, Newcastle Land, &c., Darling Harbour Excavating, Sydney Yard Enlarging Machine-shop, Sydney Engine-sheds Completion to Kelso Extension to Murrurundi Goulburn to Wagga Wagga Kelso to Bathurst	38 Vic. 2	6,000 13,000 25,000 5,000 8,000 10,000 45,000 400,000 1,131,000 60,000	2 2 0	2,077 4 0 	7,833 15 10 21 15 6 17 7 3 8,769 2 2 1,544 6 1	169 12 6 1,504 9 0 	3,564 3 8	832 9 7	191 8 0 1,521 16 3 10,848 8 2 2,401 11 8 2,292 7 8 3,512 6 5 3,602 4 11 267 6 7 1,795 11 11 3 12 8
1876 ,, ,, ,,	Excavating, Sydney Yard Land, &c., Darling Harbour Engine-sheds Engine Sheds, Richmond Enlarging Machine-shop, Sydney Goulburn to Wagga Wagga Extension to Murrurundi	34 Vic. 2	5,000 25,000 10,000 3,000 8,000 1,131,000 400,000	734 18 8	2,425 0 8 	1,782 11 2	90 6 8 	5,364 14 1	1,677 7 7	90 6 8 4,207 11-10 1,196 9 9 465 0 11 520 19 10 38,306 9 4 253 9 9

Up to October, 1876, Engineer-in-Chief had charge of existing Lines.

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Year.	Votes,			Engineering Expenses.	Cost of Land.	Construction, Bridges, Sidings, Tools, Signals, Turntables, &c.	Stations and Buildings.	Cost of Main Lines, Rails, &c.	Water Supply for Engines.	Total.
			£	£ s. d.	£ s. d.	£ s. d.	£'s.d.	£ s. d.	£ s. d.	£ s. d.
1876 ,, ,,	Completion to Kelso Kelso to Bathurst New Machine-shop, Newcastle Bathurst to Orange.	38 Vic. 2	45,000 60,000 13,000 279,000	61 13 0 8 5 0	609 15 0	4,552 3 0 71 10 4	7,208 11 11 3,504 11 6 89 11 1 3,054 9 3	5 9 2	300 10 4 15 13 5	12,128 7 5 4,209 15 3 89 11 1 4,301 18 7
1877	Clayllyny to Warra Warra			804 16 8	8,419 2 7	19,765 14 4	29,416 12 3	5,370 3 3	,1,993 11 4	65,770 0 5
,,	Goulburn to Wagga Wagga Bathurst to Orange	36 Vic. 17 36 Vic. 17 41 Vic. 4	1,131,000 $279,000$ $77,000$	345 19 10 225 1 9	7,028 1 7 4,293 5 10	12,007 18 8 18,349 0 2	5,884 16 0 18,040 17 3	112 9 7 1,070 7 4	864 8 0 528 0 0	26,243 13 8 42,506 12 4
), ······), ······	Completion to Bathurst Murrurundi to Tamworth New Station, Newcastle	41 Vic. 4 36 Vic. 17 34 Vic. 2	20,352 361,500 6,000		91 11 2 315 18 11	991 15 7 35 6 8	2,058 7 4	•••••••	664 0 0 580 9 11	2,422 13 11 896 8 10 2,093 14 0
1070	AT Chart AT		Ę	571 1 7	11,728 17 6	31,384 1 I	26,659 7 9	1,182 16 11	2,636 17 11	74,163 2 9
,	New Station, Newcastle	34 Vic. 2 36 Vic. 17 41 Vic. 4	6,000 $1,131,000$ $30,000$	783 0 2	2,724 10 0	24,568 3 0	3,277 6 4 11,322 15 2	123 19 10	3,719 17 8	3,277 6 4 43,242 5 10
», ······	Bathurst to Orange Murrurundi to Tamworth	41 Vic. 4	77,000 361,500 \	418 17 5	1,156 10 5 1,285 13 6	400 0 0 15,312 9 5	112 14 0	•••••••••••••••••••••••••••••••••••••••		1,669 4 5
,,	Completion to Bathurst	41 Vic. 4 41 Vic. 4 38 Vic. 2	80,000 § 20,352 50,000		1,233 13 0 1,42 13 0 6,447 2 0		2,634 19 6	22 1 5	969 2 6	20,643 3 9 142 13 0 $6,447$ 2 0
	·		£	1,201 17 7	11,756 8 11	40,280 12 5	17,347 15 0	146 1 3	4,689 0 2	75,421 15 4
, , ,	New Station, Newcastle Goulburn to Wagga Wagga Murrurundi to Tamworth Bathurst to Orange Worris Creek to Gunnedah Bullock Island Railway	34 Vic. 2	6,000 100,000 80,000 77,000 220,000 22,000 50,000	748 13 2 434 4 8 20 5 6 158 2 3	2,201 8 5 26 12 8 2,253 15 8 2,010 13 5	8,290 1 6 7,956 15 11 250 0 0 5,800 0 0	101 3 9 1,508 0 3 2,812 4 9 2,602 13 9	90 14 3 129 <u>1</u> 0 0	45 15 9 563 8 1 401 7 1	101 3 9 12,793 19 1 11,884 0 4 2,524 1 2 11,102 6 6
"	,	00 vic. 4	50,000 £	1,361 5 7	6,602 0 0	99 906 17 . 5	7.004 9 0			109 9 10
1880 ,, ,, ,, ,, ,,	Murrurundi to Tamworth New Station, Newcastle Wagga Wagga to Albury Orange to Dubbo	48 Vic. 11	100,000 22,000 80,000 6,000 680,000 350,000 40,000 77,000	33 19 7 3 3 0 	1,598 8 0 1,899 18 11 	22,296 17 5 787 8 9 644 1 3 31,615 3 1 	7,024 2 6 21 17 0 50 6 4 4,740 11 6 4,766 6 7	220 4 3 0 11 7 2,916 8 6 2,767 6 11 6,728 14 8	1,010 10 11 92 9 7 12 5 2	38,515 0 8 2,512 17 6 2,578 2 4 34,534 14 7 50 6 4 17,140 7 11 37,816 1 5 361 10 6
	-		±	835 7 0	4,457 13 4	64,844 9 2	9,579 1 5	12,413 1 8	2,864 8 0	94,994 0 7
					<u> </u>	(

Year.	Votes.	Engineering Expenses.	Cost of Land.	Construction, Bridges, Sidings, Tools, Signals, Turntables, &c.	Stations and Buildings.	Cost of Main Lines, Rails, &c.	Water Supply for Engines.	Total.	
' 1881 ", ", ", ",	Junee to Narrandera Goulburn to Wagga Wagga Murrurundi to Tamworth Completion to Bathurst	44 Vic. 28	,000 769 9 8 ,000 36 18 10 ,000	£ s. d. 1,047 17 4 780 13 9 447 16 3 38 9 4 194 8 3 3,220 17 3	£ s. d. 44,879 7 10 15,962 15 4 36,990 19 6 0 17 2	£ s. d. 28,110 0 1 8,138 14 6 17,019 14 3	£ s. d. 5,908 10 11 93 16 8 101 16 5 7,277 5 11 777 3 4 	£ s. d. 6,167 19 2 2,189 3 3 2,238 12 7 33 17 4	£ s. d. 88,022 18 1 28,466 11 2 57,568 8 8 7,387 8 7 971 11 7 275 17 3 3,353 5 1
1882	Orange to Dubbo Murrurundi to Tamworth Wagga Wagga to Albury Bathurst to Orange Dubbo to vicinity of Bourke Narrandera to Hay Junee to Narrandera Tamworth to Tenterfield	41 Vic. 4	,000 121 5 9 ,000 329 5 8 ,000 2 0 0 ,000 17 0 0 ,000 968 16 3 ,000 43 18 4 ,000 681 15 3 ,000	8 17 2 85 2 11 610 0 0 699 8 0 143 2 3 281 13 9 8,804 12 8 961 4 10 4,838 17 2 897 12 0 119 8 4 139 9 0 17,589 8 1	97,878 6 1 26,637 14. 3 6 5 7 1,495 15 7 2,064 7 11 36,576 18 4 180 15 11 164 19 3 35,567 12 4 9,808 13 0	4,139 16 5 9,865 6 0 1,367 2 0 18,904 11 10 1,181 4 8 6,837 1 0 8,581 18 11 7,005 18 9 57,382 19 7	308 8 5 755 15 4 5,662 1 11 260 13 9 6,128 14 3 1,963 15 0 15,079 8 8	1 8 2 1 6 2 1 6 2 3,516 6 6 85 16 7 2,056 14 10 1,020 11 9 999 3 6	26,655 17 11 4,353 16 10 610 0 0 12,198 3 8 145 2 3 4,921 2 6 74,433 7 6 2,713 14 1 20,708 1 9 46,067 15 0 20,454 10 0 142 9 0

Summary.

Year.	Engineering Expenses. Cost of Land.		Construction, Sidings, Tools, Bridges, &c.	Stations and Buildings.	Cost of Main Line.	Water Supply for Engines.	Total.	
1873	2 2 0	£ s. d. 2,220 5 10 8,419 2 7 11,728 17 6 11,756 8 11 6,602 0 0 4,457 13 4 5,730 2 2 17,589 8 1 68,503 18 5	£ s. d. 21,630 7 10 7,833 15 10 10,380 6 10 19,765 14 4 31,384 1 1 40,280 12 5 22,296 17 5 64,844 9 2 97,878 6 1 112,503 2 2	£ s. d. 24,800 10 7 8,271 0 2 9,437 6 4 29,416 12 3 26,659 7 9 17,347 15 0 7,024 2 6 9,579 1 5 53,575 19 3 57,382 19 7	£ s. d. 77 10 4 3 6 0 3,564 3 8 5,870 3 3 1,182 16 11 146 1 3 220 4 3 12,413 1 8 14,215 1 8 15,079 8 8	£ s. d. 665 12 11 	£ s. d. 47,379 13 10 16,108 2 0 26,436 14 3 65,770 0 5 74,163 2 9 75,421 15 4 38,515 0 8 94,994 0 7 186,046 0 5 213,404 0 6	

RETURN showing Expenditure—exclusive of that sanctioned by Engineer-in-Chief—from 1st January, 1873, to 31st December, 1882, out of Railway Loan Votes, after the Railways or Sections thereof were opened for traffic.

Year.	Votes.		Engineering Expenses.	Cost of Land.	Construction, Bridges, Sidings, Tools, Signals, Turntables, &c.	Stations and Buildings.	Cost of Main Lines, Rails, &c.	Water Supply or Engines.	Total
1876 ,, ,, ,, ,,	Bathurst to Orange Engine-sheds, Richmond. Land, &c., Darling Harbour Goulburn to Wagga Wagga. Completion to Kelso Kelso to Bathurst	36 Vic. 17	00	£ s. d.	£ s. d. 163 8 1	£ s. d. 19 10 6 40 5 0 6 2 8 247 5 10 0 9 4 2 16 0	£ s. d.	£ s. d. 148 8 6	£ s. d. 331 7 1 40 5 0 664 12 7 423 5 8 0 9 4 8 17 9
1877 ,, ,, ,, ,, ,, ,, ,, ,,	Land, &c., Darling Harbour Goulburn to Wagga Wagga. Bathurst to Orange Engine-sheds Excavating, Sydney Yard Enlarging Machine-shop, Sydney Carriage-shed, &c., Newcastle New Machine-shop, &c., Newcastle New Station, Newcastle Murrurundi to Tamworth Doubling Line, Wallsend to Hexham	38 Vic. 2	00 00 00 00 00 00 00 00 00 00 00 00 00		1,288 18 7 1,837 12 3 635 12 2 	421 15 11 433 1 10 891 8 1 1,928 8 9 		55 12 0 255 7 1	1,710 14 6 2,326 6 1 1,782 7 4 1,928 8 9 184 6 10 464 11 8 54 5 2 704 8 7 43 8 0 767 14 0 215 7 11
1878 ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,	New Machine-shop, Newcastle New Station, Newcastle Land, &c., Darling Harbour Goulburn to Wagga Wagga. Bathurst to Orange Engine-sheds Doubling Line, Wallsend to Hexham Enlarging Machine-shop, Sydney Murrurundi to Tamworth Bullock Island Railway New Station, Sydney Completion of New Station, Sydney Excavating, Sydney Yard. Extension, Great Northern Line	34 Vic. 2	00 2 19 0 00 00 00 00 00 00 00		4,477 9 9, 579 0 0 6,785 2 5 56 1 6 3,630 17 5 472 10 11 273 1 8 276 7 6 45 17 4 1,192 6 0 13,311 4 9	5,188 1 1 379 9 0 165 16 5 2,749 19 0	10,606 9 7	516 8 0 55 19 7 6 17 9 62 17 4	10,181 18 10 379 9 0 165 16 5 3,328 19 0 6,844 1 0 56 10 0 192 18 1 14,266 2 6 2,376 3 9 514 8 3 734 8 4 444 8 7 45 17 4 1,192 6 0 30,541 8 3

1880 M 1880 M W W Li N W W W W W N N Al 1881 G N N N N N N N N N N N N N	New Station, Newcastle Engine-sheds Foulburn to Wagga Wagga Doubling Line, Wallsend to Hexham Bullock Island Branch Enlarging Machine-shop, Sydney New Machine-shop, Newcastle Murrurundi to Tamworth Werris Creek to Gunnedah Excavating, Sydney Yard Land, &c., Darling Harbour	34 Vic. 2	£ 6,000 10,000 100,000 20,000 50,000 8,000 13,000 80,000 220,000 5,000 22,000 5,000 25,000	£ s. d.	£ s. d.	£ s. d. 58 13 2 4,042 19 7 1,749 2 10 1,815 17 0 2,478 15 7	£ s. d. 18 14 9 2,801 12 0 5 11 7 118 17 2 123 12 10 757 4 3 707 19 4 51 13 2	£ s. d.	£ s. d.	£ s. d. 77 7 11 2,801 12 0 4,048 11 2 3,555 18 5
1880 M 1880 M W W Li N W W W W W N N Al 1881 G N N N N N N N N N N N N N	Engine-sheds Foulburn to Wagga Wagga Doubling Line, Wallsend to Hexham Bullock Island Branch. Enlarging Machine-shop, Sydney New Machine-shop, Newcastle Murrurundi to Tamworth Excavating, Sydney Yard Land, &c., Darling Harbour Murrurundi to Tamworth	38 Vic. 2	10,000 100,000 20,000 50,000 8,000 13,000 80,000 220,000) 22,000 }			4,042 19 7 1,749 2 10 1,815 17 0	2,801 12 0 5 11 7 118 17 2 123 12 10 757 4 3 707 19 4	987 3 6	700 14 11	2,801 12 0 4,048 11 2 3,555 18 5
1880 M. W. W. W.	Excavating, Sydney Yard	44 Vic. 12	· 22,000 } - 5,000	*********			51 15 Z	••••••	22 2 1	1,939 9 10 757 4 3 707 19 4 2,552 10 10
,, W Do W W W W M M M M M M M M M M M M M M M				***************************************	•••••	194 11, 0 345 16 3 29 1 4	•		27 14 8	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
,, W Do W W W W M M M M M M M M M M M M M M M		1				10,714 16 9	4,585 5 1	987 3 6	750 11 8	17,037 17 0
" Do	Wallsend to Hexham Doubling Great Western Line, and other purposes. Werris Creek to Gunnedah. Wagga to Albury Engine-sheds Drange to Dubbo Sullock Island Branch New Workshops, Eveleigh Houlburn to Wagga Excavating, Sydney Yard Alterations and additions to Stations, &c.	44 Vic. 12	80,000 20,000 100,000 22,000 680,000 10,000 350,000 44,000 50,000 250,000 100,000 5,000 e taken.)	32 13 1	561 8 4	413 15 0 1,074 18 10 34,100 15 9 73 10 1 18 2 9 	17 9 9 40 12 7 169 6 11	846 19 9 15,684 17 1	110 10 9	481 4 9 1,962 11 2 49,968 9 9 73 10 1 18 2 9 320 11 4 219 13 0 705 13 3 114 19 7 9 18 0 189 0 0 56,587 15 9
" Do	•		`	46 3 1	561 8 4	78,860 1 4	11,641 9 0	17,021 9 11	2,470 17 9	110,601 9 5
" Or " Jr	Foulburn to Wagga Doubling Great Western Line, and other purposes New Workshops, Eveleigh Wagga to Albury Orange to Dubbo Junee to Narrandera Bullock Island Branch	43 Vic. 11 44 Vic. 12 44 Vic. 12 41 Vic. 7 44 Vic. 28 40 Vic. 12 44 Vic. 12 48 Vic. 12 38 Vic. 2 38 Vic. 2 38 Vic. 2 44 Vic. 12 44 Vic. 12 44 Vic. 12 45 Vic. 12 46 Vic. 12 47 Vic. 12	100,000 100,000 250,000 680,000 } 95,000 } 260,000 } 384,000 50,000 8,000 10,000 22,000 77,000 785,000 300,000		40 0 0 104,284 5 0 	42 1 0 16,663 3 4 37 18 5 51 16 11 998 0 5 466 9 4 66 5 8 	584 14 4 365 1 5	8,902 7 8 3 17 0 305 19 11 	155 10 3 4,719 4 10 63 13 9 59 5 8 15 13 9 	42 1 0 26,345 15 7 109,406 9 8 119 7 8 1,057 6 1 608 16 8 372 5 7 972 5 8 7 10 0 160 6 7 60 6 8 56 9 6 148,214 7 1

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Year.	Votes.			Engineering Expenses.	Cost of Land.	Construction, Bridges, Sidings, Tools, Signals, Turntables, &c.	Stations and Buildings.	Cost of Main Lines, Rails, &c.	Water Supply for Engines.	Total.
, E B B M.	Enlarging machine-shop, Sydney Junee to Narrandera. Orange to Dubbo Bathurst to Orange Tamworth to Tenterfield Narrandera to Hay Bullock Island Branch Wagga to Albury Muirurundi to Tamworth Wallerawang to Mudgee Junnedah to Narrabri Werris Creek to Gunnedah Dubbo to Bourke Joulburn to Wagga Land Claims, old Lines	44 Vic. 12	\$84,000 40,000 77,000 1,611,000 50,000 95,000 80,000 735,000 22,000 1,450,000 100,000 6,000 25,000 300,000	£ s. d. 137 10 0	# s. d. 7 13 0 15 10 2 2 18 3 43 15 7 18 0 1 5 8 8 19 8 11 6 11 8 0 16 8 4 4 10 3 9 10 813 6 2	£ s. d. 1,913 4 2 4,449 19 2 309 15 1 1,965 2 11 44 4 7 540 3 0 1,153 12 7 237 7 6 43 12 1 555 6 1 643 5 2 407 17 7 9,195 0 3	£ s. d. 18,522 1 3 2,461 13 10 83 9 7	1,213 19 9	£ s. d. 2,004 6 10 1 19 11 2 18 5 151 7 7 75 15 2 5 9 10 9 2 10 12,950 11 3 15,201 11 10	£ s. d. 22,577 2 3 7,065 13 11 83 9 7 325 5 3 1,987 12 11 47 2 10 583 18 7 1,218 12 7 20 17 10 245 14 7 43 12 1 778 2 9 719 0 4 419 19 1 9,236 15 5 4 4 10 3 9 10 1 17 8 183,478 3 1

SUMMARY.

Year.	Engineering Expenses.	Cost of Land.	Construction, Bridges, Sidings, Tools, Signals, Turntables, &c.	Stations and Buildings.	Cost of Main Lines, Rails, &c.	Water Supply for Engines.	Total.
1876 1877 1878 1879 1880 1881	£ s. d. 2 19 0 46 3 1 137 10 0 186 12 1	£ s. d. 561 8 4 104,739 10 5 941 3 10 106,242 2 7	£ s. d. 983 1 10 4,477 9 9 13,311 4 9 10,714 16 9 78,860 1 4 90,457 13 10 124,952 1 3	£ s. d. 316 9 4 5,188 1 1 6,557 17 7 4,585 5 1 11,641 9 0 65,799 4 10 86,248 0 10 180,336 7 9	£ s. d	£ s. d. 169 6 3 516 8 0 62 17 4 750 11 8 2,470 17 9 16,366 1 4 15,201 11 10 35,537 14 2	£ s. d. 1,468 17 5 10,181 18 10 30,541 8 3 17,037 17 0 110,601 9 5 287,423 7 9 228,840 15 5

Sydney: Thomas Richards, Government Printer.—1884.

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1883-4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

EXPENDITURE ON RAILWAYS.

(SHOWING CAPITAL AND WORKING EXPENSES.)

Ordered by the Legislative Assembly to be printed, 8 April, 1884.

- LAID upon the Table of the House in accordance with promise made by the Honorable the Secretary for Public Works, in answer to Question asked by the Honorable Member for South Sydney, Mr. Poole, on Votes and Proceedings No. 65, of the 4th March, 1884,—
 - "(1.) The total capital expended on all lines opened for traffic at the end of 1883.
 - "(2.) The total expenditure for working the lines during the year 1883."

EXPENDITURE ON RAILWAYS.

- (1.)

 Question:—What was the total capital expended on all lines opened for traffic at the end of 1883?

 Answer:—£16,957,946.
- (2.)

 Question:—What was the total expenditure for working the lines during the year 1883?

 Answer:—£1,187,852.

Note.—The above figures are subject to final revision.

$N \to W$ SOUTH WALES.

RAILWAY ACCOUNTS.

(MINUTES AND REPORTS.)

Ordered by the Legislative Assembly to be printed, 26 August, 1884.

Minute by Secretary for Public Works.

Mr. Garvan, M.P., made some statement in the House a few evenings ago, during my temporary absence from the Chamber, with respect to the Railway Accounts, the accuracy of which he challenged, stating that capital had been improperly charged with the cost of works which should have been charged to maintenance, and that thereby a fictitious net return had been shown. He also stated that a charge four times greater than the charge for ordinary goods was made for Railway material, and that wool was carried at a ruinous loss.

I am convinced that there is no foundation for these statements; but as it will be necessary authoritatively to contradict them, I desire to have the Commissioner's report on the subject at as early

I have already called upon the Accountant for a report, and will reply to Mr. Garvan's statement as requested. CH. A. G.,

Minute of Commissioner re Mr. Garvan's statement that Capital has been debited with expenses which should have been charged to Revenue.

I MAVE annotated the report of Mr. Garvan's speech, and the Accountant will see what is required to

refute the statements he has made.

I shall be glad if he will furnish, at the same time, a return of the various votes, whether from revenue or capital, for additions to the Railways to meet increasing traffic; include all votes for doubling lines, and the votes for improving the Windsor and Richmond line.

CH. A. GOODCHAP.

Report of Railway Accountant to the Commissioner for Railways.

Mr. Garvan's speech on the Railway Accounts.

Mr. Garvau, in his speech on the Railway Accounts, not only condemns the practice of charging certain items to capital, but deliberately denounces it in the following words, viz.:—

"It appears that were after year as our railways are constructed under the supervision." I procure

"It appears that, year after year, as our railways are constructed, under the supervision, I presume, of an able and competent man, they are handed over to another Department. The moment they get into new hands alterations are commenced, and are constantly made by an officer who charges their cost the revenue been bolstered up

In reviewing and controverting these extraordinary and unfounded assertions, it will be necessary for me in the first place to give a short account of the way in which these charges were commenced. I shall thus be able to show that the inauguration of the charges objected to was not coincident with the handing over of the lines, when constructed, to a separate Branch; and that the necessity for such a course was felt, and similar charges made, when the Construction and Existing Lines Branches were both under the supervision of Mr. Whitton, the Engineer-in-Chief.

The first reference that I can find to the matter is in Mr. Rae's report of 1872-1875, and reads as

under:—

"But, in addition to the ordinary repairs and renewals properly chargeable to this account, a large amount for additions to existing works and new buildings has been charged to revenue, though properly belonging to capital." This system of appropriation, which is manifestly wrong, is not of recent origin. In my first report, dated 30th September, 1865, referring to the rapid increase of working expenses as out of all proportion to the increased mileage, I stated that a considerable portion of that expenditure, which legitimately belonged to capital, had, from the want of special votes, been defrayed from revenue.

1026—A

On

On the 7th June, 1867, the Engineer-in-Chief drew attention to the same objectionable practice, in the following terms:—

"In the years 1863, 1864, and 1865, many important additions and renewals over and above the ordinary maintenance were made, and paid for out of revenue when the works were clearly chargeable to capital. For instance, the colliery junction on the Northern line, wharf, carriage docks and sidings at Newcastle and Maitland, new station at Hexham, stables at Newcastle, Rooty Hill station, and gatehouses on the Western line, and coal sidings at Newcastle. The total cost of the above works was £4,583 6s., and should have been paid from capital." "The renewals during these years," he continues, "were very heavy both to permanent way and station buildings, particularly on the Southern line, and many additions were made to stations."

Nothing further seems to have been done in the matter until the year 1870, when the Engineer-in-Chief, who was then still in charge of both the Locomotive and Permanent Way Branches on the existing lines of Railway, again drew attention to the fact that sums were being charged under maintenance which did not properly belong to the payments usually classed under that heading, as they had been incurred for works which were additions to the lines, in the following minute:—

" Engineer's Office, 27 May, 1870.

"Subject: Additional Schedule Revenue Account.

"With a view of distinguishing between improvements to the line and works and the ordinary maintenance of the same, I suggest that another Schedule be added to the Revenue Account, viz.:—

"SCHEDULE G .- Additions and Improvements to Works and Buildings.

JOHN WHITTON."

On the minute being submitted by the then Commissioner, Mr. Rae, Mr. Whitton's request was approved by the Minister, Mr. Sutherland, and the separate Schedule was commenced, and styled "Additions and Improvements to Works and Buildings."

The amounts at that time being voted by Parliament under the heading of working expenses, the expenditure was so treated in the accounts; and as the total yearly sum was not then very large, the inclusion of the expenditure did not at that time seriously affect the yearly results.

After 1874, however, it was found that the enormous growth and extension of the Suburbs of Sydney necessitated such large works being undertaken, in the way of improvements and additions to stations and siding accommodation to work the traffic, that in dealing with the expenditure of the year 1875, Mr. Rae, who was then Commissioner, called the attention of the Minister to the subject; and requested his authority to charge the items to capital account, as the expenditure was clearly not for maintenance but for additional accommodation to meet the necessities of a growing traffic.

In his concluding minute on the subject, Mr. Rae wrote as follows, viz.:-

"While Mr. Whitton agrees with me that the items charged in Schedule G, for alterations and additions to station buildings and siding accommodation properly belong to capital, he doubts whether they can be so charged, as he considers the amount was not voted under loans, but as a portion of working expenses. To remove Mr. Whitton's doubts, I requested the Under Secretary for Finance and Trade and the Consulting Accountant to the Treasury to favour us with their views on the question. They are clearly of opinion that Schedule G was not voted under working expenses, but specially under 'miscellaneous,' and that the mere fact of not having been voted under loans does not in any way prevent its being charged to capital."

"As I am clearly of the same opinion, I request the Minister's sanction for Schedule G to be transferred in our books from revenue to capital, and that the Accountant be instructed to treat it as capital for the future."

J.R. " 29/3/76."

On this the Minister wrote, "I am clearly of opinion that the items generally included in Schedule G should be a charge on capital and not on working expenses. I cannot imagine that it was ever contemplated that permanent improvements, such as station-houses, docks, and other buildings of a like character, which are in every sense permanent and lasting, should be regarded as a charge against the current expenses of working the different lines. I approve of the transfer being made."

' J.L. " 30/3/76."

The decision of the Minister was endorsed by Parliament voting the sum of £30,000 on the Estimates for the year 1877, under the following heading, viz.:—

"Alterations and additions to Stations and Buildings, and Siding Accommodation to meet increasing traffic." "Capital Account."

Since then the items of expenditure, properly classed under additions and improvements, have been treated in the capital entries.

In the year 1881 the vote was for the first time placed under loans. (See Loan Act, 44 Vict. No. 28, £300,000.)

The instructions given from time to time indicate very clearly the care exercised to prevent expenditure properly chargeable to maintenance being in the accounts charged to capital.

In 1876, on the transfer ordered taking place, Mr. Goodchap, who was then Secretary, drew attention to certain works being partly chargeable to revenue, and subsequently on various occasions until April, 1882, when the following minute was written by the Commissioner on a question then referred to him, viz.:—

"The rule to be observed is, that nothing which does not add to the capital value of the line is to be charged to the capital account.

Anything in the shape of a renewal or a replacement, or in the way of substitution, is to be charged to working expenses, and also small things, not exceeding £25 in value, should be charged to working expenses.

C. A. GOODCHAP,

11/4/82."

Having thus shown how the charges made originated, and the character of the works the cost of which is charged to the capital, I now come to the remarks made by Mr. Garvan on the subject. From an examination of the speech it will be at once evident that the argument on which this gentleman's remarks are based is this, viz.:—

That once a line is constructed and open for traffic, no charge of any kind shall be made to the capital account.

The logical result of which applied to the New South Wales Railways is as follows:-

That no matter how a country progresses, nor how traffic develops and increases, or the railways are extended, and thereby ten times the quantity of station accommodation and rolling stock are requisite for working the traffic, still the capital account must not be added to in any way. Working expenses must bear the cost of all new or additional stations, sidings, rolling stock, or plant of any kind whatever.

Such a rule if applied to the ordinary business of the mercantile world would at once put a stop to all progress of whatever kind. What Company would, as their business extended and necessitated new and enlarged works, think of charging the cost of such additions to the profits of the year in which such expenses were incurred?

It is a matter of daily occurrence within the cognizance of any one, that capital is increased and new shares issued to pay for facilities to work a growing trade.

Not only so, but Mr. Garvan, in advocating the course he does, goes against the approved practice on all railways. As confirming and determining, for his satisfaction, the true course to be followed inthe treatment of capital account, I quote the following authorities, viz.:—

1. From Kirkman's Work on Railway Accounts Disbursements (American).

America practice.

- Page 76, item 368. "The word construction in Railway Accounts is intended to describe the original or first cost of the property of the Company."
 - item 369. "Something original and new."
 - item 370. "The cost of all improvements that add value and increased stability to the property of the Company over the original value are properly chargeable to construction."
 - item 371. "Construction properly embraces the total cost of any extension of the Company's lines."
 - item 372. "The cost of right-of-way, increased facilities and grounds, and the expenses incidental thereto."
 - item 373. "The cost of new side tracks, less the cost of side tracks taken up."
 - item 374. "The cost of viaducts and road bridges (where none before existed)."
 - item 375. "The difference in value between temporary or cheap bridges and culverts, and bridges and culverts replacing such, constructed in a permanent manner of iron or stone."
 - item 376. "The cost of additional telegraph lines and facilities."
 - item 377. "The value of steel rails over iron rails, where the former are substituted for the latter."
- Page 77, item 378. "The difference in value between iron laid in track of a heavier grade than that which it replaces."
 - item 379. "The cost of additions or improvements in the fixtures appertaining to track."
 - item 380. "The cost of remedying any defects in track rendered necessary in consequence of its not having been constructed in a first-class manner originally."
 - item 381. "The cost of additional buildings, including the machinery and appurtenances belonging thereto."
 - item 384. "The cost of transportation of material and men for construction purposes is a proper charge in connection with this account."
- Page 78, item 378. "The furniture and fixtures or the tools and machinery necessary to equip a new building or structure, and fit it for the purpose it was erected to serve, should also be charged up, as a part of the cost of such building or structure to construction."
- Page 79, item 389. "All additions of a substantial and permanent character to things already in use, as explained above, come properly under the head of construction."
 - item 391. "The cost of enlarging stock-yards, extending platforms, improving depôt (station) grounds, and all items of a similar character, come under this head, and should be so charged up."
 - 2. From the Report to the Secretary of State for India, in Council, on Railways in India, 1879-1880.

Indian practice

Appendix.—Contract between Secretary of State and East Indian Railway Company, 22 December, 1879, page 60, paragraph 32—" The question whether any expenditure incurred for the purposes of this undertaking is to be treated in the whole or in part as a charge incurred on capital account, or how the same is to be dealt with, shall be determined on the general principle that capital is to bear the cost of new works, of additional rolling-stock, plant, and machinery, and of substantial improvements of and additions to old works, rolling-stock, plant, and machinery, including the cost of any temporary new work, the construction of which is requisite for the construction of a work properly chargeable to capital, and that the cost of repairs, restorations, renewals, replacements, or substitutions is to be borne by revenue."

English practice 3. Extracts from reports of Meetings of Railway Shareholders in Herepath's Railway Journal of 1884, London, Brighton, and South Coast Lines. Meeting held January 23rd, 1884.

In the course of his speech the Chairman said:—"What with working new lines, opening up districts that were unprovided with railway accommodation, what with improving the stations, platforms, signals, and sidings, and number of other things on our existing lines, what with completely renovating our rolling-stock, what with adopting all the latest improvements, such as the Westinghouse brake, the block system, and so on, we have spent in round numbers something like four and a half millions of capital in the last six or seven years."

Manchester, Sheffield, and Lincolnshire Lines. Meeting held January 23rd, 1884.

In his speech from the Chair Sir E. W. Watkin said:—" He must again call their attention to the requirements of the Board of Trade in regard to the block system and interlocking; upon these two things they had already speut in capital £187,386."

Great Eastern Railway Co. Meeting held January 29th, 1884.

Chairman's speech:—"It is in my opinion absolutely necessary for you to complete your works so as to give the line the greatest money-getting power. We are embarrassed at present in our Liverpool Station. We want two more docks. We must complete various stations and make some new stations practically, where great complaints are made, because some of your stations are totally inadequate for the traffic."

Great Northern Railway Co. Extraordinary Meeting to increase the capital, January 5th, 1884.

In the course of explanation as to what the capital was to be raised for, the Chairman said: "It is for the completion of works under construction, for additional rolling-stock, waggons, carriages, and so on, for the construction of some short lines in the Leicestershire ironstone field, and for the making of a new Copenhagen tunnel. The Copenhagen tunnel, gentlemen, is a second tunnel out of the King's Cross Station. At present we have only two lines of rails to bring the whole of the passenger traffic into King's Cross."

The foregoing quotations well show that the system of making charges to capital for additions to works and buildings is regarded as correct by the authorities, as quoted from America, India, and England.

Now take the suburban line from Sydney to Granville (13 miles) and compare it with what it was (say) ten years ago. Since that time seven new stations or platforms (the necessity for which did not exist, and was not provided for when the lines were first constructed) have been made, and the revenue returned from these seven stations during the year 1882 was £14,602; deducting working expenses, there remained a clear profit of £8,538, or a sum equivalent to a return of $47^{\circ}/_{\circ}$ per annum on the capital expended on these stations, namely, £18,000. It appears to me that no argument is, or should be needed, to show the folly of asserting that the cost of such works should be charged to the current working expenditure. It is as clearly a charge to capital, even though the works may not have been undertaken for twenty years after the line was open for traffic, as it would have been if they had been made before the line was open for traffic.

Not only however have new stations been constructed, but large additions to the original stations have been made in order to cope with the growing requirements. The necessity for these additions will be at once seen from a comparison of the returns of earnings in 1877 and 1882.

On the suburban line in 1877 the earnings were: Coaching, £90,296; goods, £138,126; and in 1882, coaching, £440,936; goods, £737,012; showing that the traffic in 1882 was nearly five times as great as in 1877.

From these figures it is evident that not only was increased accommodation necessary, but that it was provided, or the traffic could not have been carried, and it is the cost of these additional works that has been from year to year carried to the capital account, and very properly so.

What is true of the increased requirements on the suburban line is true also of the other lines, but only in a lesser degree, owing to the whole of the Southern and Western traffic having to run over the short length between Sydney and Granville.

As the lines are extended, and new sections and branches opened, it is requisite that increased accommodation be provided on the older lines; and as this large increase in the traffic does not appear to have been foreseen or provided for when these older lines were first made, the necessity has arisen for these charges to capital account on the other sections. In reference to the Richmond branch, which is specially mentioned by Mr. Garvan, it must be remembered that this branch when first constructed was intended only to be used as a horse tramway. Subsequently light locomotives were used, but it was found necessary in order that the traffic might be worked economically to remodel the line altogether by lowering the gradients and strengthening the bridges and replacing the light rails with 70-lb. rail, thus making it a line capable of carrying our ordinary locomotives. Special votes were passed by the Parliament for this work and the cost of the transformation, which is obviously not a maintenance charge, has been charged to the capital account.

But

But while the cost of these additions has been so dealt with, the proper amounts for maintenance have in all cases been carefully and regularly charged under working expenses. The amounts so charged in the year 1882 were as follows:-

Locomotive Branch.—Repairs and renewals of locomotives, carriages, waggons, and machinery, and workshops in connection therewith: £113,147.

Permanent Way Branch.—Repairs and renewals of permanent-way workshops, machinery, tunnels, viaducts, bridges, sidings, turn-tables, gates, fences, stations, platforms, signals, and main lines, &c. :—£261,989.

Traffic Branch.—Repairs and renewals of station furniture, fittings, and implements, making and repairing lamps, &c.:—£10,479.

A total sum charged for legitimate maintenance in the year 1882 of £385,615.

In order still further to show that working expenses is debited, not only with all that can fairly be charged to it, but also with items which could with reason be classed as improvements, I may mention that the whole cost of the plant for the electric light at Redfern, £2,500, was, by order of the Commissioner, charged to working expenses; that old locomotives have been replaced with vastly improved ones,—iron rails have been taken up, and steel put in their place; sleepers made of inferior timber replaced by ironbark sleepers; various improvements made in carriages and waggons; and at Parramatta, where four old timber bridges to carry a single line of rails are being replaced with iron girder bridges to carry a double line, the full single line cost of erection of the iron girder bridges, £12,583, is to be charged to working expenses, although the original cost of the wooden bridges did not exceed £6,000.

The minute of the Commissioner on this last item is as follows, viz.:—

"To be on the safe side, and to run no risk of being truthfully charged with paying from capital what ought to be borne by revenue, I recommend that these bridges be renewed as proposed, and that revenue be charged with the cost of £12,583.

"C. A. G. "20/1/83."

This was approved by the Minister on the 17th February, 1883.

I have taken the accounts of the year 1882 as an example of the items chargeable to capital. My remarks will, however, apply with equal force to the expenditure of previous years.

In conclusion, from my intimate knowledge of the railway accounts for the last nine years, I can safely affirm that Mr. Garvan's assertions are as groundless as the system of charging which he advocates is unsound and opposed to the general practice on all railways.

I append a detailed statement, showing the various classes of works which were made chargeable

to the capital account during 1882.

F. J. WICKHAM, Accountant, Railways.

27/3/84.

The Commissioner for Railways to The Secretary for Public Works.

In submitting the Railway Accountant's report upon the extraordinary statements made by Mr. Garvan, M.P., in his speech delivered in the Legislative Assembly upon the railway accounts, I desire to draw attention to that portion of it which refers to the initiation of the system of charging to capital the

expenditure incurred in improving the lines and adding to their actual value.

It will be seen that the Engineer-in-Chief (Mr. Whitton) was the first to object to the annual votes for maintaining the lines being weighted with the cost of "additions and renewals over and above the ordinary maintenance," which were—to quote his own words—"clearly chargeable to capital."

At the time Mr. Whitton made these representations he was in charge of and responsible for the

maintenance of the lines.

It seems to me to be unnecessary to enlarge upon the exhaustive report of the Railway Accountant, but there are other portions of Mr. Garvan's speech which are not less extraordinary and incorrect than are his representations with respect to the railway accounts. His statement that the revenue is exhalm at the expense of capital, by charging for the carriage of railway material for the extensions four times the amount charged for the carriage of ordinary goods, is simply incomprehensible. A reference to the published rate sheet (open to all) will show that the charge made for the conveyance of rails for a short distance is 4d. per ton per mile; for a long distance—as, for instance, from Sydney to Nyngan, for the extension to Bourke—the charge is equal only to 3d. per ton per mile for the whole distance.

Now, the charge for general merchandise included in third-class rate is, for short distances, 7d. per ton per mile and to Nyngan it is equal to 5½ per ton per mile.

ton per mile, and to Nyngan it is equal to $5\frac{1}{2}$ d. per ton per mile.

On comparing the rate for rails with the charge made for the carriage of other descriptions of iron, it will be observed that iron generally is charged 5d. per ton per mile, and to Nyngan 4d. per ton per

These are charges for materials conveyed from the metropolis to the interior, and the charge These are charges for materials conveyed from the metropolis to the interior, and the charge for rails should, equitably, be more, not less, than it is for other descriptions of iron, because the rails, in consequence of their length, have to be carried in what are termed "bolster trucks," which, having no sides, cannot be used for the conveyance of the produce of the country on the return journey, and for the most part they return empty. On the other hand, the "D" trucks which carry the ordinary iron can and do bring back wheat, coal, shale, iron-stone, firewood, and other similar goods.

There are of course charges considerably below the charges made for iron and for iron rails, but such charges are generally for the carriage of raw produce from the country to Sydney, and we are enabled to make very low charges for these goods because their carriage utilizes the trucks which would if a heavier

make very low charges for these goods because their carriage utilizes the trucks which would, if a heavier charge were made, have to return empty.

Taking all classes of traffic, however, from the lowest to the highest, it will be found that, so far from the charge for the carriage of rails being four times the charge made for the carriage of goods generally, it is absolutely below the average charge.

Mr. Garvan is not more fortunate in his statement about the charges for the carriage of wool. He says—"The chief article of produce in this Colony is wool, and I maintain, and am in a position to prove, that it is carried on our railways at a rate which is ruinously and unfairly low."

In reply to this, I have to state that in 1882 we carried 42,083 tons of wool, and that while the freight charge thereon amounted to £98,502, the net earnings were £47,792. If all classes of traffic paid the Department a like rate of profit, the return upon the capital expended upon our lines would be

sensibly larger than it is.

That wool returns a better profit than any other produce, either agricultural or mineral, is made clear by the fact that a truck of wheat or of mineral ore from (say) Orange to Sydney realizes for freight £4 18s., while a truck of wool from the same station realizes £12 12s. It will therefore be seen that the charges for the carriage of wool, instead of being "ruinously and unfairly low," produce a greater profit than almost any other description of traffic.

In concluding my observations, I desire to express a hope that nothing which has been said in these papers will be considered to be personally distasteful to Mr. Garvan; he has been animated, I am quite sure, by a conviction that he had good grounds for the representations he has made; and although he is altogether wrong, and it is my duty to refute his statements, I desire to do so dispassionately and with the respect due to the Honorable Member.

5/4/84.

CH. A. GOODCHAP.

Section.	Description of Work.	Amount.	Amount.	Total	Remarks.	Votes against which the expense was charged.
Sydney to Granville, 14 miles.	Additional Sewer, Darling Harbour ,, Wool, Goods, and Engine-sheds ,, Office Accommodation ,, Sidings ,, Platforms and Waiting-sheds ,, Through and Approach Roads Enlarging Machine Shop, Redfern Interlocking Apparatus Retaining Wall, Devonshire-street Additional Water Supply ,, Land Purchase Levelling Land, &c., Eveleigh Workshops Making Subways and Approaches to Additional Block-box Widening Bridge, Canterbury Road Boundary Wall, &c. Station-masters' Houses and Enlarging do Over-bridge. Additional Fences to prevent public crossing Line ,, Foot Over-bridges ,,, Sidings, Docks, &c., Cattle-yards ,, Level Crossing ,, Platform and Sidings, Clyde	2,939 6 9 2,296 0 4 16,610 3 8 2,386 10 3 211 7 4 83 9 7 2,068 10 8 272 9 2 712 1 8 559 6 7 22,616 5 10 6,064 8 2 3 19 7 797 13 10 211 16 10 1,222 15 1 1,385 14 1	£ s. d.	£ s. d.	Completing entries only Completing entries only do Completing entries only Completing entry only Completing entries only Completing entries only	No. 12). £3,072 11s. Additions and alterations, &c., £400,000 (46 Vic. No. 23 £204 19s. 5d. do do Enlarging Machine Shops, Sydney, £8,000 (38 Vic. No. 2 Additions and alterations, &c., £400,000 (46 Vic. No. 23) do do New Workshops, Eveleigh, £250,000 (44 Vic. No. 12). Additions and Alterations (46 Vic. No. 23). do do do do do do do do do do do do do
Granville to Goulburn, 121 miles.	Additional Engine and Goods Sheds and additional Turntable ,, Houses for Employés ,, Carriage-dock and Ash-pits ,, Water supply Additions to Stations Additional Sidings, Signals, &c. ,, Platform Interlocking Apparatus Additional Office Accommodation ,, Fences and Gates ,, Workshops. , Approaches	945 17 3 2,319 14 5 1,039 1 4 1,210 1 0 3,089 19 2 8,342 7 11 1,651 7 1 41 0 2 852 15 1 84 1 0 1,050 16 8 95 13 11	75,806 4 5	•	Preliminary expenses	do do Engine sheds, £10,000; revenue, £30 16s. 4d.; addition and alterations, &c., £400,000; £915 0s. 11d. do do do do do do do do do do do do do
Goulburn to Albury, 252 miles	Level Crossing Additional Water Supply Additions to Stations Additional Houses for Employés Water Supply for Employés Wiring Fences	1,938 19 11 2,217 12 0 3,751 4 4 66 14 3 587 1 6	20,780 9 6.			do do do do do

Section.	Description of Work.	Amount.	Amount.	Total.	Remarks.	Votes against which the expense was charged.
		£ s. d.	£ s. d.	£ s. d.		
Goulburn to Albury— contd. 252 miles.	Additional Sidings and Signals ,, Waterways. Fencing Stock Reserve. Stock Yards Additions to Goods-sheds Additional Approach Roads ,, Ash-pits and Engine-pits ,, Level Crossing	1,586 19 4 274 6 6 223 3 6 2,446 9 11 193 11 3 278 5 0 104 9 3 124 12 8	·	,		Engine sheds, £10,000; revenue, £30 16s. 4d.; addition and alterations, &c., £400,000; £915 0s. 11d. do do do do do do do do do
,	Expenditure for Construction, Engineering Branch— Engineering Expenses Legal Expenses Compensation for Land Constructing Line, Bridges, Sidings, &c. Stations and Buildings Permanent-way Rails and Fastenings Water Supply Proportion of General Salaries					Goulburn to Wagga Wagga (43 Vic. 11), £100,000 £14,242 10 Wagga Wagga to Albury (44 Vic. 28), £95,000 2,823 6 General Establishment, 1882 51 1 Works in progress, 1882 199 7
,	Less excess Credits during 1882— Goulburn to Yass Extension	24,568 15 1	17,316 5 11	81,109 15 4		
Junce to Hay, 167 miles.	Houses for Employés Platforms, Sidings, and Signals	164 19 5 311 19 11 636 5 2 107 8 10 88 19 9 339 12 8	2,764 18 1		250	Additions and alterations (46 Vic. 23), £400,000. do do do do do do do do do do do do do
	Expenditure for Construction, Engineeering Branch— Legal Expenses Engineering Expenses Compensation for Land Construction of Line, Bridges, Sidings, &c. Stations and Buildings Permanent-way Rails and Fastenings Water Supply Proportion of General Salaries	9,738 9 2 9,738 9 2 117,971 2 8 31,327 15 9 49,914 8 10 1,981 16 3				Narrandera to Hay, £735,000 (43 Vic. No. 11). £213,793 15s. 9d. General Establishment, 1882. £379 18s. 8d. Works in progress, 1882. £1,741 12s. 11d.
		-	-215,915 7 4	218,680 5 5		

^{*} Expenditure incurred in the construction of the lines, the settlement of which had been delayed from various causes.

Section.	Description of Work.	Amount.	Amount.	Total.	Remarks.	Votes against which the expense was charged.
Granville to Bathurst, 132 miles. Bathurst to Nevertire, 196 miles.	Additions to Stations Additional Sidings and Signals ,, Platforms ,, Water Supply ,, Culverts and Waterways Houses for Employés Additions to Workshops and Engine-sheds Additional Level Crossing ,, Through Road Wiring Fences Stock-yards Additional Carriage Shed ,, Office Accommodation Doubling Line, Lithgow Additions to Stations Signals and Sidings Additions to Goods-sheds Additional Water Supply Houses for Employés Ash and Engine-pits Additional Sand-house ,, Platforms ,, Office Accommodation ,, Fencing	23,090 13 9 113 14 0 6,224 1 11 333 2 6 732 5 0 8,097 15 3 8 12 2 54 1 4 158 11 2 422 15 2 2811 6 5 672 2 11 784 4 6 1,445 6 0 1,412 16 9 1,412 16 9 1,482 13 7 1,151 15 4 40 12 1 48 3 7 175 10 0 8 10 8 8 10 8 8 33 7 0	£ s. d	£ s. d		Additions and Alterations (46 Vic. 23), £400,000. do do do do do E6,882 17s. 3d. Engine-sheds, £100,000. £1,214 18s. Additions and Alterations (46 Vic. No. 23), £400,000. do do do do Additions and Alterations (46 Vic. 23), £400,000. Additions and Alterations (46 Vic. 23), £400,000. do do do Additions and Alterations (46 Vic. 23), £400,000. do do do do do do do do do do do do do
Wallerawang to Capertee, 22 miles. Richmond Line, 16 miles.	Houses for Employés Additional Office Accommodation Additional Sidings, Platforms and Signals Additions to Station Additional Houses for Employés ,, Water Supply New Goods-shed Fencing Land purchased	3,283 6 7 858 2 3 16 12 7	9,556 8 3* 210 14 9 577 4 4 10 19 3	15,896 14 2 798 18 4 18,386 13 8	Portion of cost only	do do Bathurst to Orange, £77,000 (41 Vic. 4). £192 5s. 1d. Orange to Dubbo, £40,000 (44 Vic. 12). £9,347 10s. 7d. General Establishment, 1882. £16 12s. 7d. Additions and Alterations, £400,000 (46 Vic. 23). do do do do do do do do do do do do do do do forange to Orange, £77,000 (41 Vic. 4). £10,347 10s. 7d. Additions and Alterations, £400,000 (46 Vic. 23). do do do do do do Improvements, Richmond Line, £15,000 Revenue.

^{*} Expenditure for construction of the line, the settlement for which had been delayed till after opening for traffic.

Votes against which the expense was charged

Remarks

Total

Amount

Amount

Description of Work

Section

. 1		}					
Newcastle to Murrui undi, 124 miles.	Additional Sidings and Signals Additions to Station Additional Water Supply ,, Fencing Interlocking Apparatus Additional Store Buildings ,, Sand Fuinace ,, Workshops and Sheds ,, Office Accommodation Laying additional Coal Line, Waratah to Hamilton Additional Houses for Employés Retaining Wall Additional Stock Yaids ,, Goods-shed ,, Level Crossing Doubling Line, Newcastile to West Maitland Branch Line to Bullock Island Land Claims		£ s. d 1,831 10 1 1,448 16 9 890 2 4 71 17 9 900 11 3 1,238 18 1 144 19 3 4,183 7 7 932 16 11 2,066 13 3 1,553 13 10 138 2 8 21 7 4 366 11 3 59 0 5 865 15 8 20 18 7 225 11 10	£ s. d.	£ s. d.	- }	Additions and Alterations, £400,000 (46 Vic. 23). do do do do do do do do Additions and Alterations, £573 16s 6d. Railway Store, Newcastle, Revenue (41 Vic 8), £665 1s. 7d. Additions and Alterations, &c, £400,000 (46 Vic 23). Additions and Alterations, &c, £2,962 18s 5d Workshops, H S Point, Revenue, £1,220 9s 2d. Additions and Alterations, &c, £400,000 (46 Vic. 23). do do do do do do do do do do do do do
Murrurundı to Uralla, 125 mıles.	Additions to Station Sidings, Signals, &c Additional Water Supply Additions to Foot bridge Level Crossings and Gates Expenditure for Construction, Engineer's Branch— Legal Expenses Engineering Expenses Compensation for Land Constructing Line, Bridges, Sidings, &c. Stations and Buildings Permanent-way Rails and Fastenings Water Supply Proportion of General Salaries	••	161 12 4 114 2 11 63 5 9 15 19 8 42 2 4 684 18 4 2,661 4 7 5,175 1 8 117,293 6 4 13,986 10 10 5,617 16 5 4,386 15 1 1,468 7 6	151 974 A 0	- 16,960 14 10	,	Alterations and Additions, &c , £400,000 (46 Vic. 23) do do do do do do do do do do do do Murrui undi to Tamworth, £80,000 (41 Vic. 4) £768 17s. 5d. Tamworth to Tenterfield, £1,611,000 (43 Vic. 11). £149,036 15s 10d. General Establishment, 1682 £261 1s Works in progress, 1882. £1,207 6s 6d.
Werris Ck. to Narrabri, 41 miles.	Additions to Station ,, to Running Shed Houses for Employés Supplying Workmen with Water		157 13 10 3 18 6 1,068 4 9 26 18 2	1,256 15 3	151,671 3 9	Part expense only.	Additions and Alterations, &c, £400,000 (46 Vic. 23 do do do do do do do do do do do do do

^{*} Expenditure for construction of the line, settlement for which had been delayed till line was opened.

Section.	Description of Work.	Amount.	Amount.	Total.	Remarks.	Votes against which the expense was charged.
		£ s. d	£ s. d	£ s. d.	·	
	Expenditure for Construction, Engineer's Branch— Legal Expenses Engineering Expenses Compensation for Land Constructing Line, Bridges, Sidings, &c. Stations and Buildings Permanent Way Rails and Fastenings	49 6 4 2,289 7 0 1,248 16 8 80,303 3 0 17,610 10 4 31,695 11 1				Werris Creek to Gunnedah, £22,000 (44 Vic. £512 6s. 10d. Gunnedah to Narrabri, £370,000 (43 Vic.
	Water Supply Proportion of General Salaries	2,915 14 11 1,335 13 6	137,448 2 10*	138,704 18 1		£135,600 2s. 6d. General Establishment, 1882. £237 3s. 10d. Works in progress, 1882. £1,098 9s. 8d.
	Additional Rolling Stock, Machinery, &c., distributed among the Sections in the following proportions:— Sydney to Granville Granville to Goulburn Junee to Hay Granville to Bathurst Bathurst to Nevertire Wallerawang to Capertee Blacktown to Richmond Newcastle to Murrurundi Murrurundi to Uralla Werris Creek to Narrabri	36,155 0 0 17,390 0 0 19,197 0 0 47,919 0 0 56,676 0 0	220,413 0 0			
	Deduct— Goulburn to Albury Section To make up the increase of the Capital Account in 1882 over 1881, the following amounts being cost of construction of new lines		867 0 0	219,546 0 0		
•	open during 1882, now for the first time shown in Capital Account Lines open, as under— Junee to Hay Bathurst to Nevertire. Wallerawang to Capertee Murrurundi to Uralla. Werris Creek to Narrabri		153,847 10 3 320,000 0 11 189,201 1 8 760,177 16 0 163,462 0 8	1586688 9 6		
	Grand Total	•••••		2546897 1 3+		

* Expenditure for construction of the line, settlement for which had been delayed till line was opened.

† Made up as follows:—

First cost Construction Accounts. £2,118,198

Additions to do 209,153

Additional Rolling Stock, &c. 219,546

F. J. WICKHAM, Accountant.

NEW SOUTH WALES.

RAILWAY CARS.

(COST, ACCOMMODATION, DURABILITY, &c.)

Ordered by the Legislative Assembly to be printed, 31 October, 1884, A.M.

- LAID upon the Table of the House in accordance with promise made by the Honorable the Secretary for Public Works, in answer to Question No. 2, in Votes and Proceedings No. 137, of the 24th July, 1884.
 - "(1.) What is the cost of the 1st class Railway Cars of the American "saloon pattern?
 - "(2.) What is the cost of 2nd class cars of same pattern?
 - "(3.) What is the number of passengers which such cars will carry?
 - "(4.) What is the average space accommodation in cubic feet afforded to each passenger in such cars?
 - "(5.) What is the weight of such cars?
 - "(6.) For what length of time will such cars last, and what is the average cost of keeping them in repair?
 - "(7.) What is the cost of the 1st class cars recently constructed of the older pattern on Ashbury under-carriages?
 - "(8.) What is the cost of 2nd class cars of that pattern?
 - "(9.) What is the number of passengers such cars will carry?
 - "(10.) What is the average space accommodation in cubic feet afforded to each passenger in such cars?
 - " (11.) What is the weight of such cars?
 - "(12.) For what length of time will such cars last, and what is the average cost of keeping them in repair?
 - "(13.) Is it intended to construct any more such cars; and if so, how many are now ordered?
 - "(14.) Is it intended to construct more cars of the American pattern; and
 - "if so, how many are now ordered?"

RAILWAY CARS.

Question: -What is the cost of the 1st class Railway Cars of the American saloon pattern? Answer: -£1,045 each. Question: - What is the cost of 2nd class cars of same pattern? Answer: -£805 each. Question: -- What is the number of passengers which such cars will carry? Answer:—1st class American car carries 60 passengers. 60 (4.)—Question: -What is the average space accommodation in cubic feet afforded to each rassenger in such cars? Answer: -Each 1st class passenger, 33 24 cubic feet. 33.24" 2nd " -Question: -- What is the weight of such cars? Answer:—1st class American weighs 16 10 3 2nd ,, ,, 16 2 0 (6.) -Question: -For what length of time will such cars last, and what is the average cost of keeping them in repair? Answer:—From 20 to 25 years. For repairs—1st class, about £25 per annum. £18 2nd ,, (7.) - Question: - What is the cost of the 1st class cars recently constructed of the older pattern on Ashbury under-carriages? Answer: £1,031 each. Question: - What is the cost of 2nd class cars of that pattern? Answer: -£857 each. Question: - What is the number of passengers such cars will carry? Answer:—1st class, 60 passengers.
2nd ,, 70 . ,, (10.)—Question: -What is the average space accommodation in cubic feet afforded to each passenger in such cars? Answer: -Each 1st class passenger, 36 4 cubic feet. 2nd ,, (11.)—Question:—What is the weight of such cars?

Answer:—1st class, 13 16 2 2nd , 13 5 0 (12.)—Question:—For what length of time will such cars last, and what is the average cost of keeping them in repair? -From 20 to 25 years. Answer: :-For repairs—1st class, per annum, £25. 2nd " -Is it intended to construct any more such cars; and if so, how many are now ordered? -Question:—Is it intended to construct any more such cars; and if so, how many are now ordered?

Answer:—The question as to further supply is under consideration. One 1st class and four 2nd class cars of this type are at present in course of construction. (14.) — Question :—Is it intended to construct more cars of the American pattern; and if so, how many are now ordered? Answer: - Fifteen 1st class of this type contracted for, two of which are now ordered and in course of construction. Fifteen 2nd class of this type contracted for, two of which are now ordered and in course of construction.

NEW SOUTH WALES.

RAILWAY SURVEYORS.

(NAMES AND DATES OF APPOINTMENT.)

Ordered by the Legislative Assembly to be printed, 28 February, 1884.

RETURN showing Names and Dates of Appointment of present Railway Surveyors:--

	_	1075 1 1001	G A D		90 1	1883.
T. Kennedy, sen.	,	18 March, 1861.	C. A. Burrowes	***	30 Aug.,	
A. Francis		7 May, 1873.	W. R. Bell		12 Sept.,	1883.
John Cumming		22 July, 1878.	W. A. Dyer		1 Sept.,	1883.
H. Hardy	1	20 April, 1873.	Alfred Vine		19 Jan.,	1874.
N. P. Carver		5 Dec., 1873.	W. D. Walker		12 Aug.,	1879.
G. Melrose		19 Aug., 1881.	John Carter		10 May,	1879.
C. E. Hogg	•••	21 June, 1877.	M. Jones		1 Sept.,	1881.
(10	•••	1 March, 1879.	C. A. Edwardes			1881.
W. J. Millner	•••				24 May,	1881.
F. H. Geison		2 June, 1881. `	J. J. Jamieson	•••		
O. Lloyd		14 July, 1881.	H. T. Harwood		1 Oct.,	1882.
A. Morris	•••	24 Aug., 1881.	A. Mansfield		21 Nov.,	1882.
John P. Sharkey		18 May, 1881.	J. A. O. Gibbes		3 June,	1881."
E. B. Thornbury	·	22 Aug., 1881.	T. Kennedy, jun.	•••	3 Aug.,	1881.
J. S. Whitlock		*** == == **	W. A. Bullard	• • •	1 Oct.,	1882.
	•••				17 Sept.,	1883.
G. L. Wilkins		11 Aug., 1881.	E. M. Hixson	•••		
S. S. Wells		23 Aug., 1883.	H. E. Martin	•••	21 Sept.,	1883.
W. G. Kerle		1 Oct., 1882.	F. E. Wickham		3 Oct.,	1883.
W. O. Belle	•••	2000.,			•	

Note.—The Surveyors whose names are in *italics* have held previous appointments in the Department in the same capacity.

Mr. Walker is at present absent on leave without pay.

Department of Engineer-in-Chief for Railways.

(Mr. T. Garrett.)

$N \to W$ SOUTH WALES

RAILWAY TRIAL SURVEYS.

(APPLIED FOR AND GRANTED IN 1880, 1881, 1882, AND 1883.)

Ordered by the Legislative Assembly to be printed, 6 March, 1884.

LIST of Trial Surveys applied for and granted during the years 1880, 1881, 1882, and 1883.

Nyngan to Cobar, and Cobar to Louth. Macdonaldtown to St. Peters.

Amended Surveys, Illawarra Ry. Glen Innes to Inverell.

Trial Bay to Armidale.
G.W. Ry. to Brewarrina.
Narrabri to Moree.
Gundagai to Tumut.

Girilambone to Cobar. City underground Ry.

Wagga Wagga to Tumberumba. Eden to Bega, thence to Monaro. Kiama to Shoalhaven and Jervis Bay.

Morpeth to Grafton, thence to the Richmond and Tarago to Braidwood.
Tweed.

Gerogery to Corowa.

North Shore to Pearce's Corner.

Culcairn to Corowa. Culcairn to Germanton.

Richmond to Wallerawang.

Young to Forbes. Cobar to Wilcannia. Dubbo to Coonamble.
Dubbo to Werris Creek.

Dubbo to Forbes.

City Extension.

Mudgee to Coonamble. Forbes to Wellington, and Wellington to Werris

Creek.

St. Peters to Liverpool.

Connecting G.N. Ry. with G.W. Ry.

Moss Vale to Robertson.

Kentucky and Uralla to Inverell.

Musclebrook to Cassilis. Forbes to Wilcannia.

Goulburn to Crookwell and Taralga.

Coonamble to Walgett. Bowral to Robertson.

Gerogery to Corowa. Guyra to Inverell *via* Wandsworth and Tingha. Breadalbane to Crookwell.

Grafton to Tenterfield.

Eden to Candelo, thence to Cooma.

Forbes to Wellington. Perth to Rockley. Cooma to Bombala. Grafton to Glen Innes.

List of Trial Surveys applied for and not granted during the years 1880, 1881, 1882, and 1883.

Narrabri to Walgett. Tenterfield to Byron Bay. Urana to Jerilderie. Scone to Merriwa and Cassilis. Jerry's Plains to G.N. Ry. Glen Innes to Emmaville. Flying Survey to Oberon.
Ry. to Fish River Caves via Tarana or Rydal.
Pitt Town to Mulgrave.

Engineer-in-Chief for Railways Office, Sydney, 4th March, 1884.

Casino to Richmond. Armidale to Inverell. Willow Tree or Quirindi to G.W. Ry. Quirindi to Forbes. Coonabarabran Survey. Oberon to Rydal: Cassilis to Coolah.

South Grafton up the Valley of the Orara River.

NEW SOUTH WALES.

RAILWAY TRIAL SURVEYS.

(APPLIED FOR AND GRANTED IN 1880, 1881, 1882, AND 1883.)

Ordered by the Legislative Assembly to be printed, 21 May, 1884.

FURTHER RETURN, laid upon the Table of the House in accordance with promise made by the Honorable the Secretary for Public Works, in answer to Question No. 4 on Votes and Proceedings No. 62, of the 26th February, 1884,—

"The cost of all Trial Surveys during the years 1880, 1881, 1882, and 1883."

RETURN of Amounts expended on Trial Surveys from 1880 to 1883 inclusive.

			1		
Name of Survey.	1880.	1881.	1882.	1883.	Total.
Nyngan to Cobar, and Cobar to Louth	1	£ s. d. 657 1 4	£ s. d.	£ s. d.	£ s. d.
Glen Innes to Inverell Trial Bay to Armidale	10 3 2	1,470 5 0 1 19 5	970 9 6 206 14 8	1,160 8 11 898 10 6 1,768 0 0	2,640 17 1 1,870 19 5
Narrabri to Moree Gundagai to Tumnt	••••••		771 5 7	1,768 0 0 165 8 7 190 7 9 54 16 11	1,974 14 8 936 14 2 190 7 9 216 4 6
Wagga Wagga to Tumberumba Eden to Bega, thence to Monaro Kiama to Shoalhaven and Jervis Bay. Morneth to Grefton the	************		130 6 11 536 4 11	676 3 7 7 10 0 377 13 9	806 10 6 543 14 11 377 13 9
Morpeth to Grafton, thence to the Richmond and Tweed North Shore to Pearce's Corner Culcairn to Corowa		••••••	71 7 2	979 11 5 85 7 2	1,050 18 7 85 7 2
Richmond to Wallerawang Dubbo to Coonamble	••••••		**********	77 8 11 186 10 10 624 3 9	77 8 11 186 10 10 624 3 9
Dubbo to Forbes City extension		10 10 0	14 6 5	585 12 10 694 12 11 967 6 7	585 12 10 694 12 11 967 6 7
Forbes to Wellington, and Wellington to Werris	••••••		••••	1,427 11 8 655 6 8	1,452 8 1 655 6 8
Kentucky and Uralla to Inverell. Musclebrook to Cassilis		••••••	· · · · · · · · · · · · · · · · · · ·	162 4 1 213 5 10 54 16 11	162 4 1 213 5 10 54 16 11
Goulburn to Crookwell and Taralga Coonamble to Walgett	**************	*********	•••••••	293 13 8 362 1 10 209 18 0	293 13 8 362 1 10 209 18 0
Tarago to Braidwood. Guyra to Inverell, via Wandsworth and Tingha		***********	•••••••	185 17 2 99 0 3 98 4 2	185 17 2 99 0 3 98 4 2
Eden to Candelo, thence to Cooma Cooma to Bombala Tenterfield to Byron Bay		***********	••••••••	$\begin{array}{c cccc} 15 & 7 & 2 \\ 698 & 9 & 2 \\ 553 & 17 & 2 \end{array}$	15 7 2 698 9 2 553 17 2
	***		************	680 4 1	680 4 1

RETURN of Amounts expended on Trial Surveys—continued.

Name of Survey.	1880.	1881.	1882.	1883.	Total.
Blayney to Murrumburrah Hay to South Australian boundary Narrandera to Jerilderie To connect Bombala with Southern Line Carcoar to Forbes Narrandera to Urana Narrandera to Hay Blayney to Carcoar and Forbes Albury to Wodonga Hay to Lachlan River Newbridge towards Cowra Sydney to Newcastle Gunnedah to Narrabri Narrabri to Mungindi Murrumburrah and Young to Grenfell and Forbes Clarence to New England Glen Innes to Tenterfield Connecting Great Southern Railway with Bombala, Cathcart, and Eden Goulburn to Cooma Homebush to Waratah Candelo to Bega Jamberoo to Shoalhaven Forbes to Grenfell Parkes to Grenfell Orange to near Forbes Wellington and Dubbo to Forbes Capertee to Richmond Orange te Molong Colo Valley, Richmond, to point on Mudgee extension	371 4 11 1,232 5 2 229 7 10 145 5 3 504 14 7 778 7 7 23 13 5 89 9 10 96 19 2 2,924 8 11 274 16 5 8 3 2	£ s. d. 141 14 4 68 16 7 4 15 8 609 14 3	£ s. d. 105 7 11	£ s. d. 306 15 2 2,280 12 6 212 10 5 726 2 6 278 7 11 124 16 6 1,369 14 6 159 19 9 31 8 3 10 19 5 31 10 9	£ s. d. 2,145 4 11 826 19 6 376 0 7 1,841 19 5 229 7 10 145 5 3 504 14 7 842 11 4 254 8 1 89 9 10 96 19 2 4,355 8 8 274 16 5 8 3 2 1,367 15 1 10,337 15 7 87 14 4 2,126 18 11 51 19 6 21 17 11 212 10 5 726 2 6 278 7 11 124 16 6 1,369 14 6 1,369 14 6 159 19 9 31 8 3 10 19 5
	9,591 9 10	7,913 13 10	11,151 5 3	20,742 9 10	49,398 18 10

Note.—The proportion for clerical assistance when ascertained is to be added to the expenditure for 1883.

1883.

(THIRD SESSION:)

LEGISLATIVE ASSEMBLY.

SOUTH WALES.

RAILWAY TRIAL SURVEYS.

(REPORTS OF SURVEYORS MELROSE AND MILLER ON PROPOSED LINES CULCAIRN TO GERMANTON AND TUMBERUMBA, AND CULCAIRN TO COROWA.)

Ordered by the Legislative Assembly to be printed, 9 October, 1883.

LAID upon the Table of the Legislative Assembly, in pursuance of the Answers made by the Honorable the Secretary for Public Works to Mr. Loughnan's Question No. 8 and Mr. Lyne's Question No. 4 on Notice Papers of the 31st August, 1882, and 6th February, 1883, respectively,-

- "Copy of Mr. Surveyor Melrose's Report, dated 25th August, 1882, on
- " proposed Railway Lines from Culcairn to Germanton and Tumberumba,
- " and from Culcairn (or Gerogery) to Corowa, and
- "Copy of Mr. Surveyor Miller's Reports, dated 31st October and 6th
- "November, 1882, together with two plans."

SCHEDULE.

PAGE	Ву	Tumberumba.	a Wagga and	ı Wagga	y betweer	f countr	examination of	1882, upon	d 25th August, yor Melrose	. Report, da Mr. Sur	1.
1	ımba.	ı, and Tumberu	n, Germantor	Culcairr	between	country	examination of	1882, upon	i 31st October, rveyor Miller	Report, da By Mr. S	2.
2	ween	prowà, ánd bet	ogery and Co	een Ger	try betw	of cour	n examination eyor Miller	r, 1882, upo y Mr. Surve	d 6th Novembe nd Corowa. B	. Report, dat Calcairn	3.
4											

No. 1.

Mr. Surveyor Melrose to The Engineer-in-Chief for Railways.

Report upon examination of country between Wagga Wagga and Tumberumba, with a view to Railway Extension.

Sir, I have the honor to report, in accordance with your instructions, upon the country between

I have the honor to report, in accordance with your instructions, upon the country between Wagga Wagga and Tumberumba, with a view to railway communication.

The line I would recommend for trial survey commences at the South Wagga Wagga Railway Station, altitude about 604 feet, bearing south-easterly to the left of Villons Hill to Walsh's slaughter-yard; thence by Isaac Anneson's house to the south-east end of Gumly Gumly Common; thence through Graham's farm to Donnelly's gate, near Hoollahan's farm; thence through a low gap in dividing range on James Backer's selection, crossing the Tywong Creek to reserve on Molong Run, at junction of O'Brien's and Kyeamba Creeks, crossing the Kyeamba reserved road; thence to M'Cormack's selection on Yellow Creek; thence following the course of Yellow Creek easterly to the old road leading to Mate's, and following the said road to Archer's

NΩ

Archer's selection on the Main South Road; thence south-easterly by Saw-pit Gully to College Gully, crossing the Comatawa Range and Macnamara Creek to Umbango Creek Public School; thence following the general course of the said creek upwards to Cobden's, leaving what is known as the "Long Gully" to the west, still following the course of Kyeamba Creek, reaching Jonathan Gully, to Dowty's farm, on the Sydney and Tumberumba Road; thence to Mann's Creek, and so south-easterly to Glenroy; thence still south-easterly to Tumberumba Common, the altitude of which is 2,400 feet above sea-level.

About 4 or 5 miles of the latter portion of this line will be rather heavy and will no doubt take some time to work up, but I am of opinion a pretty fair line may be found in the direction indicated on the

county map.

I have travelled over other parts of this range to the south-west and on to Carabost, but found I have, &c. nothing so good as the route above described. GEORGE MELROSE

No. 2.

Mr. Surveyor Miller to The Engineer-in-Chief for Railways.

Germanton, 31 October, 1882. I have the honor to report that, in accordance with your instructions, I have thoroughly examined the country lying between Culcairn and Tumberumba, and I beg to submit for your consideration the annexed results.

I have been unable to find anything like a satisfactory line for a trial survey with a view to railway

The difference of level between Culcairn and Tumberumba Common is nearly 1,700 feet, and the country for the first 38 miles rises very gradually up to a gap on the Carabost boundary, which is about 1,800 feet above the sea-level.

The table-land is reached 12 miles For the next 6 miles the country falls rapidly about 400 feet. further on, so that the remaining elevation, amounting to nearly 1,000 feet, must be gained in this

distance

Should it be thought advisable to run a trial survey from Culcairn to Tumberumba, the following is

in my opinion the most likely route :-

Starting from the 355-mile post, about three-quarters of a mile north of the Culcairn Station, and running in a general easterly direction to the township reserve of Morven; thence following up the Billabong Creek to the bridge where the main road from Culcairn to Germanton crosses that creek; thence following up the Ten-mile Creek and the main road to a point on the Germanton temporary Common; thence following the Main Sydney Road through the township of Garryowen to Mr. Kirby's conditional purchase on the Four-mile Creek; and thence in an easterly direction to a gap in the Dividing Range, which separates counties Goulburn and Selwyn; thence following the main road to the Tumberumba Common.

This line is the best I could find; but it would, I believe, be very expensive and heavy.

I have examined several suggested lines and amongst them the more direct route by way of Varra

I have examined several suggested lines, and amongst them the more direct route by way of Yarra Yarra, Yarara and Copabella; but on account of the extreme roughness of the country I believe them to be

I may remark that between Culcairn and Germanton I have preferred the north side of the Billabons to the more direct and easier route to be obtained on the south side, because the main road has already severed the north frontages to the creek, and because ballast can be obtained close to the line.

I have, &c., W. V. MILLER.

No. 3.

Mr. Surveyor Miller to The Engineer-in-Chief for Railways.

93, Cleveland-street, Redfern, 6 November, 1882. I have the honor to report that, in accordance with your instructions, I have examined the country between Gerogery Railway Station and the town of Corowa, with a view of finding a line suitable for railway communication, and I now beg to submit the results for your consideration.

The line would pass through a country composed principally of slight undulating hillocks, attaining

only at one spot any considerable elevation.

The following I would recommend for trial survey :--

Starting from the Gerogery Station and going due west until clear of the Gerogery Range; thence south-westerly, crossing the Waldundrie Road at a point about 2 miles south of Wedlock's corner; thence over a gap in the range to the head of Major's Creek; thence following that creek to a point about 3 miles north of the town of Howlong; thence south-westerly to a point on the main road from Corowa to Albury; thence following the general direction of that road to the town of Corowa.

I believe an easy and cheap line can thus be easily secured between Gerogery and Corowa.

I believe an easy and cheap line can thus be easily secured between Gerogery and Corowa:

I have also driven over great portion of the country between Culcairn and Corowa; it is almost all flat, with here and there small undulating hillocks. If it were proposed to run a trial survey between those places, I think a suitable line might be found passing through Waldundrie to a point south of the Oil-tree Lagoon, and thence south-westerly to Corowa.

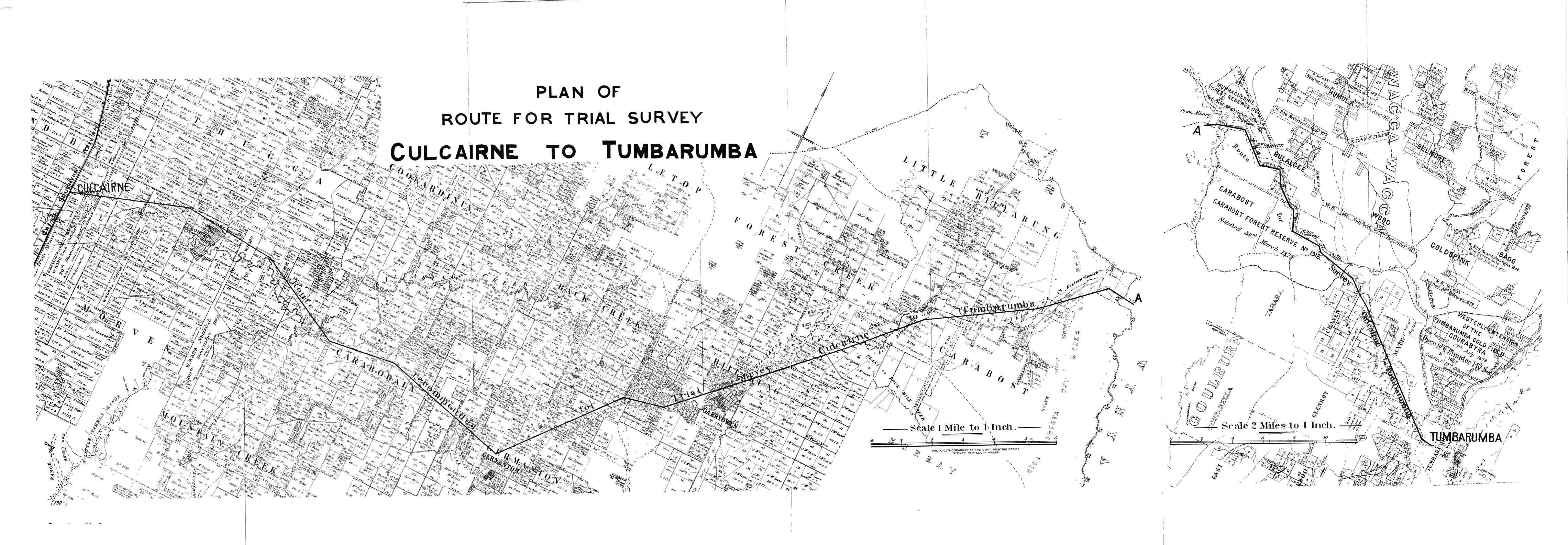
U. W. W. MILLER.

[Two plans.]

[28.]

Sydney: Thomas Richards, Government Printer.-18f3.





NEW SOUTH WALES.

DARLING HARBOUR RAILWAY.

(HIGH-LEVEL BRIDGE ACROSS.

Ordered by the Legislative Assembly to be printed, 13 June, 1884.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 16 November, 1883, That there be laid upon the Table of this House,—

- "Copies of all letters, plans, proposals, and minutes having reference to the
- "erection of a High-level Bridge across Darling Harbour Railway, at Mary
- "Ann Street"

(Mr. Merriman.)

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DARLING HARBOUR RAILWAY.

No. 1

Petition to Secretary for Public Works.

To the Honorable John Lackey, Esq., Minister for Public Works.

The memorial of the undersigned inhabitants, of holders of property, dealers, and persons engaged in business, at Darling Harbour, Ultimo, Pyrmont, Balmain, and surrounding districts, respectfully showeth :-

1. That the traffic upon the railway at Darling Harbour has increased, and is daily increasing, in a most unprecedented manner, and that the present arrangements for the traffic of vehicles and foot passengers are totally inadequate, and a continued source of danger to life and property.

2. That the detour now rendered necessary is a source of very great inconvenience, loss of time, and increase of expense to ourselves and all parties living on the western side of the railway line (in being thus practically cut off from the goods sheds), which your memorialists earnestly trust will be speedily removed.

3. That we have been informed and believe that a crossing place for vehicles has been already reserved by the Government, at the intersection of William Henry Street and the Railway Lines Reserve; we would therefore most respectfully press upon your consideration the absolute necessity of making the same available for vehicular traffic at once.

4. That we have learned (from statements in the public Press) that it is contemplated by the Government to resume land sufficient to enable Goulburn-street to be continued through to the reclaimed ground; we therefore beg respectfully to suggest, in that event, that the roadway may be continued across the lines to Harris-street, to the manifest public convenience and advantage.

5. From the same source we learn that you intimated to a deputation which waited upon you a few days ago that it was proposed to erect a steam crane on an elevated platform, and to run a passenger footway alongside; we however desire to point out to you that great as such proposed footway would be it is utterly inadequate to meet public requirements, as some provision for the crossing of vehicles is now absolutely necessary and daily and hourly more urgently required.

Your memorialists therefore beg that you will be pleased to take the foregoing into your earnest and favourable consideration and to give the necessary directions accordingly.

Sydney, February, 1879.

[Here follow 260 signatures.]

No. 2.

The Commissioner for Railways to The Crown Solicitor.

Level crossing over the Darling Harbour Branch Railway to admit of drays and other vehicles obtaining access to Pyrmont from Darling Harbour Wharf.

THE first question to be determined in connection with this matter is the liability of the Railway Department to afford a crossing over the line. It is alleged that when the land was taken to form the railway streets had been proclaimed and the right was reserved to open those streets across the line.

Will the Crown Solicitor be good enough to ascertain from the terms of the deeds of conveyance of the land in question whether such right was reserved, and advise me as to the particulars of such reservation (if any).—Ch.A.G., B.C. 13/3/79.

No. 3.

The Crown Solicitor to The Commissioner for Railways.

Crown Solicitor's Office, Sydney, 23 January, 1880. Sir, I have the honor to return herewith the papers relating to the application for a level crossing over the Darling Harbour Branch Railway to admit of drays and other vehicles obtaining access to Pyrmont from Darling Harbour Wharf, and, with reference to your inquiry as to the terms of the deed of conveyance of the land, to state the conveyance from the Messrs. Harris and others contains a reservation, as in the paper marked A, relating to Ultimo-street, Macarthur-street, and Ann-street, which refers to an agreement made between the Commissioner and the parties to that conveyance, bearing date 28th September, 1867. The paper marked B sent herewith is an extract of all material particulars from that agreement, and from it you will see the particulars of such reservation.

I have, &c.,

JOHN WILLIAMS, Crown Solicitor.

[Enclosure A to No. 3.]

Saving and reserving unto the said parties hereto of the first and second parts respectively and their respective heirs and assigns the rights of way and passage under the Railway Bridge at Ultimo-street and the right of making Bridges at Macarthur and Ann Streets and all other the rights with respect to the said Bridges as set out and mentioned in a certain Indenture bearing date the twenty-eighth day of September instant and made between the Commissioner for Railways of the first part the said John Harris George Harris John Harris Matthew Harris Margaret Harris William Henry Harris James Fullerton and Nancy Ann Harris of the second part the said James Fullerton of the third part and the said James Fullerton and John Harris of the fourth part.

[Enclosure

Enclosure B to No. 3.]

And the Commissioner for Railways for himself and successors doth hereby also covenant with the said James Fullerton and John Harris their heirs and assigns that in case at any time within the space of three years next following the day of the date of these presents the said parties hereto of the second part or any one or more of them their his or her heirs executors administrators or assigns shall be desirous of substituting and constructing in lieu of the present bridge or viaduct of a bridge or viaduct of the width of 66 feet to carry the said railway over the line of macarthur-street for the purpose of obtaining the like way or passage themselves as is hereby granted in the line of Ulmo-street or shall be desirous of building a bridge or viaduct in the line of Ann-street in lieu of the bridge or culvert existing at the present time immediately to the north of that street and of such desire shall give notice in writing to the Commissioner for Railways his successors or assigns within such time as will reasonably allow of the works required to be constructed in the terms of such notice being completed and finished in all things within the term of three years from the date hereof then and in such case after the expiration of such notice and subject to such provisions and precautions as the Engineer-in-Chief for the time being of the Commissioner for Railways his successors or assigns may direct or require the Commissioner for Railways aforesaid and his successors shall permit and suffer the person or persons giving such notice his her or their heirs executors administrators or assigns at his her or their own proper expense to build and erect such bridge or viaduct as aforesaid in respect of the matters aforesaid or any one or more of them so that in every case the works necessary for effecting the same shall be performed in a good substantial and workmanlike manner and with suitable material according to plans and specifications to be approved of before the commencement of the said work works of a more substantial or ornamental character than the average character of works for like purposes which shall at the time of giving such notice have been constructed by the Commissioner for Railways aforesaid upon the Great Southern and Great Western lines of railway in the said Colony.

Mr. Mason to see.—Chas. A.G., 28/1/80.

Seen.—W.M.

Commissioner, 3/2/80.

Minute of the Commissioner for Railways.

As no notice was given by the Messrs. Harris of their intention to make the bridges referred to within the prescribed time, viz., three years from 28th September, 1867, it would appear that the Department cannot now be called upon to give access over the line.

There is allusion made to a bridge or culvert existing at Ann-street—does this structure still exist? if not, it appears that there will be a claim to a right-of-way at this place.—Сн.А.G., 9/2/80. Mr. Mason.

The bridge near to Ann-street is still in existence, although not in a line with the street, but not far off.—W.M., 11/2/80. Commissioner.

No. 4.

Mr. Selfe to The Commissioner for Railways.

Sir.

183, Pitt-street, Sydney, 9 December, 1879.

I learn from the public papers that a deputation is about to wait on the Minister for Works with a view to obtain a crossing over the railway near to the Darling Harbour Depôt.

I have myself experienced the want of such a convenience, and having given the subject some attention do myself the honor to transmit for the consideration of your Department a plan which shows how the desired accommodation can be obtained without the disadvantages of a level crossing, and which will also save more than half-a-mile over the present means of communication.

I have, &c., NORMAN SELFE.

The accompanying drawing shows a bridge over the Darling Harbour Branch Railway and Pyrmont-The approach from Hay-street is by an incline of about 1 in 15, which gradient is continued right up to Harris-street. The railway is shown as crossed by a girder bridge, which reduces the gradient and does away with the many objections which would obviously attend a level crossing, where the traffic both by road and rail would be so continuous.—N.S., 9/12/79.

Minute of the Commissioner for Railways. I think a day is appointed for deputation. Let me have papers at once.—CH. A.G., 10/12/79.

No. 5. Report of Deputation.

Extract from Sydney Morning Herald, 13th December, 1879.

MESSRS. J. Harris, M.L.A., Alderman Meeks, W. M'Credie, and W. Cook, waited on Mr. Lackey yesterday with a view of inducing the Government to erect a bridge over Darling Harbour. Mr. Lackey said he would have the matter referred to the Railway Engineer for his report, but the Government could do nothing until such a report was before them.

Mr. Mason for report.—Ch.A.G., B.C., 26/2/80.

(Letter from Crown Solicitor, as to rights-of-way over the line at Darling Harbour herewith.)

A communication could be made between Sydney and Pyrmont, over the Darling Harbour branch, by continuing William-street on to Hay and Pier Streets, but the work would be costly, as it involves a great length of bridges on the approaches.—W.M., 19/3/80. Commissioner.

Minute of the Commissioner for Railways. To be considered at some future time; in the meantime a footbridge is being provided.—CH.A.G., 23/3/80.

No. 6.

No. 6.

Mr. W. Roylance to The Commissioner for Railways.

Trades and Labour Council of New South Wales,

Hyde Park Hotel, Bathurst-street, Sydney, 27 November, 1880. I have been directed by the above Council to call your attention to the dangers constantly incurred by the public at the railway crossing adjacent to the Goods Department, Darling Harbour. information laid before the Council it seems to be a constant practice for drivers to stop on the crossing, necessitating pedestrians using the road to travel round the trains, and in many cases before this is accomplished the train is in motion, to say nothing of the additional danger incurred from trains approaching on

the other line of rails. In the evening the risk referred to is increased, there being no lights or other means adopted to warn

the public of the danger incurred.

In wet weather, the elevation of the line being considerably above its immediate surroundings, the state of affairs is considerably aggravated by the slippery bank pedestrians are forced to climb to accomplish

the crossing.

From past experience and the uniform courtesy and attention paid to all matters the Council have thought fit to bring under your notice, we are of opinion the foregoing facts need only to be brought before you to ensure an amendment in the direction indicated, so far as is consistent with the interests of the public I have, &c., WM. ROYLANCE. at large.

General Secretary.

Minute of the Commissioner for Railways.

Will Traffic Manager see whether the cause of inconvenience complained of can be removed.—CH.A.G., 29/11/80.

Station-master, Darling Harbour, for report.—W. V. READ, 30/11/80.

This crossing place is between the goods shed points and the Atlas Works, where we have to make up all our trains; and as all the goods trains arrive here direct the crossing up to 12 noon is nearly always blocked; but I have a man placed there to warn people, and to prevent them crossing under the trucks when the trains are in motion. At night time we have several trains arrive which block the crossing until the trains are shunted; and I dont see how this can be altered, as we are so busy, and such heavy trains arriving; they all have to pull down to the goods shed points to clear the top points at the stone siding to enable shunting engine to get round the trains. It is very advisable to have an overhead bridge for foot passengers put up at once.—Chas. Paull, 1/12/80. Traffic Manager.

Minute of the Traffic Manager.

An overhead bridge or underground way for foot passengers should be provided at the place named as early as possible.—W.V.R., 2/12/80. Commissioner.

Minute of the Commissioner for Railways.

Inform Mr. Roylance of the report made, and add that the only remedy would seem to be the erection of a bridge for foot passengers.—Сн. A.G., 4/12/80.

No. 7.

The Commissioner for Railways to Mr. W. Roylance.

Sir,

Department of Public Works, Railway Branch, Sydney, 7 December, 1880.

In acknowledging receipt of your letter of the 27th ultimo, directing attention to the inconvenience and danger passengers using the railway crossing adjacent to the goods shed at Darling Harbour are subjected to through the line at this point being blocked by goods trains, I have the honor to inform you that the matter has been referred to the Traffic Manager, and from reports received I find that the inconvenience referred to is caused by the large goods traffic carried on at Darling Harbour, but every means is taken to prevent any accident happening to passengers through the running of the trains. The exigencies of the traffic however require that trains should stand on this crossing, and the only remedy appears therefore to be the erection of a footbridge for the use of passengers.

I have, &c.

CHAS. A. GOODCHAP,

Commissioner for Railways.

No. 8.

The Station-master, Darling Harbour, to The Traffic Manager.

Sir. Darling Harbour, 5 January, 1881. I would again draw your attention to the desirability of some immediate provision being made with respect to the level crossing, Ultimo. Thousands of people use this crossing in getting to the city, especially on Saturday nights, and although a man is on duty there night and day, at considerable expense,

his efforts, in many instances, to prevent people getting over and underneath the many trains are futile.

As a safety to the public who require this crossing, and to relieve myself or any of the staff of blame in case of accident, I trust some immediate steps will be taken in the matter. The level of the line at the crossing is about 10 feet on the one side and about 4 feet on the other side higher than the adjacent land, and I would suggest that an underhead bridge be constructed, which would save considerable expense, and be a greater benefit, as an overhead bridge would have to span 5 lines of rails.

I have, &c. CHAS. PAULL.

Minute

Minute of the Traffic Manager.

I would recommend a subway in preference to an overhead bridge.—W.V.R., 17/1/81. Commissioner.

Minute of the Commissioner for Railways.

Will Mr. Mason say what the cost of a subway would be, and whether it is practicable to make one. How far would the footbridge attached to overhead traveller meet the want.—CH.A.G., 20/1/81.

The footbridge alongside traveller would I believe suffice for the majority of foot passengers between Sydney and Pyrmont. As far as I remember, a subway would be impracticable, or at all events not advisable to make one.—W.M., 24/1/81. Commissioner.

Minute of the Commissioner for Railways.

The effect of the footbridge on overhead traveller must be tried first, before any additional outlay is ed.—CH.A.G., 28/1/81. Traffic Manager, B.C. incurred.—CH.A.G., 28/1/81.

Mr. Paull, Darling Harbour, to see.—W. V. READ, 31/1/81.

Seen; but some time since the Commissioner issued strict instructions to prevent the public using the Darling Harbour yard, &c., as a thoroughfare, and we were obliged to open the level crossing previously mentioned, the use of which is on sufferance only. As the footbridge attached to the overhead traveller, now in course of erection, will have several flights of steps leading into the yard, it is obvious that the traffic of foot passengers through the premises will be as great as previous to any check being put upon it, and now that all the inwards goods come to Darling Harbour (some of which are always outside the sheds in trucks) it would be miraculous if some three or four thousand persons of all classes would pass through day and night without committing some theft. The risk of fire would be increased, also the danger in shunting (especially at night time), if the public be allowed to use the yard as a thoroughfare. The entrance gates have been blocked with galvanized iron to prevent people getting through them; and taking the above facts into consideration, I feel sure the subway would be preferable.—Chas. Paull, 7/2/81. Traffic Manages.

Minute of the Traffic Manager.

The effect of letting the public into the Darling Harbour yard by using the footway in connection with travelling crane will be to increase the risk complained of in connection with the crossing now used, to say nothing of what has been pointed out of leaving the Darling Harbour yard open to the public day and night. I would like the Commissioner to inspect the locality.—W.V.R., 7/2/81.

Minute of the Commissioner for Railways.

Gates have been put up, or at all events authorized, which are to be closed, so that the bridge cannot be used after the yard is closed at night. I will inspect on an early day.—Ch.A.G., 10/2/81. Traffic Manager, B.C., 12/2/81.—G.B.

Minute of the Traffic Manager.

They are locked at night, and the public are kept out of yard; Yes, the gates have been put up. but if the footway spoken of is opened the yard will be accessible from it at all hours.—W.V.R., 15/2/81. Commissioner.

No. 9.

Mr. Selfe to The Commissioner for Railways.

Sir. 141, Pitt-street, 24 January, 1881. I had the honor, on the 9th of December, 1879, to forward you a plan showing how a bridge could be constructed over the railway at Darling Harbour, to accommodate the traffic in the neighbourhood and meet the wants which were expressed at a public meeting held just before. Subsequently a deputation

waited on the Minister for Works on the matter, on the 12th of the same month, and permission was given for a level crossing

As I have frequently witnessed the great danger which exists at such crossing, from the great number of people who use it and the frequency of the trains, and as, moreover, there is still no accommodation for vehicles, I have put my original proposals into more complete shape, and have the honor to enclose herewith a photograph and tracing showing the proposed improvements.

As a great portion of this much required bridge would be in the streets of the city, which are under the jurisdiction of the City Council, that body would probably be willing to bear a portion of the cost of its

The present Mayor, John Harris, Esq., was one of the deputation which waited on the Minister asking for this bridge, and at his request I am forwarding to the Council copies of my plans.

Should it be determined to construct the much needed work, I shall be glad to place my services at

the disposal of your Department and the City Council for carrying the same into effect.

My approximate estimate, including approaches, is £5,700. The proportion of this sum to be paid by the Government and the City Council would be a matter for mutual arrangement.

I have, &c.

NORMAN SELFE.

Resubmit in a week.—CH. A.G., 28/1/81. Corporation propose doing.—CH.A.G., 7/2/81.

Resubmitted.—5/2/81. Resubmitted, 1/3/81.

End of month to see what

No. 10.

Mr. Abigail, M.P., to The Secretary for Public Works.

589 and 591, George-street, Sydney, 18 February, 1881. At the request of a large and influential body of citizens residing and having extensive business premises at Ultimo and Darling Harbour, I beg to bring under your notice the pressing necessity of better means of road traffic. They respectfully suggest that Factory-street could, at a small cost, be taken through to Sussex-street; it is already partly carried through, and the only obstacles to its continuation are old dilapidated buildings, most of which have been condemned by the City Council. I

I have examined the locality, and it does appear to be reasonable.

I therefore venture respectfully to ask that you will be good enough to have the necessary inquiry made to see if the request may be complied with.

I may add that a petition is in course of signature setting this forth, and I would prefer if it could be done without. Asking your early attention,-I have, &c.

FRANCIS ABIGAIL.

Minute of the Secretary for Public Works.

Is it the case that the traffic here requires additional accommodation? I thought the grounds for complaint had been removed.—J.L., 22/2/81.

Minute of the Commissioner for Railways.

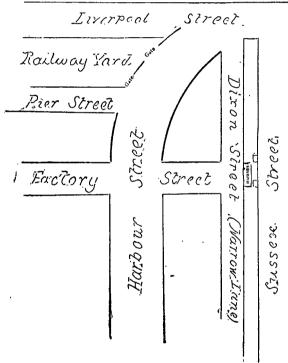
Put papers with this and ask Traffic Manager to report whether there is now much impediment to the vehicular traffic to and from Darling Harbour. We have widened Dixon or Harbour street, except in one Further outlets from the yard will ultimately be required.

Traffic Manager will please report early how the present traffic is being accommodated.—Ch.A.G.,

23/2/81

Goods Superintendent for immediate inquiry and report.—W. V. Read, 25/2/81.

The attached rough plan will serve to show at a glance the position of Factory-street and the proposed connection with Sussex-street, and there is no doubt if carried out will prove a great boon to many, as the opening of this street will avoid to a great extent the steep grade of Liverpool-street, and will therefore be much used, and will only mean, as stated, the removal of two old condemned houses and two or three old sheds at the back.—G. F. Evans, Traffic Manager, 1/3/81.



Minute of the Traffic Manager.

The proposed street would not facilitate the railway traffic. In the sketch enclosed, marked A, the portion of land it is now proposed to take in is marked blue; this would allow of drays getting through into Sussex-street, but it would be no more difficult to get round into Goulburn-street by way of Dixon than it would be by Sussex street; but the blue lines only show a portion of what it is intended to ask. I believe the portions of ground within the red lines are included in the scheme for improving Factory-street. Any work of the kind should I think be carried out by the Corporation, at least not by the Railway Department. An improvement that would assist the Railway Department would be the opening through of Goulburnstreet.—W.V.R., 7/3/81. Commissioner.

No. 11.

Mr. Jervis to Secretary for Public Works.

Sir, Ultimo Post Office, 17 February, 1881. At a public meeting held at the Congregational Church, Harris-street, on Wednesday, February 16th, for the purpose of urging upon the Government the absolute necessity of building a bridge across the

Harbour, the following resolution was passed:—

That a deputation should wait upon the Minister of Works to place before him the resolutions passed at this meeting, and that this deputation shall consist of the City Council, the Members for West Sydney, and the various Mayors of the Municipalities interested in this movement, and also such members of this meeting as shall now be nominated.

I shall feel honored if you will let me know when it will be convenient for you to receive this I have, &c., WALTER JERVIS, deputation.

Mr. Abigail informed that Minister would receive a deputation on this matter on Friday, the 11th, Railways, for requisite information. -J.R., 4/3/81.

No. 12.

Minnte of the Secretary for Public Works.

I pointed out to deputation that a portion of this belonged properly to the Corporation, and that if the Corporation were to place themselves in communication with the Department that we would be prepared to do that part of the work which belonged to the Railway Department. In the meantime instructions must be given for the traffic to impede this passenger thoroughfare as little as possible.—J.L., 11/3/81.

Traffic Manager, B.C.—G.B.

Minute of the Traffic Manager.

Seen. A footbridge would be a great convenience at the place named.—W.V.R., 22/3/81. Commissioner.

Minute of the Commissioner for Railways.

To await action of Corporation.—CH.A.G., 26/3/81.

No. 13.

Petition to Secretary for Public Works.

The Honorable the Minister for Works,-

We the undersigned wood, coal, and produce merchants, and others, residents of Darling Harbour and surrounding district, respectfully solicit that Factory-street may be continued through to Sussex-street, as great inconvenience is at present experienced by the public through the said street being, comparatively speaking, closed. We are, &c.,

> Biddell Brothers. Crawford R. Bedwell. Moir & Co. Goodlet & Smith. Dent & Hoskin. Seaforth Proctor. Augustus Peoghaft. A. Ferine. Thomas M'Pherson & Son. John J. Shipley. Walter Williams. John Edgington.

Robert Richards. Rock Pavement Company. Dunlop Gall & Co. J. Mitchell. Joseph Waderr. Andrew Wadsworth. Arthur Malin. J. Cross. William Bull. Cowell & Bootle. Alexander Morrison. William Hopkins.

Sydney Smith. Goodsell & Co. Thomas Daley. Walter Cheeseman. G. Layton. Henry Lee. Alex. W. Cormack. George Willis. W. E. Goodin. Robert Marsh. William Dunk Edwin Schofield.

Minute of the Commissioner for Railways.

Traffic Manager.—Chas.A.G., B.C., 5/3/81.

No. 14.

F. Abigail, M.P., to The Secretary for Public Works.

Sir, George-street, Sydney, 9 June, 1881. On February 18th I wrote you about carrying Factory-street through to Sussex-street, from Darling Harbour. I afterwards presented a numerously signed petition from property holders and residents of the locality in favour of the same. Not having heard if it were favourably considered or otherwise, I take the liberty of asking if anything has been done, and is there any hope that either Factory or Goulburn Street will be carried through. As this is a portion of my electorate, and the petitioners are daily asking me what has been done with their petition, I request the favour of your early reply.

I have, &c., F. ABIGAIL.

Minute of the Commissioner for Railways.

The Minister wishes Mr. Abigail to be informed that the measures suggested by the petitioners referred to for increasing the outlets from the Darling Harbour Wharf have not been lost sight of, but the consideration of the scheme has been postponed for the present pending the determination of some arrangements which are being made for the increase of wharf accommodation at Darling Harbour and approaches thereto.—CH.A.G., 10/6/81.

No. 15.

The Commissioner for Railways to Mr. Abigail, M.P.

Department of Public Works, Railway Branch, Sydney, 12 June, 1881. Sir, In acknowledging the receipt of your letter of the 9th instant, with reference to the petition presented by you, signed by several residents and property holders living in the vicinity of Factory and Sussex Streets, relative to the carrying of Factory-street, Darling Harbour, through to Sussex-street, I have the honor to inform you, by direction of Mr. Secretary Lackey, that the measures suggested by the retitioners referred to facility the couldn't four property the couldn't four property that the measures suggested by the petitioners referred to for increasing the outlets from Darling Harbour have not been lost sight of, but the consideration of the scheme has been postponed for the present pending the determination of some arrangements which are being made for the increase of wharf accommodation at Darling Harbour and the I have, &c., CH. A. GOODCHAP, approaches thereto.

Commissioner for Railways.

No. 16.

Minute of Traffic Manager.

I WOULD again call the Commissioner's attention to the urgent necessity for having a subway or overhead bridge constructed at Darling Harbour, where the line crosses William Henry Street.

The station-master reports that, although there is a man constantly on duty there, it is impossible to prevent the public from crossing the line at this point, and that sooner or later an accident is sure to occur, some persons even persisting in crawling under the trucks, notwithstanding all his endeavours to prevent

Will the Commissioner please give this matter his early attention.

W. V. READ, 28/12/81.

Minute of the Commissioner for Railways. Write to Town Clerk stating case, and ask if the Council is prepared to pay cost of approaches to the bridge.—CH.A.G., 29/12/81.

No. 17.

The Commissioner for Railways to The Town Clerk, Sydney.

Department of Public Works, Railway Branch, Sydney, 11 January, 1882. Sir, I have the honor to inform you that numerous representations, by deputations and otherwise, have been made to this Department as to the urgent necessity for having an overhead bridge constructed at Darling Harbour, where the line crosses William Henry Street. It appears from reports received that although a man is on constant duty there it is impossible to prevent the public from crossing the line at this point, and as the traffic is large there is great danger of some accident occurring. I have to ask whether the Municipal Council will bear the cost of the approaches, should it be decided by the Department to erect I have, &c. the over-bridge

CHAS. A. GOODCHAP, Commissioner for Railways.

No. 18.

The Station-master, Darling Harbour, to The Traffic Manager.

Darling Harbour, 20 January, 1882. Sir, I would again call your attention to the great danger that exists at this station in people crossing over the lines to Ultimo and Pyrmont. Only on Wednesday we had a very narrow escape of a little girl getting killed; there were two trains standing on the line, and the man in charge of the crossing was doing his best at one side of the line to keep the people from passing under the trucks until the engine was cut off and away, and while he was doing so this little girl got under on the other side, and just as she did there were some trucks shunded on the train at the other end, which caused the train to go on, and only the man in charge called out for her to lay down flat on her face in all probability she would have been killed; as the trucks only went about four lengths she met with no hurt.

I would mention that thousands of people cross this place in a week, and although the new bridge has been opened across the yard, where the travelling crane is, the people will not cross there—only just odd I can assure the Traffic Manager that the greatest danger exists at this crossing, ones through the day. especially on Saturday nights, when such numbers of people cross to town, and on their return many of them the worse for drink.

CHAS. PAULL.

Minute of the Traffic Manager.

I would again draw the Commissioner's attention to necessity for a footbridge or subway at the place named; the danger is very great, and a temporary footbridge could soon be put up, and at a not very great expense. Something should be done at once. I would ask that the crossing be closed until something is done.—W. V. READ, 20/1/32. Commissioner.

Minute of the Commissioner for Railways.
No reply received to our letter to Town Clerk of 11/1/82. Remind.—Сн. А.С., 4/2/82.

No. 19.

The Commissioner for Railways to The Town Clerk, Sydney.

Sir, Department of Public Works, Railway Branch, Sydney, 7 February, 1882.

I have to remind you that I have not yet received a reply to my letter to you of the 11th ultimo, respecting the necessity for a subway or overhead bridge to William Henry Street, Darling Harbour.

I shall be glad if you will furnish me with a reply at as early a date as possible. I have, &c.,
D. VERNON,

(Pro Commissioner for Railways).

Seen.-W. V. READ, 11/2/82. Traffic Manager to see.—G.B., 7/2/82.

No. 20.

Minute of Traffic Manager.

REFERENCE to my minutes of the 28th December, 1881, relative to the necessity there is for making either a footbridge or subway leading into William Henry Street, Darling Harbour, I shall be glad if the Commissioner will be kind enough to let me know what is being done in the matter.—W. V. Read, Commissioner

Papers herewith, Traffic Manager to see.—G.B., 17/4/82. Seen.—W. V. READ, 20/4/82.

Minute

Minute of the Commissioner for Railways.

Ask Town Clerk if the proposal of the Municipal Council to share in providing for the rest of this work has been abandoned.—CH.A.G., 5/6/82.

No. 21.

The Commissioner for Railways to The Town Clerk, Sydney.

Sir, Department of Public Works, Railway Branch, Sydney, 6 June, 1882. I have the honor to again draw your attention to my letter of the 11th January last, respecting the urgent necessity that exists for the construction of a subway or overhead bridge at William Henry Street, Darling Harbour, and have to ask whether the proposal of the Municipal Council to share in providing the cost of this work is abandoned.

Soliciting the favour of an early reply.

I have, &c., CH. A. GOODCHAP,

Commissioner for Railways.

No. 22.

The Town Clerk, Sydney, to The Commissioner for Railways.

Sir. Town Clerk's Office, Sydney, 15 June, 1882. Referring to your letter of the 6th instant, and to previous letters, on the subject of the construction of a subway or overhead bridge at Darling Harbour, I have the honor, by direction of the Right Worshipful the Mayor, to state that His Worship has had several interviews with the Honorable the Minister for Works on the matter, and is awaiting a further communication which the Minister promised should be forwarded after a reconsideration of the question as to whother the entire cost of the proposed work should not be defrayed by the Government.

I have, &c.,

CHAS. H. WOOLCOTT,

Town Clerk.

Minute of the Commissioner for Railways.

See if there be any papers on this subject in Public Works. I have not been made aware that a correspondence with the Corporation on this subject was being conducted in the ministerial branch. Ch.A.G., 17/6/82. Under Secretary for Public Works, B.C.

No correspondence has taken place in this office with the Town Clerk, but I understand that letter of 6th instant and other letters were sent from Railways.—J.R., B.C., 23/6/82.

Minute of the Commissioner for Railways.

Of course I was aware that we had sent a letter dated 6th June to the Town Clerk; it was to ask if the project had been abandoned. The reply says that they are awaiting a further communication, which the Minister promised should be sent. I was not aware, as I stated, that a communication had been sent from the ministerial branch, and it would seem none had been sent. The term "further communication" would therefore seem to be misleading.—CH.A.G., 30/6/82.

No. 23.

Minute of Traffic Manager.

With reference to my minutes of 28th December, 1881, and 12th April, 1882, relative to the necessity there. With reference to my minutes of 28th December, 1001, and 12th April, 1002, 10121. To the list for making either footbridge or subway leading into William Henry Street, Darling Harbour, will the Commissioner kindly let me know if anything is likely to be done towards erecting this footbridge or where we will be with the W. V. READ, 18/7/82.

Minute of the Commissioner.

I think the City Council should be informed that the Government will expect them to pay for the approaches to bridge, and will be unable to proceed with the work till they have consented to be at this cost.—Ch.A.G., 24/7/82.

Minute of the Secretary for Public Works.

Inform.—J.L., 4/8/82.

No. 24.

The Commissioner for Railways to The Town Clerk, Sydney.

Sir, Department of Public Works, Railway Branch, Sydney, 9 August, 1882.

Referring to your letter of the 15th June last, relative to the construction of a subway or overhead bridge leading into William Henry Street, Darling Harbour, I have the honor to inform you that your communication has been brought under the attention of the Secretary for Public Works, and he desires me to state, in reply thereto, that the Government will expect the Municipal Council to pay for the approaches to the bridge, and will be unable to proceed with the work until an intimation is received that I have, &c., C. A. GOODCHAP, the Council consent to be at this cost.

Commissioner for Railways.

Traffic Manager.—G.B. B.C., 9/8/82.

Seen.—W. V. READ, 14/8/82. Commissioner.

No. 25.

The Town Clerk, Sydney, to The Commissioner for Railways.

Town Clerk's Office, Sydney, 17 November, 1882. Sir. Referring to your several letters on the matter of the formation of the approaches to the proposed overhead railway bridge, Darling Harbour, I have the honor, by direction of the Right Worshipful the Mayor, to inform you that a recommendation will be submitted for the consideration of the City Council on the 5th proximo, for the payment of one-half the cost of carrying out the work in question. I have, &c.,
C. H. WOOLCOTT

Seen.—W. V. READ, 29/11/82. Traffic Manager to see. G.B., B.C., 23/11/82.

Town Clerk. Commissioner.

No. 26.

The Town Clerk, Sydney, to The Commissioner for Railways.

Town Clerk's Office, Sydney, 8 December, 1882. Sir, Referring to correspondence on the subject of the proposed construction of a subway or overhead bridge at the railway line at William Henry Street, Darling Harbour, I have the honor, by direction of the Right Worshipful the Mayor, to inform you that the City Council are of opinion that the entire cost of constructing a means of passage across the railway, as well as the approaches thereto, should be defrayed by the Government. I have, &c.,

CHAS. H. WOOLCOTT,

Town Clerk

Minute of the Commissioner.

Mr. Lackey has seen this paper and directed it to be put by for the present, in the expectation that the City Council will become more reasonable.—CH.A.G.

No. 27.

Minute of Traffic Manager.

I DESIRE to refer the Commissioner to my minutes of 8th December, 1881, 12th April, 1882, and 18th July, 1882, respecting the urgent necessity for the erection of an overhead bridge at Darling Harbour, where the line crosses William Henry Street. As my attention has been again drawn to the matter I shall be glad if the Commissioner will kindly let me know what prospect there is of the work being proceeded with. The population in the neighbourhood is increasing, and consequently there are now more people crossing the yard.

W. V. READ, 13/3/83.

Minute of the Secretary for Public Works.

I concur with Mr. Lackey that this expense should be jointly borne by City Council and Railway Department.—F.A.W., 19/6/83. Traffic Manager to see.—G.B., B.C., 20/6/83. Seen.-W. V. READ,

No. 28.

The Station-master, Darling Harbour, to The Traffic Manager.

You will remember that when the steam crane was first used and the overhead bridge finished at this station that instructions were given that the gates of the bridge should be opened daily (Sundays excepted) for the public to use when going to and fro from Ultimo and Pyrmont to Sydney. will remember that Mr. Goodchap was here with him at the time when the orders were given, and I pointed out that the crossing, which was about 100 yards from the bridge, would have to be used as well, when it was consented to. I would now respectfully ask that the use of this bridge for foot passengers be stopped, because there are not many who use it, but those who do have such a chance of seeing goods, &c., laying in the trucks and on the platforms as they pass to and fro through our yard, and no doubt this has had something to do with the pilfering that has taken place at times. If this bridge were closed we could then keep all persons out of the yard but those who had lawful business here. If it were closed I do not believe there would be a word of complaint from the public, because the greater majority by far cross over at the level crossing about 100 yards east of the bridge. At present numbers of larrikins get on the top of this bridge through the gates being open, and they give all kinds of annoyance to the watchmen, and not only that, they can take stock so well there of what is about the platform close by, and if closed it would stop all this. CHAS. PAULL, 25/5/83.

For the reasons given by Mr. Paull I think it advisable that the footbridge be closed. The Commissioner would perhaps approve.—W.V.R., 30/5/83. Commissioner.

Minute of the Commissioner.

The bridge must not be closed till the bridge over the line at present crossing is made. dent were to occur at the crossing any claim that might be made could be met by pleading that the Department has done its best to give a safe crossing by means of this overhead bridge. -Ch.A.G., 9/6/83.

-G.B., B.C., 11/6/83. Inf . Seen.—W.V.R., 15/6/83. Inform Mr. Paull.—W.H.C., 14/6/83. Commissioner.

No. 29.

Mr. Abigail, M.P., to The Secretary for Public Works.

Sydney, 7 August, 1883. I respectfully direct your attention to the extreme necessity of proceeding with the work of constructing the bridge over Ultimo at William Henry Street. Some dreadful accident will surely happen at this place if something is not done. People have to cross the railways, and men have to be stationed at this place to prevent loss of life. The people have no proper crossing, the bridge there being worse than useless. I may mention that plans, &c., have been taken out for the bridge, and there the matter stands. Asking your attention to this much-needed public work. I am, &c F. ABIGAIL

Minute of the Secretary for Public Works. Commissioner for Railways for report.—F.A.W., 8/8/83.

Minute of the Commissioner for Railways.
19/6/83. The Corporation ought to join in the expense of this very neces. See Minister's minute of 19/6/83. sary work.—CH.A.G., 14/8/83.

Minute of the Secretary for Public Works.. Inform Mr. Abigail.—F.A.W., 17/8/83. I concur.

No. 30.

The Commissioner for Railways to Mr. Abigail, M.P.

Department of Public Works, Railway Branch, Sydney, 20 August, 1883. With reference to your letter of the 7th instant, addressed to the Honorable the Minister for Public Works, urging that an overhead bridge should be erected at Darling Harbour over William Henry Street, I have the honor, by the direction of Mr. Secretary Wright, to inform you that while the necessity for this work is acknowledged by the Department, it is maintained that the City Corporation should join in the expense of carrying it out. This however they have so far refused to consent to.

I have, &c. CH. A. GOODCHAP, Commissioner for Railways.

No. 31.

Report of Deputation re High-level Bridge over Darling Harbour Railway.

A DEPUTATION comprising Messrs. Harris, Chapman, and Merriman, Ms.L.A., waited upon me to-day in reference to this matter. They stated that the work was very necessary, and considered the expense should be borne by the Government. I informed the deputation that while there was no objection on the part of the Government to bear the expense of providing the bridge, it was considered that the cost of making the approaches, &c., thereto, should be borne by the Corporation: they derived revenue from the streets, and ought, in fairness, to make the approaches. I promised to have a report made as to the probable cost of the bridge and the cost of the necessary approaches, and to communicate result to the Mayor, F.A.W., 21/12/83. Mr. Cowdery—Сн.А.G., В.С., 27/12/83.

Mr. Thomson, for cost of bridge and approaches.—G.C., 29/12/83.

Estimated cost of bridge and piers approaches 11,160

£21,180

No. 32.

The Town Clerk, Sydney, to The Under Secretary.

Town Clerk's Office, Sydney, 17 January, 1884. Referring to previous correspondence on the subject of the formation of the approaches to the proposed overhead bridge at the Darling Harbour Railway (William Henry Street), I have the honor, by direction of the Right Worshipful the Mayor, to inform you that the City Council have agreed to bear the cost of carrying out this work at an expenditure not exceeding £5,900.

It is suggested that the work can be more efficiently and economically performed in conjunction with that for the construction of the overbridge, and that if the Government will arrange to obtain one contractor for the completion of the whole of the work the Corporation will be prepared to contribute the sum named

upon the approaches to the bridge being made to the satisfaction of the City Surveyor.

I have, &c.

CHAS. H. WOOLCOTT, Town Clerk.

Railways.—J.R., B.C., 21/1/84.

I see no objection to the bridge and approaches being carried out in one contract under the supervision of this Department. Will Commissioner now please say if plans for bridge and approaches are to be made. G.C., 24/1/84. Commissioner.

Minute of the Commissioner. A plan was made by Mr. Norman Selfe, C.E., upon which I think the estimate was formed of cost of approaches, which is the amount named by Corporation as their contribution. Will Mr. Cowdery please report upon this plan.—CH.A.G., 24/1/84,

Mr. Thomson, for report on the plan.—G.C., 25/1/84 Report on Mr. Selfe's plan herewith.--G.C., 2/2/84.

High-level

High-level Crossing, Darling Harbour.

The plan of Mr. Selfe provides for an iron bridge over the railway lines and Pyrmont-street, in three spans of 85, 35, and 75 feet respectively, with stone viaduct approaches and retaining walls, 310 feet long on the Sydney side, and 190 feet long on the Pyrmont side, giving a total length of bridge and approaches of 695 feet. The width of the structure is 30 feet overall, which, deducting the parapets and kerbing, will-leave a roadway 18 feet wide and one footpath 8 feet wide. The gradients on the approaches are 1 in 10 on one side and 1 in 15 on the other; these might probably be improved when more accurate levels have been taken. By having the bridge in three spans two piers will be inside the railway fence and take up a large space of ground which otherwise could be used for additional siding accommodation, and I should therefore recommend to make the bridge in two spans of about 100 feet each, in order to preserve the full width of the railway land and have it available for other purposes. The cost of the bridge will also be reduced through there being one pier less to construct. Instead of having the main girders of the plate web type, as shown on the plan, I would suggest that it be constructed with open or lattice webs, as giving a lighter and better looking structure and more in agreement with the spans of the bridge.

The altered position of the piers and the effect of the same with regard to the railway property is shown in red on the plan. On the point of economy, I think it will be advisable to construct the approach viaducts of concrete and brickwork, instead of stone, as indicated on the plan, the difference in cost being some £5,000 in favour of the former. The total estimated cost of this structure, as per detailed estimate attached, is £21,180—the cost of the iron bridge and piers for the same being £10,020, and of the approaches on both sides, £11,160. In this estimate is included wooden cube paving on the bridge, and stone cube paving on the approaches. I do not think wooden paving will be suitable for the latter on

account of the rather steep gradients.—Max Thomson, 28/1/84.

Minute of the Commissioner.

It was understood that the work was to be carried out, if the Corporation would pay the cost of the approaches to the bridge; the whole cost is estimated as under-

£10,020 Bridge Approaches ... 11,160 £21,180

The Corporation however seem by their letter to limit their liability to £5,900. 1 do not know whether the Government will be prepared to proceed with work on these terms.—Ch.A.G., 4/2/84.

Minute of the Secretary for Public Works.

I should like Mr. Cowdery to report fully upon this matter, and whether in his opinion Mr. Selfe's plan is the best and cheapest that can be adopted; and if not, what plan he would suggest in place of it, and cost of bridge and approaches.—F.A.W., 6/2/84.

Memo.—I have again to ask that the papers respecting high-level bridge, Darling Harbour, and at William Henry and Mary Ann Streets, may be returned without further delay.—G.B., 24 with section.—G.C., 8/3/84. Section received; report herewith.—M.T., 10/3/84. Mr. Thomson -G.B., 25/2/84. An estimate of the bridge has been prepared, and I forward herewith a report in reply to Minister's minute of 6/2/84.—G.C.,

13/3/84

With the modifications mentioned in my report of 28/1/84 (viz., to construct the approaches of brick, instead of stone, and altering the spans of the bridge over the railway and Pyrmont-street, the plan for the crossing as proposed by Mr. Selfe appears to be the one best adapted for the purpose. As the crossing must of necessity be substantially constructed, on account of the heavy traffic it will have to carry, it will not be advisable to construct the approaches of timber. A portion of the Sydney approach (from B to C on the plan) might be constructed with iron girders and floor on brick piers, in place of arches, but as the cost will be the same in either case I should recommend the latter plan, as presenting a better and more uniform appearance.

Since writting my report of 28/1/84 I have had a section taken along the site of the crossing (shown in red on plan), and I find from the same that the approach on the Pyrmont side, as shown on Mr. Selfe's plan, can be considerably reduced, the whole required to be done on this side being merely retaining walls for a short distance, in consequence of which the estimated cost of the approaches will be reduced to £8,500; this includes the cost of concreting and paving with stone cubes. The concreting and paving might be left to be done at some future time, in which case the first cost of the approaches will be £6,500. The estimated cost of the bridge over the railway and Pyrmont-street (200 feet long) with piers is £10,020.—

M.T., 10/3/84.

No. 33.

Mr. N. Selfe to The Commissioner for Railways.

141, Pitt-street, Sydney, 16 February, 1884. I have the honor to submit an application for the payment of a professional commission under the following circumstances:

In the year 1879 the great danger and inconvenience to the citizens of the railway crossing was forcibly

brought under my notice at Darling Harbour.

After ascertaining from Mr. Mason, the then Engineer for Existing Lines, that he would not consider it an unprofessional act if I addressed you on the subject, I had the site surveyed, devised a scheme of crossing, and had plans made. I forwarded these to you on 9th December, 1879.

During 1880 some accidents occurred and the traffic increased, and a deputation waited on the

Minister about the matter getting serious, which induced me to further elaborate my proposals.

On January 24th, 1881, I wrote you, with further plans, and at the same time wrote to the Municipal Council of the city, in both cases offering to carry out the work on the joint account of the Government and the city.

In March, April, and May I was in communication with the city authorities, who had asked for more detailed information; this was forwarded by me, and also a plan by which the gradient was improved from 1 in 15 to 1 in 20.

I now learn the City Council have voted £5,900 towards their portion of the work, and that the Government are to carry it out, the Honorable the Secretary for Works having agreed to do so.

Under the circumstances, that I have done all the initiatory work, I trust you will consider me entitled to $2\frac{1}{2}$ per cent. or one-half the full commission on the Government portion of the work. I understand the Council will do the same on their portion.

I forward with this five drawings made by me in bringing the work out, also a photographic copy of general picture sent to the Town Hall. It is probable that the work will now be done on a more liberal basis than my first proposals, and at greater cost.

I would consider a commission on £5,000 a fair consideration for my services; this, at $2\frac{1}{2}$ per cent., amounts to £125. As I am leaving the Colony next month I could not undertake the work, unless it was deferred for twelve months, even if so desired, so trust my application will meet your approval.

I have, &c.,

NORMAN SELFE, M.I.C.E., M.I.M.E.

[Enclosure to No. 33.]

Dr. to Norman Selfe.

NEW SOUTH WALES.

Pay Voucher, No.

• •	Amount.
Professional services in connection with bridge from Harris-street to Hay-street, Sydney, via William-Henry Street and over Darling Harbour Branch of Great Southern and Western Railway, to be built at joint expense of Government and Municipal Council of Sydney	£ s. d.
Survey and Five Plans, 1879 to 1881 Commission at the rate of 2½ per cent. on £5,000	
Total£	125 0 0

I hereby authorize the amount of the above certificate in my favour to be paid on my behalf to Commercial Bank.

NORMAN SELFE.

Minute of the Commissioner for Railways.

Mr. Cowdery for report. To what extent have Mr. Selfe's plans been availed of by the Department.—CH.A.G., 18/2/84.

Mr. Selfe's plans have not been availed of by the Department, and I am not aware that he has any claim. I forward herewith report of City Council on same question, which they decided should not be acceded to.—G.C., 7/3/84. Commissioner.

Extract from Report of Sydney Municipal Council.

"An application was received from Mr. N. Selfe for payment of the sum of £142 10s, being commission at the rate of $2\frac{1}{2}$ per cent. on an estimate of the cost of a proposed bridge at William Henry Street. The Town Clerk stated that applicant had not been engaged by the Council in this matter, and the meeting decided the application could not be acceded to."

In a week.—12/3/84.

Minute of the Commissioner.

It would seem that Mr. Selfe's plan has in no way been adopted (see Mr. Cowdery's report of 7/3/84 on 84/5,050 herewith), and that the estimate according to Mr. Cowdery's design is—

Bridge... $\pounds 10,020$ Approaches, 1st estimate £11,160, since reduced to ... 6,500 $\pounds 16,520$

In Mr. Selfe's letter of January 24th, 1881, he said that the approximate cost of bridge and approaches was £5,700—how is this difference accounted for? Mr. Cowdery (through Mr. Max Thomson's report of 28/1/84) seems to make some modification in Mr. Selfe's plan, which is said to have the effect of reducing the cost. This makes the matter somewhat complicated. It will be necessary to make a fuller explanation.—CH.A.G., 21/3/84. Mr. Cowdery, B.C.

Mr. Thomson for clear and full explanation.—G.C., 24/3/84. Full explanation herewith—G.C., 26/3/84.

The only way of accounting for the difference between the Department's estimate and that of Mr. Selfe is that the latter must either have miscalculated the quantities and cost of the work as proposed by himself or else made a clerical error, as it is evident that 200 feet of bridge and about 500 feet of approaches cannot be constructed for the sum of £5,700; in fact £25,700 would be nearer the mark for the class of work indicated on Mr. Selfe's plan, viz., stone approaches and piers. Probably a clerical error has been made in omitting the figure 2 before the 5. My first estimate (28/1/84) was based on the levels shown on Mr. Selfe's plan, consequently the length of approaches to be estimated for would be the same as shown by Mr. Selfe. The design of the bridge was however altered, as well as the construction of the approaches, brickwork being substituted for stonework in the latter. Since then accurate levels were taken along the site of the structure (shown in red on plan), from which it was seen that the levels as shown by Mr. Selfe were not correct, and that as a consequence the length of the approaches could be reduced, with a corresponding reduction,

reduction in cost; and a further reduction was made by eliminating the cost of concreting and paving the approaches, the estimated cost being then, as stated in my report of 10/3/84, as follows:-

> £10,020 Approaches ...

> > £16,520

The Engineer for Existing Lines.

Max Thomson, 26/3/84.

Minute of the Commissioner. See my minute of 28/3/84 and Minister's decision, that if Mr. Selfe will consent to carry out his design for £5,700 full commission will be paid him.—CH.A.G., 29/3/84.

No. 34.

Mr. N. Selfe to The Commissioner for Railways.

Sir, Sydney, 13 March, 1884. Adverting to my letter in which I ask for a commission on the bridge to be constructed over

the railway at William Henry Street, and dated the 16th ultimo, I find that a newspaper report entirely misrepresents the true state of affairs as to the part the Municipal Council of the city plays in the matter.

I have therefore the honor to inform you that when I wrote to you on January 24th, 1881, I also wrote to the City Council in similar terms. The only reply I received to that letter was one asking for more plans and information, as per copy enclosed and marked A, and dated the 28th March the same year. Acting on this, I had further drawings and surveys made, and from a conversation with the City Surveyor suggested an alteration of the roadway over the girders, instead of lengthening the approaches, to get a better gradient; these plans were furnished, and I then received the letter marked B, which, with the other, identifies the Council with my scheme. Had nothing been done with my proposals I should of course have no claim upon either you or the City Council, but as my proposals and plans have been adopted and the money has been voted (by the city) to carry the work into execution, I most respectfully submit that I have a valid and equitable claim for repayment of my services, and the newspaper report is wrong, or the Council are not properly informed in the matter. I have no doubt, now that similar particulars are laid before them, that they will pay the commission for their part of the work. I have, &c. NORMAN SELFE.

 $\lceil Enclosures.
brace$

The City Surveyor to Norman Selfe, Esq.

Sydney, 28 March, 1881.

HAVING been instructed to report on probable cost of erecting approaches to your proposed bridge over railway at William Henry Street, I shall be obliged if you will let me have tracings of your scheme, to enable me to estimate the quantities, and also any information you may possess on the subject.

A. C. MOUNTAIN.

The City Surveyor to Norman Selfe, Esq.

Sydney, 2 June, 1881. I HAVE duly received your letter covering tracings of improved gradient for your contemplated bridge over Darling Harbour Railway, and think it will be a material advantage over the former very steep slopes. I had unfortunately already reported on your scheme, before receipt of the tracing, and suggesting that the grade should be eased; as this is now done, however, the matter is settled.

Minute of the Commissioner.

The papers about this bridge are being dealt with separately. I have asked for a further report.

This will await result.

It will be seen from the report from the Engineer for Exising Lines that Mr. Norman Selfe's plan has not been adopted, and that his estimate of cost of bridge and approaches was altogether absurdin fact it can only be explained by the assumption that the figure 2 was omitted before the figures £5,700, and that they should have been £25,700.—Ch.A.G., 28/3/84.

Minute of the Secretary for Public Works.

If Mr. Selfe will undertake to carry out this work at his estimate, £7,500, he should be employed to do so and paid full commission. He had therefore better be seen.—F.A.W., 29/3/84.

Mr. Selfe left for England on 27th, last Thursday, and will be absent from the Colony twelve or eighteen months.—L. P. IREDALE, 31/3/84.

Minute of the Commissioner.

Minister to see.—CH.A.G., 1/4/84.

Minute of the Secretary for Public Works.

Inform City Council that cost of approaches will be £6,500.—F.A.W., 4/4/84.

No. 35.

The Commissioner for Railways to The Town Clerk, Sydney.

Department of Public Works, Railway Branch, Sydney, 7 April, 1884. In adverting to the correspondence that has passed on the subject of the formation of the approaches to the proposed overhead bridge at William Henry Street, Darling Harbour, I have the honor to inform you that it is estimated the cost of the approaches will amount to £6,500, and I have to ask whether your Council is prepared to contribute that sum for the work referred to.

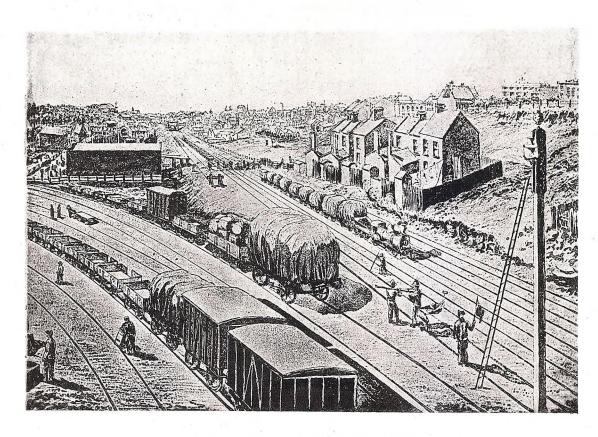
I have, &c.

CHAS. A. GOODCHAP

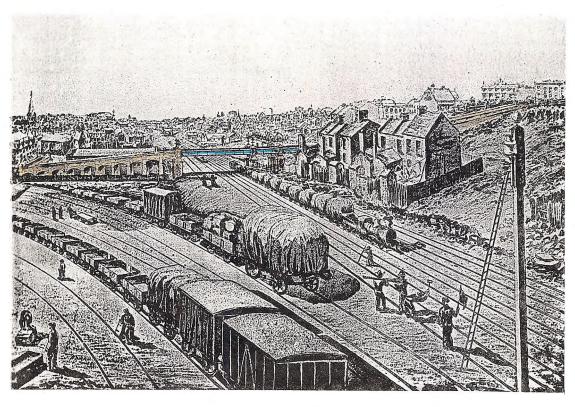
Commissioner for Railways.

(p. D.V.)

[Three maps and two photographs.]



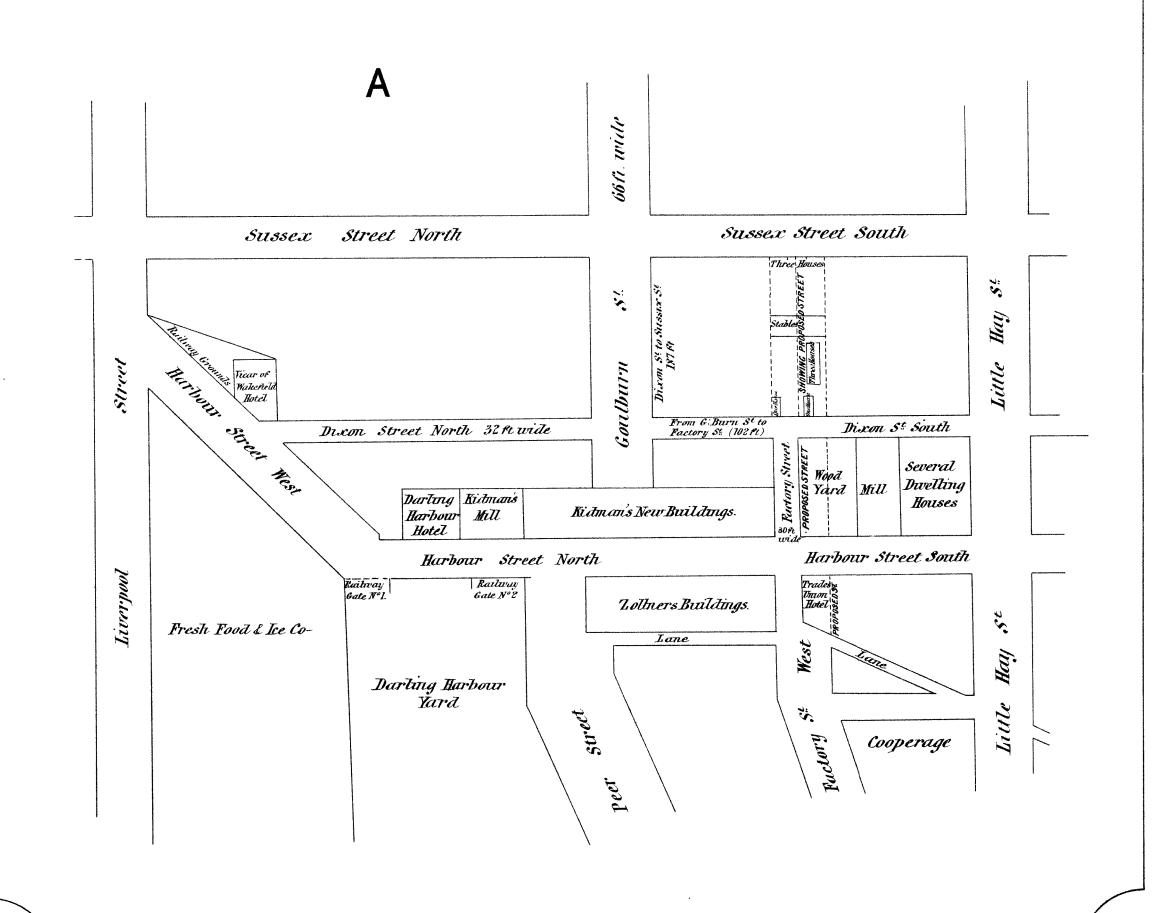
DARLING HARBOUR BAILWAY-CROSSING, FROM HAY TO HARRIS STREET.



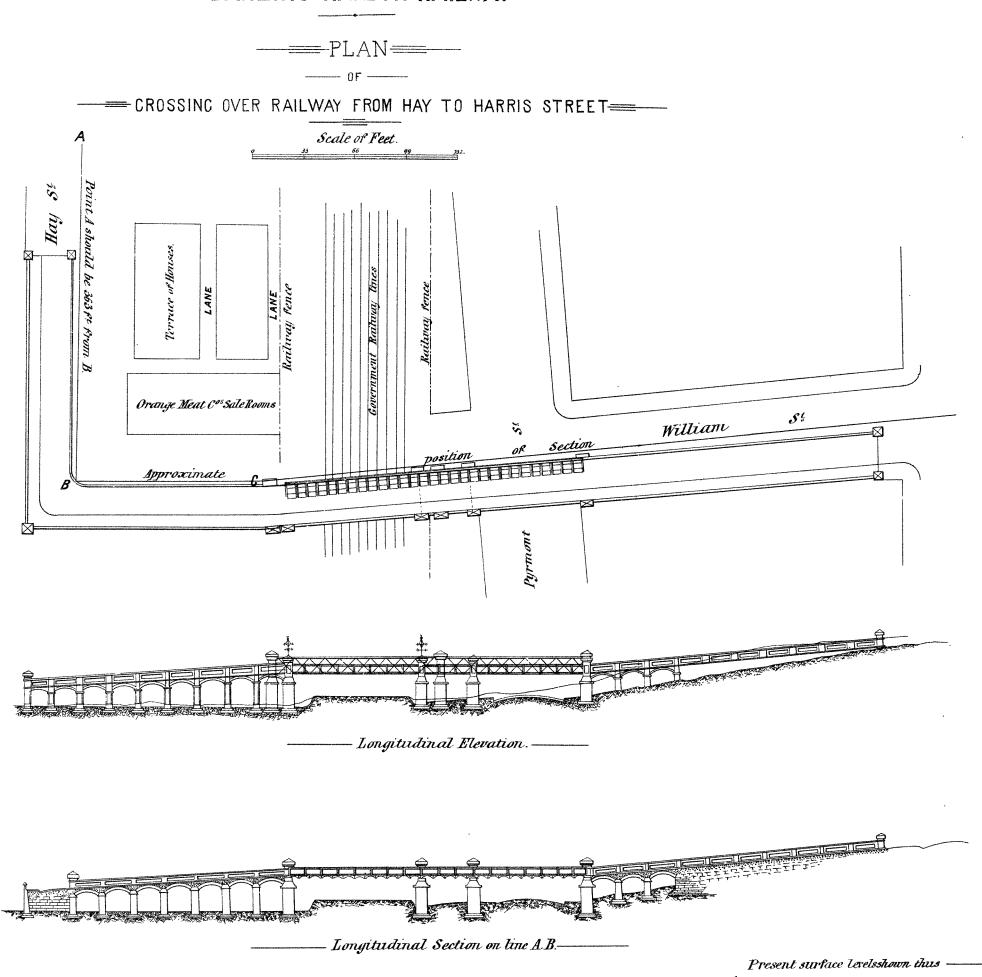
DARLING HARBOUR RAILWAY-CROSSING, WITH BRIDGE AS PROPOSED BY NORMAN SELFE, ENGINEER.

PLAN

SHOWING PROPOSED STREET DARLING HARBOUR



DARLING HARBOR RAILWAY



Section on line C.D.———

Section on line E.F.—

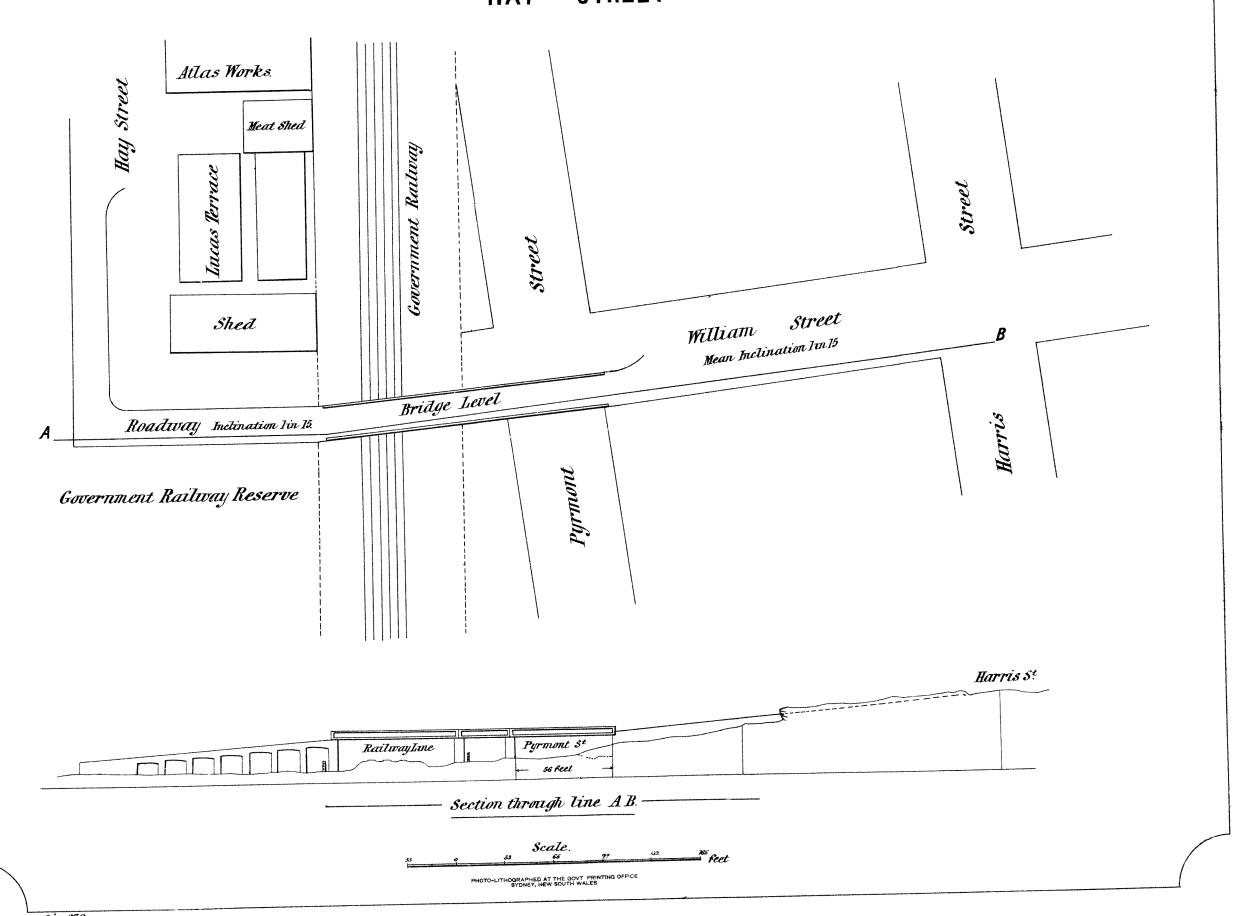
DARLINC HARBOR RAILWAY DEPÔT

SKETCH OF

PROPOSED BRIDCE

FOR CROSSING THE RAILWAY LINE AT

HAY STREET



1883.

(THIRD SESSION.)

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

ILLAWARRA RAILWAY.

(PROPOSED DEVIATION-CORRESPONDENCE, PLANS, &c.)

Ordered by the Legislative Assembly to be printed, 14 November, 1883.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 16th October, 1883, That there be laid upon the Table of this House,—

- "(1.) Copies of all Correspondence, Minutes, or other Documents, between the Colonial Secretary and any member of the present Government, or any other person, in reference to the proposed deviation in the Railway "Line to Illawarra, as suggested by the Colonial Secretary."
- "(2.) Copies of all Correspondence, Minutes, or other Documents, between "the Colonial Secretary, before he performed the duties of Minister for "Works, whilst he was performing the duties of Minister for Works, and "since then, and the Engineer-in-Chief for Railways, or any other official "or person, in regard to the Illawarra Railway.
- "(3.) Copies of any Correspondence, Minutes, or other Documents, between the present Secretary for Works and the Engineer-in-Chief for Railways, and any other person or persons.
- "(4.) Copies of all Plans of the proposed deviation in the Illawarra "Railway, particularly showing the names of all persons who own land "which the proposed deviation of the Illawarra Railway would run "through."

(Mr. McElhone.)

ILLAWARRA RAILWAY.

No. 1.

Trial Surveys—Sydney to Wollongong, 1873, 1874, and 1875.

Mr. R. D. Stephens to Engineer-in-Chief.

Sir,

Wollongong, 27 November, 1873.

I beg to inform you that I have partially examined the country between Sydney and Bulli. I am of opinion that a practicable route will be found by crossing George's River at Tom Ugly's Point, following up Gwaley Creek, then across the Goumea Range along Port Hacking Creek, crossing the Bulgo Range (by tunnel 25 chains in length and at an elevation of 350 feet above sea-level), and then descending the hill-side to Bulli; this will involve a tunnel about 50 chains in length at Coal Cliff, but the tunnel last mentioned is unavoidable no matter in what direction the line is brought.

The country for 3 miles south of Coal Cliff is awkward, owing to precipitous spurs following the coast-line so closely but I believe that a gradient of 1 in 80 for 3 miles will gurmanut the difficulty of

coast-line so closely, but I believe that a gradient of 1 in 80 for 3 miles will surmount the difficulty (I make it 1 in 100, but prefer to stake to 1 in 100, to be on the safe side). From this point into Wollon-

gong the country is comparatively easy.

I have examined two routes between Sydney and Tom Ugly's Point, but I prefer not particularizing or describing them until I have again considered their relative merits. I may, however, mention that either of them is practicable.

I do not wish to disguise the fact that the line along Port Hacking Creek will be expensive to construct, owing to sharp spurs and steep gullies, but the easy gradient (about 1 in 500 average) will enable us to surmount many difficulties by occasional short gradients of more severe character.

To-morrow we shall work back towards Sydney, examining the line as proposed by Mr. James Manning, and I shall call at your office on Tuesday next, when I shall give you full particulars.

I have, &c., R. D. STEPHENS.

Mr. R. D. Stephens to Engineer-in-Chief.

Illawarra Railway.

SIR.

Cook's River, 20 January, 1874.

I beg to acknowledge receipt of your letter of the 9th instant, instructing me to report on the trial surveys carried out under my direction during the year 1873.

In reply, I have the honor of informing you that, in the month of November, I made a rough preliminary aneroid survey of the country lying between Sydney and Wollongong, and that in the month of December I commenced the trial survey thereof.

Terminus.—The terminus, or rather the starting point, is situated about 7 chains south-west of the Chemical Works, Balmain, and is, I consider, admirably suited to the purpose intended; there being comparatively deep water close in to the shore, and the bottom being mud and sand, admits of being still further deepened, should it be found necessary. The general situation also is excellent; being close to the main part of the city, and yet in no wise interfering with the principal shipping.

I have made the plan of the terminus on a large scale, and this I will submit to you on my next

I have made the plan of the terminus on a large scale, and this I will submit to you on my next

visit to Sydney.

I have kept the formation level 20 feet above high-water-mark, so as to allow the coal to be shot into the ship's hold.

Line between Sydney and George's River.

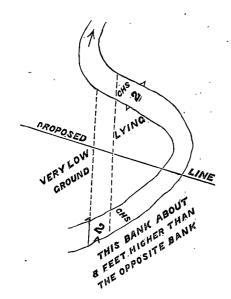
On examining the accompanying tracing you will find that I have sketched thereon several projected lines. The full red line denotes the route as now adopted by me. The dotted red lines represent rough trial lines, which I have examined, but which I have abandoned.

The line as now adopted by me, after leaving Balmain, passes underneath the Burke Town Férry Road (the level of which remains unaltered), crosses two narrow arms of the harbour, which are dry at low water, and then as a rule skirts the shores of Long Cove until it reaches Petersham. The Parramatta Road I cross by an under-road bridge, and do not alter the level thereof more than 2 feet. I then pass under the first each of the Patersham righted rolls and alter the level thereof more than 2 feet. under the first arch of the Petersham viaduct, which arch allows of ample room for a double line of railway. From this, with an average gradient of about 1 in 90, I reach the new Canterbury Road, which I cross at its lowest point with about 25 feet of cutting, so that the level thereof need not be affected.

About midway on this incline I purpose to branch off with a nearly level line to Petersham Station,

so as to connect this line with the existing line.

The descent from the crossing of the Canterbury Road to Cook's River is effected with an easy gradient and with comparatively little work. The crossing of Cook's River is not quite what I could desire, being on the skew to the existing channel; but then, on the other hand, the line is square to the flood-waters, which fact will be understood on the examination of the adjoining sketch.



A short river diversion 10 chains in length would meet all difficulties. Though the river is 2 chains wide, there is not the slightest current at ordinary seasons, and the highest flow known only reached 10 feet above its present level at this spot.

Woolli Creek crossing is more satisfactory, being bridged on the square. These two bridges and their approaches

are the only heavy works as far as we have gone.

The Illawarra Road, perhaps better known as the Sans Souci Road, is crossed by an over-road bridge, the level of the road remaining unaltered. The level of the Muddy Creek Road, also an important road, will also remain unaffected, but the course thereof will have to be diverted to admit of the bridge being somewhat on the square Here I have to pass through three (3) market gardens, but this I cannot possibly avoid; for, in the first place, this neighbourhood abounds with gardens of this description; and secondly, if I tried to avoid them by crossing the Muddy Creek Swamp I would incur far greater expense (with a worse line) than the purchase of these small gardens is likely to entail. I simply mention this because the people of this neighbourhood appear to lay undue importance on

the necessity for avoiding purchased or improved ground.

I may, however, incidentally mention that up to the present I have touched on extraordinarily little valuable property, which for a line so close to Sydney is rather remarkable. Muddy Creek is as far as I have reached at present, as Mr. Carver has for some time past been engaged on the other side of George's River, surveying the ground between this river and Port Hacking. Our progress has not been so rapid as I could have wished, but then the start is always necessarily slow. I had considerable difficulty in obtain-I could have wished, but then the start is always necessarily slow. I had considerable difficulty in obtaining suitable chainmen, and which was the chief cause of delay. We had, with the exception of $\frac{3}{4}$ of a mile at Petersham, to cut every inch of our way through this spreading over-hanging tea-tree scrub, which is

far more retarding than upright timber.

From Muddy Creek to Rocky Point I purpose keeping about midway between the beach and Pat Moore's Swamp. I do not think it would be desirable to hug the shore too closely; I think it best to leave a belt of timber to shelter the line from the drifting sand. The country about here is all level, so

that you can go anywhere so long as you avoid roads, swamps, and scrubs.

I have given the crossing of George's River my most careful consideration, and I have come to the conclusion that Rocky Point is after all the best crossing-place; for though it be a little wider than that at Tom Ugly's Point, yet the depth of water is considerably less, and as the crossing will, I presume, have to be partly bridged and partly embanked this will materially affect the cost. On the tracing I have sketched an alternative line by Tom Ugly's Point, but I do not see that it presents any special advantages.

The objections to abandoned line No. 1 are too sudden a fall from the Canterbury Road ridge to Canterbury, and when once past the heads of Cup and Saucer Creek you get into very rough and broken country. The course of the hill ranges also happens to be at right-angles to the course of the line, so that you cannot circumvent them—you are forced to pass through them. Crossing at Kangaroo Point I consider to be out of the question, for though it is considered to be the narrowest part of the river. still this

sider to be out of the question, for though it is considered to be the narrowest part of the river, still this distance is measured at right-angles to the course of the proposed line; in every other direction the width is considerable. Independently of this, the approaches on the north side are extremely high and precipitous; altogether I consider this point as totally unsuited for a railway crossing. There might be a possibility of bringing the line through the Woolli Ranges to Tom Ugly's Point, but this I did not examine. The only advantage of the Canterbury line is that it would bestow a station on Canterbury, but I hardly

think that this is worth taking into consideration.

Abandoned line No. 2 I consider to be impracticable, unless you resort to a very sharp curve, and to a tunnel underneath the Canterbury Road, and then, when once through, you have to interfere with numerous gardens and other valuable property. The only advantage that this line presents is, that it numerous gardens and other valuable property. The only advantage that this line presents is, that it crosses the Cook's River and Woolli Creeks with one bridge; but then again it would have to cross a fair-sized stream which comes from the direction of Newtown. On the south side of Cook's River the course of the line would be very awkward, and there would be some difficulty in dealing with the roads. The chief reason why I make reference to this line is, that numerous persons are of opinion that it should

come this way.

Line between George's River and Wollongong.

The Gomea Range rises very gradually and gently from Gwaley Bay, and I purpose ascending it with a gradient of 1 in 80. From this point I have not as yet fixed on the precise course for the line, but it will, to a great extent, have to follow the bends of Port Hacking Creek. The chief peculiarity of this creek, and the peculiarity which makes this creek specially available for railway purposes, is that it has but a very slight fall for nearly its entire length. The total fall from the Bulgo Range to the sea is only 335 feet, which, considering the distance and the nature of the country, is very slight. The Bulgo Range, which shuts it on the south is a very steep sharm but also very purpose spurp. Accompanying tracing which shuts it on the south, is a very steep, sharp, but also very narrow, spur. Accompanying tracing shows a section of this spur.

I propose a tunnel 25 chains in length through this range, and from this I propose to wind round the hills till I reach Coal Cliff. Here a tunnel about 60 chains in length is perfectly unavoidable. Cliff rises sheer out of the sea to a height of about 900 feet. There certainly is a ledge 60 feet wide about half-way up its sides, but it most assuredly cannot be made available for railway purposes. For about 3 miles south of Coal Cliff the country is rather awkward, but by adopting a 1-in-80 gradient we

are enabled to select better ground than we could do did we retain the average gradient of 1 in 120.

From Bulli to Wollongong the country presents no engineering difficulties of any moment.

On the whole, I may safely affirm that we shall be enabled to obtain a very fair line with easy gradients.

I fear that some of the curves along Port Hacking and on the descent of the coast range will necessarily be rather sharp, but I will make them as easy as I can.

I shall now touch lightly on the line as originally proposed by Mr. Manning. This line I have shown on the accompanying tracing by a dotted red line, and I also forward section of part thereof. You will perceive that it follows the Illawarra Road as far as Bulgo Range, which it crosses at about 900 feet elevation, and then gradually descends to Bulli. This last portion of the route is of course but very indifferent to the state of ferently represented on the plan, as I do not exactly know where it would go, but at all events we have the bare fact that he would have to ascend and to descend 900 feet. This would give a gradient of 1 in 53 for 9 miles, which is rather severe for a heavy coal traffic.

There is another very serious consideration in undertaking this incline, and it is this,—that when approaching Bulli you would get into the coal measures, and there the hill-sides are full of slips. It would not be safe to go much into cutting, or, for the matter of that, into bank either, and this of course is perfectly unavoidable in skirting a steep hill-side. We shall not be entirely free from this objection on the line that I propose, but we shall not feel it to nearly the same extent that we would do did we

I will not take up your time by going more fully into details, for it is of course self-evident which of the two lines is to be preferred. There was another line proposed, viz., from Liverpool. This is open to the same objection as Mr. Manning's line, but in a more marked degree, as they would have to cross the range at about 1,200 feet elevation instead of 900. I forward tracing of Bulli Pass, with the gradients marked thereon; it will give you some idea of the difficulties they encountered in attempting this long I have, &c., R. D. STEPHENS. incline.

Engineer-in-Chief to Commissioner.

Proposed reservation of land from Sydney to Wollongong:

11 February, 1874.

I RECOMMEND that the land between Sydney and Wollongong, coloured pink on the accompanying plan, be reserved from sale for railway purposes.

(Including glebe land.)

JOHN WHITTON.

Mr. R. D. Stephens to Engineer-in-Chief.

Illawarra Railway Trial Survey.

Sutherland, George's River, 23 February, 1874. I have the honor to report that I have reached George's River, and that Mr. Carver has Sir,

surveyed, but not laid out, the line for a distance of 7 miles beyond George's River.

When I asked Mr. Carver to survey the district beyond George's River I was under the impression that the country between Cook's River and George's River was so easy that I could first lay out the line and then fill in the survey, using the centre line as a base line, but on my attempting to do so I ran foul of a series of swamps, so I had to first make a careful and extensive survey and then afterwards lay out the centre line. By doing so I have succeeded in obtaining an excellent and direct line, clear of all By doing so I have succeeded in obtaining an excellent and direct line, clear of all swamps and obstructions, the main portion of the line being composed of two straight lines, each upwards

of 2 miles in length; the levels also are most satisfactory.

The survey of these swamps has been a very tedious matter, their edges being lined with thick and, in some places, almost impenetrable scrub. The cutting of the centre line has also taken far longer time than I had at first anticipated; every inch of the way had to be cut, the tea-tree scrub being very annoying. There is also a considerable quantity of standing timber, but these do not cause much delay. I have examined the first 7 miles of Mr. Carver's surveyed line on the south side of George's River; here the line will have to be slightly more circuitous than I would wish, owing to the absolute necessity for heading Ewey Bay, Gomea Bay, and the north-west arm of Port Hacking, but I shall endeavour to make the course as direct as I possibly can. Mr. Carver reports that there is some difficulty with Kangaroo Creek (a large tributary of Port Hacking Creek), and last Saturday I went over to examine this stream, but owing to a fearful storm of wind and rain I was forced to return, as during Saturday night Mr. Carver's camp was blown away.

We have had some fearful weather here, which has materially affected our progress, but I am glad

to be able to report that as far as we have gone we have succeeded in obtaining a very fair line.

I am camped on the south side of George's River, and I would feel obliged by your causing the letters to be addressed to the care of W. E. Rust, Sandringham, Kogarah.

I have, &c., R. D. STEPHENS.

Mr. R. D. Stephens to Engineer-in-Chief.

Illawarra Railway Trial Survey.

Port Hacking River, Kogarah Post Office, 20 April, 1874. I have the honor to inform you that Mr. Carver and I are now working on the Port Hacking Sir,

I regret to state that our progress has been slow; this is owing to the peculiar and in reality difficult character of the country lying between the Gomea Range and Port Hacking River. It consists of a sort of plateau or tableland about 200 feet above sea-level, and deeply indented with numerous deep chasms and narrow ravines, the bed of whose creek is to all intents and purposes on the same level as the level of the sea. The 200 feet rise is as a rule effected in about five or six chains horizontal distance, and the water in the various bays and inlets is mostly 60 and even 80 feet deep within 50 yards of the shore.

Mr. Carver, previous to my arrival, attempted to overcome the difficulty by heading all the creeks, and he ran a trial line upwards of 8 miles in length, but this brought him to the summit of the range,

from which there was no getting down.

I myself tried various routes, with but poor success. The jagged and precipitous nature of the cliffs and the extreme narrowness of the ravines prevented successful contouring without the introduction of almost impracticable curves, and running in anything like a straight line involved very heavy works—in fact tunnels. But I am glad to say that, after repeated trials, I have at last obtained a line which is fair and feasible, but I have been compelled to introduce 1-in-60 gradients for short distances. I have also been compelled to abandon 3 miles of line which I had fully completed, and which up to the very last promised very well. However,

However, once on Port Hacking Creek itself our progress will be considerably more rapid, for then our attention will be confined to the creek itself, which fortunately runs in the proper direction, and the general course of which is very fairly straight. I have, &c.,

R. D. STEPHENS.

Mr. R. D. Stephens to Engineer-in-Chief.

Illawarra Railway, Port Hacking, 16 June, 1874.

I have the honor to report that we are pushing on with the trial survey as fast as the extremely rough nature of the country traversed will permit.

It certainly is fearfully rough in the street of the country traversed will permit.

It certainly is fearfully rough in places—a confused jumble of huge boulders and rocks, covered with thick brushwood closely interwoven with vines and creepers, which renders expeditious setting out or

surveying almost an impossibility.

I have certainly worked as hard and as continuously as I could, but notwithstanding all my endeavours our progress is but slow—far slower than I had anticipated. The season of the year also does not admit of long working hours. In these deep narrow gorges the sun does not appear till 8, and you must be back in camp by 5, as it would never do to be benighted in these parts. The chaining of the different lines is most laborious, and in places very awkward—in fact sometimes positively dangerous. I have also been compelled to set up my instrument in some extraordinary spots. Generally speaking I am tolerably quick at setting out, but in this country I must confess that, with difficult clearing, &c., a quarter of a mile a day of setting out is about as much as I can manage these short working days. Of levelling I can do here about $1\frac{1}{4}$ mile, but then the line is of course already cleared. I simply mention these matters can do here about $1\frac{1}{4}$ mile, but then the line is of course already cleared. I simply mention these matters to account for my comparatively slow progress, for I had hoped to have been able this time to report satisfactorily. But, however, if the progress is not satisfactory in point of time, it is, I am glad to say, fairly satisfactory as far as the result of the work is concerned, at all events I believe as much so as the rough and precipitous nature of the country passed through admits of. A few of the curves and gradients are not quite so easy as I could wish, but I could not possibly avoid this. I was compelled to follow the contours of certain main spurs. I trust that the number of wet days we have had these last four months is exceptional in this country. I have been astonished at the continuous wet weather we have had lately. As a rule I do not like to excuse myself under the cloak of wet weather, but we certainly have had considerably more than what I thought was the average number of wet and stormy days.

I have, &c., R. D. STEPHENS. H.P., 23/6/74.

Mr. R. D. Stephens to Engineer-in-Chief.

Illawarra Railway Survey Report.

Sir, Stanwell Park, Bulli, 24 August, 1874. I have the honor to acknowledge receipt of your letter of the 18th instant (received yesterday),

directing me to send in report of the Illawarra Railway survey.

I had intended to have called at the office when in town, and with that view had brought in plan and section, as you could then have had a better conception of the country to be traversed; but on arrival in Sydney I found that the private business that I specially went into town for was so urgent, and the necessary arrangements to be made so tedious, that I really had no time to devote to anything else. Besides, the steamer that I was expecting only arrived on Friday night, and I had to be away again by coach next morning by 9 a.m., otherwise I would have missed the boat which was to bring me up Port Hacking Creek and had I done as it would have have a second to the second to the latest and the second to t Hacking Creek, and had I done so it would have been a matter of good two days at least getting back to camp. However, I purpose shifting camp to Stanwell Park itself in about a fortnight, and if you will permit me, I could, whilst the men are shifting camp, run up to town via Wollongong, and lay before you all necessary papers, &c. I would very much like to do so, as you could then more readily understand how matters really stood.

I am at present working near Hamilton's, position of which is shown on enclosed lithograph. On this plan I have also marked in pencil course of the line*; I find, however, that Port Hacking Creek is *I find it imposso incorrectly laid down (they evidently having confused Kangaroo Creek with Port Hacking Creek) the plan is too that I append thereto a rough tracing, done to the same scale, which more accurately indicates its true

The

As regards rate of progress, I am fully aware that it must be considered slow, in fact very slow, except by those who have actually been on the ground. Although I had previously been along the river banks, I was not prepared to find that the difficulty of getting about extended so high up the hill-side. The country is certainly fearfully rough—far rougher than the main range ascent in Queensland; but I do not so much object to this roughness (for the general formation levels are as a rule easy enough) if you could only get about and see where you are going to. The country is covered with an abominable weed or scrub, which here goes by a variety of names—a sort of raspberry bush or scrub, which grows about 4 feet 6 inches high, and is so dense and close in its intertwining that it is with the utmost difficulty that you can get through it at all, much less chain through it; the consequence is that it is nothing but cutting through it all day long, and this is most tedious. The standing timber also is as close and as thick as I have seen it anywhere; but this I would not so much mind if it were not for that detectable carries as I have seen it anywhere; but this I would not so much mind if it were not for that detestable scrub and underwood. This, in connection with the uniform steep sidelong ground (the average is about 1 in 4, and underwood. This, in connection with the uniform steep sidelong ground (the average is about 1 in 4; though we have long stretches of 1 in 2) renders expeditious surveying impossible. During the last week we have got into another description of weed or shrub, which I am glad to say is not nearly so bad, and the consequence is that I have been able to do more than double the work. We have of course to run rough preliminary trial lines to enable us to get at the general lay and features of the country; but these have to be cut just the same as the main centre line. Provisioning and shifting camp is here a really very serious matter. Pack horses are of course altogether out of the question, even if you could get them down—which you cannot—you could not keep them, for there is no grass. Even the settlers about Hamilton's, who sometimes bring a horse down their cut tracks, have to feed it on corn, and then send him back next day. Everything has to be carried on men's shoulders, and this, where the country is so him back next day. Everything has to be carried on men's shoulders, and this, where the country is so rough and the distance so great, becomes a really serious matter. The last time we shifted we shifted 6 miles, and it certainly was quite an undertaking. I had previously sent a boatload full back to Sutherland (Mr. Holt's place), and took nothing but what we absolutely required; but notwithstanding this we had a most laborious and tedious journey. We certainly had the boat to help us, and I really do not know what we would have done without her. There are also not show that the property of reaches of calm water, but there are also occasional obstacles in the shape of rapids, waterfalls, and fallen logs, and these had to be got over. I had the boat built specially roomy and light, otherwise we could

I am rather ashamed of going into all these minute details of obstacles, but I find that it is really necessary for me to do so in order to account for what otherwise must appear my unaccountable dilatoriness in completing the work. It is a line presenting no great engineering difficulties, but it is essentially a line requiring surveying, especially cross-sectioning, so as to avoid those difficulties. I have of course taken a series of rough cross-sections, so as to enable me to arrive at the best general course; my main object having been to get at the best general lay of the country. On the whole, taking the nature of the country into consideration, it is a fair line, though of course a subsequent contract survey would materially improve it improve it.

Finally, I am glad to be able to report that the main difficulties are over; all the heavy part of the work is now done. Once at Stanwell Park, which I hope to be in another fortnight, shifting camp and provisioning will cease to be our bugbears. The country also is considerably easier, and I feel perfectly satisfied that our progress will be fairly rapid. I do not say that the country between Stanwell Park and within 2 miles of Bulli is easy, because it is not; but still it bears no comparison to what where had here—at all events there is not the same difficulty which attends the clichtest movement that there is here. at all events there is not the same difficulty which attends the slightest movement that there is here.

From 2 miles on this side of Bulli into Wollongong the country may be classed as good. As regards the probable completion of the survey, I fear that it cannot be fairly finished before the end of this year. If you will give me permission to call upon you in Sydney, I wish to consult you on the best means of approaching Wollongong. By many it is desired that the line should go round by the Illawarra Lake, on the west side of the town, as it then would be of the greatest benefit to the farmers and to the collieries. On the other hand, looking at the subject simply in an engineering and political point of view, it would be best to keep on the cast side of the town. It would be best to keep on the cast side of the town. It would be best to keep on the cast side of the town. it would be best to keep on the east side of the town. It would be better situated for a future getaway to Shoalhaven; it is far more direct, and less expensive than the other route; however, I would feel obliged by your instructing me on this matter.

I have, &c.,

R. D. STEPHENS.

Mr. R. D. Stephens to Engineer-in-Chief.

Illawarra Railway Progress Report.

Bulli, 3 December, 1874. I have the honor to report that I am now camped some little distance on the Wollongong side

of Bulli, and I hope to complete by the end of the year, as stated in my report dated August 24th, 1874. In my last report I mentioned that a portion of the line on the south side of the Bulgo Range would give trouble, and I certainly did not over-estimate the difficulties. These consist in the crossing of two narrow but very steep gorges, which unfortunately retain their sea-level for a considerable distance up the creek, rendering successful turning round a matter of some difficulty.

There are several ways of meeting this difficulty:

1st. Retaining the comparatively easy curves and gradients used up to the present, and making up your mind to two bridges of some magnitude.

2ndly. Still retaining easy gradients and curves, but avoid these two heavy bridges by going

higher up the creek.

3rdly. Adopting very steep gradients (1 in 33) and very sharp curves (8 chs. radius), and crossing the creeks, with bridges of ordinary height, at very nearly the same places as at No. 1.

No. 1 is the course that I have adopted and have laid out. I retained 1 in 66 gradients and curves of 11 ch. rad.; but this, as previously stated, involves two very high bridges, the one about 500 and the other about 600 feet in length; this is measuring from the ends of the cuttings. I do not think that it would be desirable to have any embankment, the ground being so steep; but then it must be remembered that, owing to this very steepness of ground, it is only the two central stone piers which will assume gigantic proportions—I think about 100 feet high; the other piers will be but of ordinary dimensions. I am of course aware that these two bridges will appear rather stupendous, but after often and carefully weighing the matter in my mind. I feel estimate that this is the best and character my respectively. and carefully weighing the matter in my mind I feel satisfied that this is the best and cheapest way of dealing with the difficulty.

It is far more direct, and I consider cheaper, than No. 2; for in order to do any good you must, in the case of No. 2, go \(\frac{3}{4}\) of a mile out of your course, and besides that, go in for a short tunnel.

The only real advantage that No. 3 presents is the saving of the two high central piers. With the exception of the crossing of these two gorges (total length about 15 chs.), the \(\frac{4}{2}\) miles, as laid out on No. 1 principle, is really very fair, and I think that it would hardly be advisable to spoil the line for the sake of these high piers; however I can lay out No. 2 and No. 3 lines on the plan and I have for the sake of these high piers; however, I can lay out No. 2 and No. 3 lines on the plan, and I have sufficient data to enable me to give you an approximate section of each, so that you will be readily enabled to decide which course to adopt. I wish I could have forwarded these to you by this post, but the weather has been so exceptionally fine that I have had no time for office work, and could not finish the plan as it ought to be finished.

The setting out and levelling over Coal Cliff was rather bothersome. It rises 1,058 feet sheer out of the sea; and the levelling was troublesome owing to the sides being so disagreeably steep; but I am inclined to believe that the length of the tunnel will not be so great as I at first stated. The same remark applies to Bulgo tunnel

Since my arrival in Bulli I have started the feature survey, and have already done a considerable

portion of it.

I fear that should we not soon have wet weather I shall be very much behind-hand with my plotting, but I shall endeavour to push on with it as fast as I possibly can

I have, &c., R. D. STEPHENS.

Mr. R. D. Stephens to Engineer-in-Chief.

Illawarra Railway Survey—Progress Report.

Wollongong, 1 February, 1875. I am now camped within half a mile of Wollongong, having completed up to Para Creek, which is about three-quarters of a mile from the town. The proposed terminus is on the other side (i.e., the south side) of the town; this will give an additional 40 chains, leaving a total of 1½ mile remaining to be done, so that I expect to have finished in about ten days. I would of course finish sooner, but that the survey of the harbour, portion of the town, and two important creeks will take some little time.

Mr. Carver's section between Coal Cliff and Kennedy's Pass (some 2½ miles north of Bulli) took

considerably longer time than I had anticipated, and thus necessitated the extending my own length of

section to a rather inconvenient length (8 miles).

On the 23rd instant I instructed Mr. Carver to discharge his men and break up camp on the ensuing Friday (the 29th), as I would finish the rest of the work myself. This he has done, and is now

engaged plotting his work, &c.

Mr. Carver's section between Coal Cliff and Kennedy's Pass is, owing to its having been done on the contour principle, not nearly so rough as I had at first expected; in fact, I was quite agreeably surprised when I laid down the line on the plan for Mr. Carver to set out. The curves are comparatively

easy, and so are the gradients (about 1 in 80).

My own section is also pretty fair; in fact, the only real obstacle, which however is an obstacle, is the difficulty of dealing with the Bulli Com.'s tramway. In the whole course of its length it just bisects (i.e., keeps half-way up) the ridge which I have to cross, thus rendering it very difficult to get either under or over. I ran several rough trial lines, and also took a section of the tramway, and I at last adopted that which to me appears the only feasible plan, and that is to cross the tramway at a place where its gradients are level, or nearly so (generally speaking its gradients are very steep), and I propose to lower the tramway 10 feet at the point of crossing, which I effect by an under-bridge. The ground on either side is very well adapted for this alternation side is very well adapted for this alteration.

The rest of the line is fair, all the curves and gradients are easy, and I have one straight line upwards of $3\frac{1}{2}$ miles long. Some of the clearing was very bad; we got into that detestable tea-tree scrub again for very long stretches, and this unfortunately happened when we had those fearfully hot days and no water to be had; two of my men were knocked up, such was the intensity of the heat and the density of the scrub, which did not permit one breath of air to reach us.

On the completion of the survey I shall, as directed, at once proceed to Sydney, Mr. Carver I have, &c., R. D. STEPHENS. accompanying me.

No. 1A.

Minute by the Colonial Secretary.

Subject—Railway line to Illawarra by the Bottle Forest or by the Hacking River.

Colonial Secretary's Office, Sydney, 26 June, 1883.

The Railway line to Illawarra has been laid out by the Bottle Forest Road, from which it descends to the

lower level by the Wilson or the Stuart Ranges, and thence by Bulgo to Coal Cliff.

I have repeatedly drawn the attention of the former Minister for Works and of the Chief Engineer for Railways to the mistake which I believe has been made in adopting this route, and while administering the Works Department I had a conversation with Mr. Whitton on the subject, and arranged to inspect the route personally with him during the recess, and also the alternative route by the valley of the

Hacking.

Mr. Whitton's illness has prevented this from being as yet carried out, but, inasmuch as the contractors are now at work upon it, the matter can no longer be delayed, and therefore I invite the earnest attention of my honorable colleague the Minister for Works, in order that it may be thoroughly investigated before the country is saddled for ever with the enormous expense of tunnelling, as well as by a large annual cost, which will materially interfere with this line being, as it otherwise would be, one of

the most remunerative lines in the Colony

Sir John Robertson and I, having had occasion to travel by both routes many times during the past few years, have long been convinced, so far as unprofessional judgment goes, that the best route would be by the Hacking River Valley, and the objections which I raise to the present route are, at all events, worth consideration; and I am quite sure that if Mr. Whitton had had the same opportunity which we have had of pushing our way by many various tracks, both by the valley and by the precipitous route of the Strart Range he would have goons to the same conclusion as we have done upless other original. Stuart Range, he would have come to the same conclusion as we have done, unless other engineering difficulties occur unknown to us.

The Bottle Forest route reaches a higher summit level by 400 feet than the Hacking Valley route, and, inasmuch as that summit level is about 9 miles south of the summit level by the latter route, it stands to reason that the descent to the upper end of the valley-which must be reached whichever route is adopted—must be on a more unfavourable series of gradients than the other, and to any one who knows the break-neck character of the Wilson and Stuart Ranges it will be apparent that a more expensive series

of tunnelling through extremely hard sandstone indurated with iron can hardly be met with.

Mr. Whitton says that this route has been adopted on account of the numerous small creeks (but swollen in raiu) which would have to be crossed on the other route, the absence of which on the present

route is a conspicuous advantage.

I am confident that these have been overstated to him, and that by keeping the line on the western side of the river many of the most objectionable will be entirely avoided—in fact the only one of impor-

tance is Kangaroo Creek.

Even if it involved a larger outlay, which I do not think it would, for the culverts would not be so expensive as the gigantic tunnels on the Wilson Range, especially when it is borne in mind that the Bottle Forest route is nearly 3 miles longer, it might be better to incur a larger cost to begin with than to destruct the transfer of the state of the sta troy the traffic, for as this line will be to a large extent a coal-line it is essential to its development that no undue expense of haulage be incurred.

I know that some of its opponents have said that it will never carry coal against the steam colliers by séa.

This, however, is disproved in the case of the Coal Cliff Coal Company, which has repeatedly stated that it is prepared to contract to give 500 tons a day to this line if taken at the same rates as on the Newcastle lines, but if there be an unnecessary raising up steep gradients of an extra 400 feet, it seems to me that we would be destroying the traffic in a most suicidal way, or else rendering it so expensive as to be unremunerative, and thus, against our own interest, encourage steam-collier traffic.

Moreover, an enormous public estate has been secured to the inhabitants of Sydney in the future, in the shape of the National Park, and yet the railway, instead of running through the attractive portion of it, skirts the western side of the park, and the only access by the railway to its central portion will be by going about 10 miles beyond and running a branch line through the Coal Cliff Company's land backwards

to the park.

Surely this is a most absurd way of utilizing this great inheritance of the people, and the annual vote

which is given for gradually subduing its wilds.

Moreover, the valley of the Hacking abounds in magnificent timber, and though the valley is narrow, the land is of great richness, whereas the Bottle Forest Road consists of sandstone and ironstone, with low scrub, suitable no doubt for villa residences, but not generally useful.

The contractors, Millar Bros., have only recently commenced on that part of the line which lies beyond the deviation, and are willing to withdraw the men to the nearer part of the work, if asked at

once, so as to give sufficient time to have the country further examined.

Prompt action, however, is necessary, for if longer delayed their work will be too far gone to be

undone without incurring heavy expense.

I recommend the subject therefore to my honorable colleague.

Since writing the above I have had an opportunity of seeing Mr. Whitton. He states that although the summit is 400 feet higher by the Bottle Forest route, yet the point on the river reached by that route is considerably higher than where the other would intersect the valley, and that sum of extra haulage is thus neutralized, but that the expense of running by the river route would be greater on account of the unfavourable curves on several points 11 and 12 chains radius; but that as doubts have been expressed by those who have been in the habit of travelling, it would be well to satisfy these doubts by sending a surveyor down to go over the valley route again with careful observation, which may either dispel these doubts or admit that they have some foundation.

The Minister for Works.—A.S., 28/6/83. Submitted for decision—Urgent.—J.R., 29/6/83. The minute submitted by my hon. colleague is so important that I must ask the Engineer-in-Chief for Railways to at once send a party of surveyors and obtain a report upon this matter, and trust no time will be lost in doing so.

I have sent for Mr. Millar, the contractor, and will arrange with him to stop work upon the southern portion of his contract until report is submitted to me by Mr. Whitton.—F.A.W., 2/7/83.

Forward at once to Engineer-in-Chief for Railways.—F.A.W., 2/7/83. Mr. Whitton, for immediate attention.—J.R., 3/7/83. Report annexed, No. 83-1,554 of 6th Oct.—J.W., per W.H.Q.

No. 2.

The Commissioner for Railways to Messrs. C. & E. Millar.

Department of Public Works, Railway Branch, Sydney, 3 July, 1883. Gentlemen With reference to the interview which your Mr. C. G. Millar had with the Secretary for Public Works this morning respecting the terms upon which you are prepared to suspend work on your contract for the 1st section of the Illawarra Railway, until a survey of proposed deviation in the line is completed, I have the honor to inform you that Mr. Secretary Wright has approved of the stoppage of the work on the terms stated in your memorandum of the 2nd instant, and I have therefore to request that you will have the work stopped accordingly.

The agreement to be entered into will be prepared in the course of a few days.

I have, &c.

CHAS. A. GOODCHAP,

Commissioner for Railways.

No. 3.

Terms of Agreement for Suspension of Works, 1st section, Illawarra Railway.

Railway Camp, St. Peters, New South Wales, 2 July, 1883. 1sr. Work to be suspended from the 15th-mile peg to the southern end of contract until survey of proposed deviation is completed.

2nd. If survey of deviation is adopted, and the Government decides to deviate, the contractors are to be offered an equal length on new line at Schedule rates.

3rd. Should original line now under contract be adhered to, and contractors asked to again proceed with work, they are to be paid compensation for any loss incurred by delay, &c., the amount to be agreed upon between Engineer-in-Chief and contractors.

4th. In the event of any dispute arising between the Engineer-in-Chief and the contractors as to an extra value for work on deviated line, or amount of compensation asked for suspension of work, the Engineer-in-Chief and the contractors mutually agree that the portion of contract comprised within the 13th-mile peg from Redfern Station to the south end of contract be cancelled, without any compensation to the contractors whatever.

The contractors only being paid for work actually done, or materials on the ground or adjacent thereto

Extra time to be allowed for suspension.

C. & E. MILLAR.

Accept this offer, and let reply be sent.—F.A.W., 3/7/83. Will Crown Solicitor prepalegal deed to give effect to this agreement?—F.A.W. Letter to Messrs. C. & E. Millar, 3/7/83. Will Crown Solicitor prepare the Copy sent to Crown Solicitor, with instructions to prepare agreement, 4/7/83.

3 A.

3 A.

Mr. Quodling to The Engineer-in-Chief.

Memorandum to the Engineer-in-Chief.—Suspension of work, 1st section, Illawarra Railway.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office,

Sydney, 3 July, 1883.

I FORWARD, for your information, a copy of the terms upon which Messras. C. & E. Millar are prepared to suspend work from the 15th-mile peg on the 1st section of the Illawarra line to the end of their contract.

These conditions have been accepted by Mr. Wright, who desired me to inform you that, as Mr. Stuart approved of them, and the matter was pressing, he did not consider it necessary to trouble you W. H. QUODLING. with the business.

J.W., 4/7/83. Mr. Firth,—To be returned.—W.H.Q., 5/7/83. All work beyond the 15th-mile peg is suspended.—T.R.F., 7/7/83. 3 B.

Minute from Commissioner for Railways to The Crown Solicitor.

Government Railways.—Minute Paper.

I have to inform you that it has been decided to suspend all works on Messrs. C. & E. Millar's contracts for the construction of the 1st section of the line from Sydney to the Illawarra District, from the 15th-mile peg onward, pending the completion of a survey for a deviation of the original route.

The conditions upon which the works are to be stopped are set forth in the memorandum here-

with, and I shall be glad if you will draw up an agreement upon the terms of this memorandum. Copy of letter to Messrs C. & E. Millar and bond in connection with contract herewith.

C. A:G., Recd.—W.H.Q., 5/7/83. B.C., 4/7/83. 3 C.

The Crown Solicitor to The Commissioner for Railways.

Crown Solicitor's Office, Sydney, 11 July, 1883. Sir,

I have the honor to return herewith the papers sent to me as instructions to prepare agreement as to the suspension of the works on a portion of the Illawarra Railway line, and to forward the agreement.

I believe I have correctly carried out your instructions; but as the matter dealt with is novel, it is desirable that, before adopting the agreement I now send to you, you should carefully peruse same, and ascertain that your instructions in the matter are therein correctly set out.

I have, &c.

JOHN WILLIAMS Crown Solicitor.

Have read the agreement, which seems to be in accordance with terms of agreement. I assume it is a clerical error when the figures "13" are inserted in 4th clause of the agreement; they should be 15, as the Crown Solicitor seems to have inferred, as he has adopted 15 in the deed. I do not quite understand the proviso for cancellation of contract, if the contractors and the Engineer-in-Chief are unable to agree as to the extra value of works on deviated line. By a preceding clause the works on the deviated line are to be carried out at Schedule prices. The agreement should be forwarded to the Engineer-in-Chief, for perusal, &c.—C.A.G., B.C., 12/7/83. Mr. Wade.—W.H.Q., B.C., 12/7/83.

Modifications suggested in proposed agreement with Messrs. C. & E. Millar, re stoppage of works on first section of the Illawarra Railway.

A. "And if there be any works on the new line of a class not provided for in the said Schedule, the value of such works shall be agreed upon by the Engineer-in-Chief and the said C. G. Millar and E. F. Millar," &c., &c.

B. "And after agreeing with the Engineer-in-Chief as to the amount to be paid for compensation on account of stoppage of works," the said, &c., &c.

Fifthly. Omit altogether.

C. The (13th) thirteenth-mile peg is meant by Mr. Millar, and is his ultimatum.

Mr. C. Millar has been with me and wishes the above to be inserted.—W.B.W., 13/7/83.

Memo. of suggested modifications herewith.—W.H.Q., 13/7/83. Mr. Berner. Commissioner. G.B., 13/7/83.

The Secretary will please to lay these papers before the Minister at once. There does not seem to be any objection to the modification of terms proposed. I draw attention to the seeming anomaly that while the works are suspended from the 15th-mile peg they are to be abandoned from the 13th-mile peg, if the Engineer-in-Chief and contractors cannot agree upon terms of resumption.—C.A.G., 13/7/83.

Seen. Return to Crown Solicitor.—F.A.W., 14/7/83.

3 D.

The Crown Solicitor to The Commissioner for Railways.

Crown Solicitor's Office, Sydney, 17 July, 1883. Sir, I have the honor to return herewith the agreement for the suspension of works on portion of line of railway from Sydney to Wollongong and Kiama, altered (in red ink) as requested by you.

Will you be good enough to peruse same as altered, and, if you approve it, return the agreement to me for re-engrossment. I have, &c.,

JÓHN WILLIAMS,

Crown Solicitor.

P.S.—Attention is drawn to queries in pencil on third side of agreement.

Will Chief Clerk kindly see Crown Solicitor and explain what the object in leaving out words in the fifth condition as follows:—"Or as to the rate of payment for works required to be done on the said deviation."-C.A.G., 17/7/83.

3 E.

The Crown Solicitor to The Commissioner for Railways:

Crown Solicitor's Office, Sydney, 18 July, 1883. I have the honor to return the whole of the papers relating to the suspension of works on portion of line of railway from Sydney to Wollongong and Kiama (contract No. 1).

I also send a copy of the agreement for suspension of said works for execution. You will observe that the agreement has been prepared and re-engrossed according to your instructions, and as finally approved by you. I have, &c.

JOHN WILLIAMS.

Crown Solicitor.

Signed by Mr. Millar. Submitted for Commissioner's signature before stamping.—G.B., 18/7/83, C.A.G., 18/7/83. Engineer-in-Chief.—G.B., pro Commr. B.C., 23/7/83.—G.B. Signed, C.A.G., 18/7/83.

No. 4.

Articles of Agreement.

Articles of Agreement made and entered into this third day of July in the year of our Lord one thousand eight hundred and eighty-three between the Commissioner for Railways a corporation sole created by the Act of Council passed in the twenty-second year of the reign of Her Majesty Queen Victoria number nineteen intituled "An Act to make more effectual provision for the construction by the Government of Railways in the Colony of New South Wales and for the regulation of the same" of the one part and Charles Gibson Millar and Edwin Franks Millar both of Melbourne in the Colony of Victoria carrying on business together as contractors under the style or firm of C. & E. Millar of the other part.

WHEREAS by Articles of Agreement bearing date the fifth day of October one thousand eight hundred and eighty-two and made between the said Charles Gibson Millar and Edwin Franks Millar of the one part and the Commissioner for Railways of the other part (hereinafter referred to as the said contract) the said Charles Gibson Millar and Edwin Franks Millar contracted and agreed with the said Commissioner for Railways as in the said contract is mentioned and provided for the construction and performance of works and the supply of materials in connection with the construction and completion of that portion of the line of railway from Sydney to Wollongong and Kiama comprised in contract number one including the bridges over Cook's River, and George's River on the said line of railway as more cook's River, and George's River on the said line of railway as more cook's River, and George's River on the said line of railway as more cook's River, and George's River on the said line of railway as more cook's River and George's River on the said line of railway as more cook of the construction and completion of the part of the construction and completion of the con the bridges over Cook's River and George's River on the said line of railway commencing at a point on the Great Southern Railway at Macdonaldtown one mile five chains distant from Sydney aforesaid and terminating at a point twenty-four miles eighteen chains and thirty links from Sydney aforesaid as shown on the plans in the said contract referred to being a length of twenty-three miles thirteen chains and thirty links and to do execute and complete all the works under the said contract in accordance in all things with the specification and general conditions and plans or drawings in the said contract referred to and to complete and finish the same in all things on or before the thirtieth day of September one thousand eight hundred and eighty-four or on or before such extended time or times (if any) as might be granted under section fourteen of the said general conditions and in default should be liable to pay or have deducted from payments to be made to them under the said contract the sums of money mentioned in section thirteen of the said general conditions and to such other proceedings on the part of the Commissioner for Railways or the Engineer-in-Chief as in the said conditions are provided and whereas the said Charles Gibrar Miller and Edwin Miller and India said Charles Gibson Millar and Edwin Franks Millar duly commenced and are now proceeding with the said works under the said contract and whereas since the said Articles of Agreement were entered into as aforesaid it has been thought desirable to consider whether a deviation of a part of the said line of railway cannot with advantage to the formation of the said line of railway be made and the Commissioner for Railways has therefore requested that pending the consideration of the said proposed deviation there shall be a suspension of the works in the said articles of agreement mentioned so far as the same will beaffected if the said deviation is made in such portion of the said line as hereinafter more particularly
mentioned and described but that such suspension shall not in any way affect the other portion of the
said works in the said Articles of Agreement mentioned and whereas the said Charles Gibson Millar and Edwin Franks Millar have agreed to suspend such works and if a deviation of the said line is determined upon that such deviation shall be made upon the terms and conditions hereinafter mentioned Now these presents witness that the said Charles Gibson Millar and Edwin Franks Millar for themselves their and each of their executors and administrators do hereby covenant declare promise and agree with and to the Commissioner for Railways aforesaid his successors and assigns And the Commissioner for Railways aforesaid on behalf of himself and his successors doth hereby covenant declare promise and agree with the said Charles Gibson Millar and Edwin Franks Millar their executors and administrators in manner following that is to say Firstly that they the said Charles Gibson Millar and Edwin Franks Millar their executors and administrators shall and will from the date hereof suspend all works on that portion of the said line of railway from the fifteenth-mile peg to the southern end of the said contract as shown on the plans of the said line of railway in the office of the Engineer-in-Chief for Railways in Sydney aforesaid until the Commissioner for Railways and his successors have determined whether a deviation on the portion of the said line of railway commencing at the said fifteenth-mile peg shall be made Secondly that if after survey the Commissioner for Railways shall determine to make the said deviation in the said that if after survey the Commissioner for Railways shall determine to make the said deviation in the said line of railway commencing at the fifteenth-mile peg and extending southerly to the end of the line contracted for as aforesaid then the said Charles Gibson Millar and Edwin Franks Millar shall be entitled to have made to them an offer of the construction on the new line of a length equal to the portion now temporarily withdrawn at the rates and prices mentioned and set out in the schedule of prices to the tender in the said contract referred to And if there be any works on the new line of a class not provided for in the said schedule the value of such works shall be agreed upon by the Engineer-in-Chief and the said Charles Gibson Millar and Edwin Franks Millar Thirdly that if after the said survey the Commissioner for Railways or his successors shall consider it to be desirable to adhere to the original line of railway

and the said Charles Gibson Millar and Edwin Franks Millar shall upon being requested by the Commissioner for Railways to resume work as to the portion of the work the execution of which is suspended under this agreement and after agreeing with the Engineer-in-Chief as to the amount to be paid for compensation on account of stoppage of works the said Charles Gibson Millar and Edwin Franks Millar shall and will forthwith proceed with the works thereon and finish the same in accordance in all things with the said Articles of Agreement Specifications and General Conditions excepting only in respect of the time within which the said works were therein mentioned to be completed Fourthly that in the event of its being determined to proceed with and complete the said works upon the line of railway as shown on the said plans and without any deviation being made therein then the said Charles Gibson Millar and Edwin Franks Millar shall be entitled to compensation for any loss incurred by delay under this agreement in proceeding with the said works the amount of such compensation to be agreed upon between the Engineer-in-Chief for Railways and the said Charles Gibson Millar and Edwin Franks Millar Fifthly if the Engineer-in-Chief and the said Charles Gibson, Millar and Edwin Franks Millar are unable to agree as to the amount of compensation to be paid on account of the suspension of the said works as aforesaid it shall be lawful for the Commissioner for Railways by notice under his hand and seal to declare that the further completion of the said portion of the said works in the said Articles of Agreement mentioned commencing at the thirteenth-mile peg and extending to the south end of said contract shall be cancelled and upon the service of such notice the said Charles Gibson Millar shall not be entitled to any compensation for or on account of any loss or any other matter or thing occasioned by the stoppage of the said works under this agreement or for the cancellation of the said contract or in the works then remaining to be done but shall be entitled only to be paid for work actually done or materials provided and intended to be used in the said works which are now on the ground or adjacent thereto. Sixthly any extension or extensions of time for the completion of the said works which will be rendered necessary by the said deviation being decided upon or if such deviation is not to be made and the works are to be carried out and completed as originally intended then an extension of time in respect of the delay occasioned in the completion thereof by this agreement shall be granted to the said Charles Gibson Millar and Edwin Franks Millar in such manner as is provided for extensions of time by section fourteen of the said General Conditions annexed to the said recited Articles of Agreement And lastly that nothing herein contained shall prejudice the rights or remedies of the Commissioner for Railways and his successors under the said Articles of Agreement Specifications and General Conditions thereto annexed or affect the powers and remedies vested in the Commissioner for Railways and his successors or the Engineer-in-Chief under the said recited Articles of Agreement and the said Specifications and General Conditions thereto annexed otherwise than is hereby stated but that the same shall remain in full force and virtue.

In witness whereof the said Charles Gibson Millar and Edwin Franks Millar have hereunto set their hands and seals and the Commissioner for Railways aforesaid hath caused his official seal to be affixed the day and year first before written.

The Official Seal of the Commissioner for Railways hath been hereunto affixed by the Commissioner for Railways in the presence of—

GEO. BERNER.

Signed sealed and delivered by the said Charles Gibson CHAS. G. MILLAR. Millar in the presence of—
GEO. BERNER.

Signed sealed and delivered by the said Edwin Franks Millar by his attorney Charles Gibson Millar in the presence of—

Geo. Berner.

Geo. Berner.

No. 5:

Messrs. C. & E. Millar to The Engineer-in-Chief.

Sir,

We have the honor to inform you that, at an interview which our Mr. C. G. Millar had yesterday with the Secretary for Works, at his request, we submitted a Memo of Agreement upon what terms we would suspend operations on a portion of the above contract, viz., from 15-mile peg to south end.

The Minister for Works having accepted the conditions named, and our having received official notice to that effect, and a request to stop works from the Commissioner of Railways, we beg to state that we have carried out his instructions this morning, and paid off all gangs and stopped all works connected with that part of contract.

We have, &c.,

C. & E. MILLAR.

No. 6.

Messrs. C. & E. Millar to Mr. T. R. Firth.

Sir,

Illawarra Railway, N.S.W., Contractor's Office, St. Peters, 4 July, 1883.

We have the honor to inform you that we have received a letter from Commissioner of Railways desiring us to suspend works from the 15-mile peg on this section to end of contract, that the Department may be enabled to make a deviation.

We have accordingly carried out these instructions, and paid off all gangs and stopped all work south of point named.

We have, &c.,

C. & E. MILLAR.

No. 7.

Memo. from Mr. Palmer to The Engineer-in-Chief.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office, Sydney, 3 July, 1883.

In addition to the number of surveyors I named yesterday as under order to proceed to re-survey the original trial survey up the Port Hacking River, I have instructed Mr. Millner to go on the same work. The list will now be Messrs. Millner, Melrose, Bullard, Thornbury, Cumming, Vine.

HERBERT PALMER.

No. 8.

Memo. from Mr. Palmer to The Engineer-in-Chief.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office, Sydney, 5 July, 1883.

In accordance with your verbal instructions, I leave Sydney to-morrow morning for the Port Hacking River, and shall carefully examine the whole of the route originally surveyed by Mr. Stephens up that river, and give the necessary directions to the surveyors employed on the re-survey of that route. to be back in the office on Tuesday morning.

HERBERT PALMER.

No. 9.

Memo. from Mr. Palmer to The Engineer-in-Chief.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office,

Sydney, 17 July, 1883.

In accordance with instructions from the Honorable the Minister for Works, I leave Sydney to-morrow morning to accompany him to Wollongong via the Bottle Forest Road.

HERBERT PALMER.

Please inform Mr. Palmer that I think the Port Hacking survey should be plotted to 4 chains and 40 feet, and the slopes of banks kept out of reach of flood-waters of the creek.—J.W., 20/7/83. Mr Quodling.

No. 10.

Memo. from Mr. Quodling to Mr. Palmer.

Port Hacking Trial Survey.

THE Engineer-in-Chief desires me to state that he thinks the Port Hacking survey should be plotted to 4 chains and 40 feet, and the slopes of banks kept out of reach of flood-waters of the creek

W. H. QUODLING.

No. 11.

Report from Mr. Palmer to Engineer-in-Chief.

Railway Department, 29 August, 1883.

I have the honor to submit herewith plan, sections, together with tables showing gradients, straights, and curves of portion of the Illawarra Railway, from 14 miles 60 chains to 30 miles 30 chains, as permanently staked, via the Bottle Forest Road, and the proposed deviation between these points, via the National Park Camp and the valley of the Port Hacking River.

On the latter route, which is a re-survey of the original trial survey made by Mr. Stephens, the surface line on the section is shown by a black line, and when computing the earthwork quantities from the cross-sections taken throughout this route it was found that in many places retaining walls and viaducts would be required to keep the slopes of the embankments clear of the river. The bed surface line shows the extent to which the centre line must be altered to place the formation sufficiently into cutting to allow of the greater number of the retaining walls and viaducts being dispensed with, and the earthwork quantities as given in the estimate for this route have been computed from the surface line as shown in red on the section, the centre line on the plan being identical with such assumed alterations.

On reference to the comparative estimates it will be found that the chief difference between the true results is an average of paperly 500,000 enhick route of exercition on the proposed deviction with Port

two routes is an excess of nearly 500,000 cubic yards of excavation on the proposed deviation via the Port Hacking River, and that although the total length of tunnelling on this route is less than on the upper route (being in the proportion of about 2 to 3) the cost of bridges and culverts will be much greater than on the staked line.

The table of gradients shows almost equivalent lengths of the steepest inclines on the two routes, while the table of comparative straights and curves shows that on the Port Hacking route there would be 5 miles and 50 chains of railway to be constructed with curves of 10 to 12 chains radii, against 1 mile and $77\frac{1}{2}$ chains on the upper route having curves of similar radii.

I have, &c. HERBERT PALMER.

The length of proposed deviation would, with the necessary alterations, be just half-a-mile in excess of that via the staked line along the Bottle Forest Road.

SYDNEY

SYDNEY AND ILLAWARRA RAILWAY.—COMPARATIVE GRADIENTS.

c Permanently staked route via Bottle Forest Road, 15 miles 50 chains.

Gradient.		•				Length.
1 in 40			,			1 mile 53 chains.
1 in 44	•••	•••		•••		24, ,,
1 in 50	••• •	•••		·	• • • • •	1 , 75 ,
1 in 55 to 1 in 75	· · ·	here is	•••	٠;٠		1 ,, 35 ,,
1 in 76 to 1 in 100						3 miles 50 ,,
1 in 101 to 1 in 200	• • •					3 ,, 49 ,,
1 in 201 to 1 in 400					****	1 mile 10 ,,
1 in 401 to level		•••				1 ,, 74 ,,
•						

Total 15 miles 50 chains.

Proposed deviation via National Park and Port Hacking River, 16 miles $2\frac{1}{2}$ chains.

Gradient.						Length.
1 in 40			•••		• • •	1 mile 76 chains
1 in 44			•••		•••	. 18 ,,
1 in 50	•••	•••	••	•••	• •••	1 " 21 "
1 in 55 to 1 in 75			•••		•••	1 " 9 "
1 in 76 to 1 in 100	•••	•••				2 miles 73 ,,
1 in 101 to 1 in 200	•••		•••			3 ,, 14 ,,
1 in 201 to 1 in 400	•••	•••		`	•••	1 mile 37 ,
1 in 401 to level	· · · · ·	•••			•	$3 \text{ miles} 74\frac{1}{2}$,,

Fotal 16 miles $2\frac{1}{2}$ chains.

SYDNEY AND ILLAWARRA RALILWAY.—COMPARATIVE RADII OF CURVES AND STRAIGHTS.

Permanently staked route via Bottle Forest Road, 15 miles 50 chains.

\mathbf{R} a	dius.							Leng	th.
10 c	hains		•••				•••	\dots 1 mile	50 chains
11	,,		•••	•••	•••		••	•••	nil
12	٠,,	•••	•••				•••		$27\frac{1}{2}$,,
14	,,	`		•••	•••			•••	nil
.15	,,		•••		***	•••	• • •	•••	39 "
16	,,	• • •	•••		• •.•		•••	•••	nil
18	.19		·			•••	•••		nil
20	,,		• • •	••	• • •	• • •	•••		$34\frac{1}{2}$,,
24	,,	•••	• • •	•••	• • •	• • •	•••	•••	38 ,,
2 8	"			•••	•••	• • •	•••	•••	nil
32	"	• • •	•••		• • •	· · ·	•••	•••	nil
36	"	•••	• • •	•••	•••	•••		•••	$46\frac{1}{2}$,,
40	"	•	• • •	:.: ···	•••	• • •	•••	•••	$29\frac{1}{2}$,,
., 48	"	•••	.,	•••	•••	•••	•••	, "	34 . ,,
80	"	• • •	•••	•••	•••		• • •	1 mile	65 ,,
$\frac{240}{2}$	"	•••	••••	•••	•••	• • • •	•••	0:1	59 ,,
Straig	ght	•••	• • •	•••	•••	•••	•••	8 miles	27 ,,
•									

Proposed deviation via National Park and Port Hacking River, 16 miles $2\frac{1}{2}$ chains.

Radius	3.		•	•			Length.
10 chair	ıs	•••		•••		•••	3 miles 31 chains
11 "	•••		•••				59 "
12 ,,		•••	• • •		•••	••	\dots 1 mile 40 ,
14		•••			•••	•••	12 "
16 "	•••.			••,•	•••	•••	, 1 ,, 36 ,,
18 .,			•••	•••	•••	•••	9 ,, ,
20 ,, 24 ,,		•••	•••	•••	•••	• • •	25 "
24 ,,	•••	•••		•••	;	•••	16 ,,
28 ,,	•••	•••	• • •	•••		•••	43 ,,
32 ,,	·	.e.	,	•••		•••	, 49 ,,
40 ,, 80 ,,	•••			``••• <u>.</u>	•••	•••	20 ',,
		•••		• • •	•••	•••	5 "
160 "	•••	•••	•••	•••	•••	•••	7 ,,
Straight	•••	•••	•••	•••	•••	•••	6 miles $50\frac{1}{2}$,,

Total 16 miles $2\frac{1}{2}$ chains

No. 12.

Memo. from Mr. Palmer to The Engineer-in-Chief.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office, Sydney, 5 September, 1883.

On the completion of the re-survey of Mr. Stephens's trial line up the Port Hacking River I instructed the surveyors to make a further trial survey on the eastern side of the river from the point where the original trial line crossed the river, near the Lower Peach Grove Creek; thence down the river, recrossing it below the junction of Kangaroo Creek, and joining the first trial line a short distance to the north of the National Park Camp. The field work in connection with this trial survey will be completed this week, and I shall be glad to have your instructions as to the necessity or otherwise of the surveyors being retained in that locality any longer.

HERBERT PALMER.

If all necessary information has been obtained to prepare careful estimates of this line, the surveyors may return. I shall be glad to see Mr. Palmer on Monday with reference to the surveys for the City Extension.—J.W., 8/9/83. Messrs. Melrose, Millner, Thornbury, and Bullard instructed to return.—H.P., 8/9/83.

No. 13.

Minute from The Engineer-in-Chief to The Minister for Works.

Minute Paper. Subject:—Re alternative routes for the Illawarra Railway, and the Honorable the Colonial Secretary's minute on the subject, of the 26th June, 1883.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office, Sydney, 6 October, 1883.

As directed by the Minister for Works, by minute dated 2nd July, 1883, I have had a survey made of the deviation proposed by the Honorable the Colonial Secretary, commencing at 14 miles 60 chains (on the present staked line of the Illawarra Railway), passing through the National Park Camp up the Port Hacking Creek, and re-joining the staked line above referred to at 30 miles 30 chains.

This line had been advisedly abandoned in favour of the line along the Bottle Forest Road.

In the memo. of the Honorable the Colonial Secretary I find the following statements:-

- (1.) That the Bottle Forest line is nearly 3 miles longer than the Port Hacking line.
- (2.) That the summit level of the Bottle Forest line is 400 feet higher.
- (3.) That the gradients of the Bottle Forest line are not so favourable, and, in consequence of the higher summit level, the haulage would be unremunerative.
- (4.) That the outlay for culverts would not be so expensive as for the gigantic tunnels on the Bottle Forest line.

In reply to these statements, I submit the following:-

(1.)	Length of line by the Bottle Forest route is Do. by Port Hacking Creek	15 m. 16	$50 \text{ chs.} \ 2^{\frac{1}{2}} \ ,$
	Difference	0 m	32½ chs

The Bottle Forest line being therefore $32\frac{1}{2}$ chains shorter than the Port Hacking line, and not nearly 3 miles longer, as stated.

- (2.) The summit level by the Bottle Forest route is 426 feet above the points of divergence of the Port Hacking deviation at 14 miles 60 chains and 30 miles 30 chains (which are practically of the same height); but as the Port Hacking line descends to a level of 308 feet below these points of divergence, the fair comparison between the summit level of the two lines is the difference as represented by the rise made from the points of divergence to the summit of the Bottle Forest Road and the rise made from the lowest level on the Port Hacking route to the same points, viz., the difference between 426 feet and 308 feet, being in fact only 118 feet of extra ascent, instead of 400 feet as stated.
- (3.) I give below a list of the gradients and curves on both lines:-

Comparative Gradients.

Companation	c un	uuion			
• Bot	ttle F Ms.	orest l	line. P	ort Had Ms.	king line. Chs.
I in 40	1	53		1	76
1 in 44	Q	24		0	18
1 in 50	1	75		1	21
1 in 55 to 1 in 75	1	35	**************		
1 in 76 to 1 in 100	3	50	*** ***********		
1 in 101 to 1 in 200	3.	49	******	3	14
1 in 201 to 1 in 400	1	10			
1 in 401 to level	1	74	***************	3	74년
				_	
Total	15	50		16	9 <u>1</u>

Comparative

Comparative Radii of Carves.

				rest lin	ie. Port	Port Hacking line.			
\mathbf{R}	adius.	•		gth.		Len	gth.		
			Ms.	Chs.		Ms.	Chs.		
10	chains		1	50		3	31		
11	"		0	· 0		0	59		
12	,,		0	$27\frac{1}{2}$		1	40		
14	٠,,		0	0		. 0	12		
15	٠,,		0	39	·	. 0	0		
16	"		.0	0		1	36		
18	"		. 0	0		. 0	9		
20	,,		0	$34\frac{1}{2}$. 0	25		
24	"		0	38	· · · · · · · · · · · · · · · · · · ·	. 0	16		
28	"	***************************************	0	0		. 0	43		
32	"		0	Ö		. 0	49		
36			0	$46\frac{1}{2}$. 0	0		
40	11		0	$29\frac{\tilde{1}}{2}$. 0	20		
48	"		0	34^{-}		. 0	0		
80	"		1	65		. 0.	5		
160			0	0		0	7 ·		
240	,,,		0.	59		` 0	0		
\mathbf{St}	raight		8	27		6	$50\frac{1}{2}$		
	0				•				
	•	Total	15	50		16	$2\frac{1}{2}$		

It will be seen that the lengths of gradients of 1 in 40 on the Bottle Forest line are a little shorter than on the Port Hacking line, and as this gradients of 1 in 40 on the Bottle Forest line are a little shorter than on the Port Hacking line, and as this gradient of 1 in 40, which occurs on both lines, will limit the load which can be taken over either line, the cost of haulage will be nearly the same if one engine be used, but if an assistant engine be provided from Coal Cliff the cost of haulage will be in favour of the Bottle Forest line, as the assistant engine would only be required from the point of divergence (at A) of the Port Hacking line to the summit level of the Bottle Forest route where the assistant engine can be dispensed with, as the gradients are all descending from that point towards Sydney; but on the Port Hacking line although the gradients are generally falling towards the National Park Camp for a distance of about eleven (11) miles from the point of divergence at A descents of 1 in 40 again occur, and the assistant engine must either run the whole distance between the points of divergence or another assistant assistant engine must either run the whole distance between the points of divergence or another assistant engine must be provided.

4. The estimated cost of tunnelling on the Bottle Forest line is £41,131, and on the Port Hacking line £28,606.

The cost of culverts and viaducts on the former line would be £40,715, as against £117,200 on the latter line.

The following are comparative estimates of the two routes:-

Des	Description of Work.						Bottle Forest Line.			Port Hacking Line			
Excavation from cuttings Excavation from tunnels Brickwork in culverts and v Brickwork in tunnels Fencing	•••						£ 82,053 41,131 40,715 73,840 4,000	s. 0 0 0 0	d. 0 0 0 0	£ 155,620 28,606 117,220 52,780 4,104	0 0 0 0	d. 0 0 0	
Permanent way laid and ba Add 10 % contingencies	llasted, 1	nciuai 	ng rans	s and is	astening 	gs	$ \begin{array}{r} 40,715 \\ \hline 282,454 \\ 28,245 \end{array} $	0 0 0	$\frac{0}{0}$	42,465 400,795 40,079	0 0	0	
Totals							£310,699	0	0	440,874	0	0	
Difference, £130,175.	,					•							

I may now summarize the two lines as under:-The Bottle Forest line is shorter by $32\frac{1}{2}$ chains.

The cost of construction will be less by £130,175. The cost of haulage will be less, as the steep gradients are more favourably situated on the Bottle Forest line than on the Port Hacking deviation.

The curves are much better, as on this line there are about 2 miles of curves from 10 to 12 chains

radii, while on the Port Hacking line there are $5\frac{3}{4}$ miles of similar curves.

The Port Hacking Line.

I do not know any advantage to be obtained by constructing this line, which is inferior to the one adopted, unless it be of importance to carry a line through the National Park Upon this point I will offer no opinion.

Although I have made comparative estimates of the two lines, founded upon the same prices for similar work, I am satisfied that no contractor would undertake the construction of the Port Hacking line at such low prices as on the Bottle Forest line, nor would the works when completed be maintained as economically.

The mountains on each side of the Port Hacking Creek are so steep that the cost of constructing a double line eventually would be very much in excess of doubling the line on the Bottle Forest route.

Another matter which I think of considerable importance is that the Bottle Forest line is accessible for local traffic, from the point of divergence at 14 miles 60 chains up to 23 miles, while the Port Hacking deviation, after leaving the National Park Camp, cannot be approached on either side.

I enclose, for the information of the Minister, a plan and diagram sections showing both lines, with the curves and gradients upon each, and I advise that the Bottle Forest line, as now permanently staked, be constructed, and that Messrs. Millar be at once authorized to proceed with the works on their contract.

JOHN WHITTON.

I am satisfied from the report of the Engineer-in-Chief for Railways that the Government would not be justified in asking Parliament to consent to a deviation from the approved line. Mr. Whitton will therefore arrange with contractor to continue his work, and also arrange for letting the portions of the line between the end of Millar's section and the point near Coal Cliff, from whence the line for which tenders are now being called for commences.—F.A.W., 9/10/83.

Engineer-in-Chief for Railways, B.C.—J.R., 9/10/83.

SYDNEY TO WOLLONGONG AND KIAMA RAILWAY.

COMPARATIVE Estimates of cost of Engineering Works on portion of permanently staked line between 14\frac{3}{4} miles and 30\frac{1}{2} miles, and by proposed deviation by way of Port Hacking Creek, respectively.

Permanently staked line via Bottle Forest. Length, 15 miles 50 chains.

	Totalis, 10 lines 50 chains,			_
Quantities.		Price.	£ s. d.	
c. yds.	Execuvation.			•
246,302 $401,163$	Cuttings to embankments (14ms. 60chs. to end of Contract No. 1)	'2/2 2/9		4
2,104	Side-cutting do do do do do	2/9	55,159 18 3	3
68,552	Side-cutting do do do Excavation from Tunnels (No. 6)	12/6	41,131 4	
, -	l '	, ,	,	
800	Brickwork. In culverts, &c. (14ms. 60chs. to end Contract No. 1)	£2 12/-	2.080 0 0	^
. 1. yds.	The darket as, were (12ms, obends, to old Colletade 140. 1)	XZ 1Z/-	2,080 0 0	<i>J</i>
128	18-in. drain-pipes do	25/-	. 160 0 0	Ò.
382	24-in. do do	50/-	955 0 0	0
. c. yds. 13,400	In culverts, from end of Contract No. 1 to junction with proposed deviation	£2 16/-	37,520 0 0	^
20,000	In tunnel linings (1.804 lin. vds.)	70/- 1	70,000 0	
960	In tunnel fronts (No. 12)	80/-	3,840 0 0	
rods 10,000	Fencing	0,1	4,000 0	_
10,000		8/-	4,000 0 0	J
ms. chs.	Permanent Way.	per mile.		
15 . 50	Laid and ballasted		22,715 0 0	0
15 50	Rails and fastenings	£1,200	18,000 0 0	J
	·		£282,454 4 7	7
	Add 10 %		28,245 0 0	Ó
1	£19,884 per mile.		C010 C00 4 7	_
•	213,00± per inne.		£310,699 4 7	1
· · · · · · ·	Proposed deviation via Port Hacking Creek. Length, 16 miles 2½ chains.	·		
Quantities,		Price.	£s.d.	
c. yds.	Excavation.	Į.		
670,333 461,460	Cuttings to embankments Do. spoil	2/9 2/9	92,175 15 9 63,444 7 6	
45,771	Excavation from tunnels (No. 7)	12/6	63,444 7 6 28,606 7 6	
• •	· · · · · · · · · · · · · · · · · · ·	,-		-
12,400	Brickwork.	00.10/	04 500 0 0	_
13,800	In tunnel linings (1.250 lin. vds.)	i 70/-՝	24,720 0 0 48,300 0 0) n
22,500	In viaducts (50 arches) and in stone or brick piers	l 80/-	90,000 0 0	ó
1,120	In No. 14, tunnel fronts	80/-	4,480 0 0)
	Timber.			
10,000	In 650 feet run of timber trusses on stone piers Fencing	5/-	2,500 0 0	0
rods	Wanain a			_
10,260	rencing	8/-	4,104 0 (J
	Permanent Wass			
16 miles 16 do	Laid and ballasted		23,265 0 0	0
10 αο	Rails and fastenings	£1,200	19,200 0 0	J
			£400,795 10 9	9
	Add 10 %		40,079 0 0	
			£440,874 10 9	 G
	£27,512 per mile.		~**************************************	J
	Difference, £130,175 6s. 2d.			
	\$100,110 US. 2U.	i	ļ	
	l · · · · · · · · · · · · · · · · · · ·	1		

No. 14.

Memorandum to Messrs. C. & E. Millar.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office,

Sydney, 10 October, 1883. Re suspension of works beyond 15th-mile peg, Illawarra Railway.

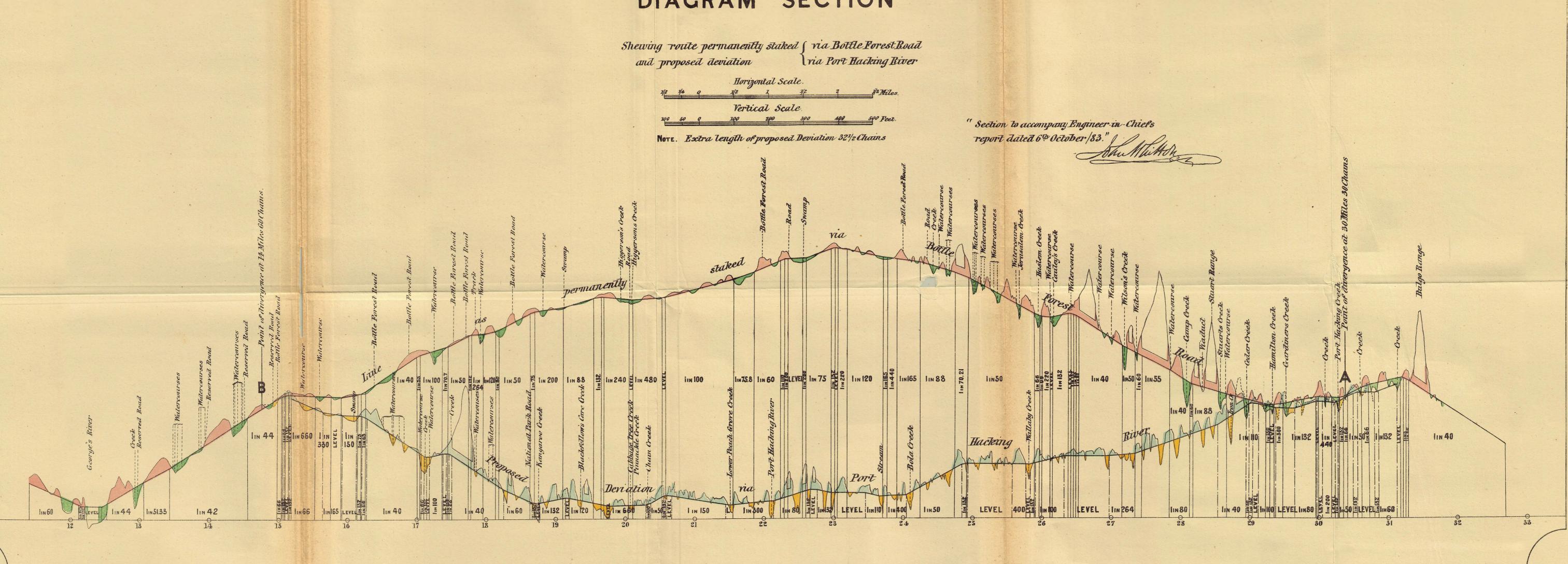
The Minister for Works having decided that the original line now under contract to you shall be adhered to, viz., from the 15th-mile peg to the southern end of your contract, the works on which were suspended on the 4th July last, I have the honor to request you to proceed with the said works in accordance with your contract, plans, and specification, the suspension referred to having been removed.

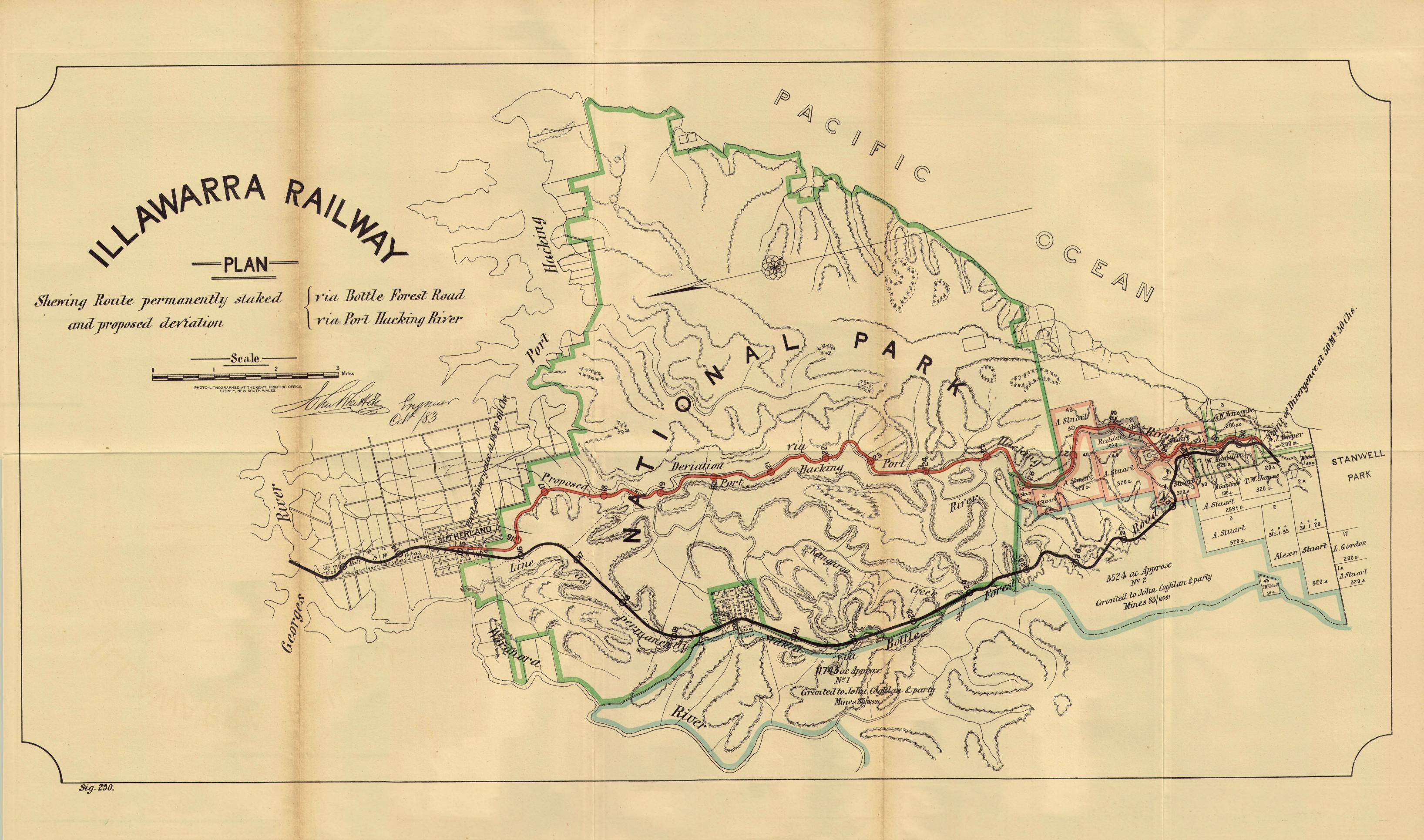
JOHN WHITTON.

[Two plans.]

SYDNEY TO WOLLONGONG & KIAMA RAILWAY

DIAGRAM SECTION





1883.

(THIRD SESSION.)

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

SOUTH COAST RAILWAY.

(PAPERS.)

Ordered by the Legislative Assembly to be printed, 20 December, 1883.

Petition to The Honorable Alexander Stuart, M.P.

The undersigned inhabitants of Illawarra desire most respectfully to express their approval of the proposal of the Government to take the South Coast Railway via the lower route or Port Hacking Creek Valley, instead of by the higher route round by Bottle Forest.

Hoping that you will use every legitimate effort toward causing the railway to be constructed along the said Hacking Valley, as that route is shorter and of easier gradient than the Bottle Forest one, they remain respectfully yours.

[Here follow 36 signatures.]

I forward this to my honorable colleague the Minister for Works. I suppose the survey is nearly completed. I feel sure that what is here asked will, if carried out, most materially benefit the future of the South Coast Railway, and turn it from an unprofitable to a profitable concern, besides the enormous benefit to the future of the Great National Park.

A.S., 7/9/83.

The Under Secretary for Public Works., B.C., 10/9/83.—C.W. Mr. Whitton, B.C., 12/9/83.—J.R. Seen.—J.W., 14/9/83.

J.7.

1883-4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

WOLLONGONG RAILWAY STATION.

(SITE FOR.)

Ordered by the Legislative Assembly to be printed, 15 January, 1884.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 20th November, 1883, That there be laid upon the Table of this House,—

- " Copies of all letters, reports, minutes, or other documents having reference
- "to the site or proposed sites for the Wollongong Railway Station."

(Mr. McCourt.)

	SCHEDULE.	
NO.		PAGE.
1.	Mr. W. McCourt to the Hon. A. Campbell. 26 June, 1882	2
2.	Memorial from Residents of Wollongong to the Hon. J. Lackey, Minister for Works	2
3.	Correspondence between Mr. A. Stuart, M.P., and the Under Secretary for Works, with letter from Mr. Woodward, Secretary to the Wollongong Progress Committee (8 July, 1882), and Minute from Engineer-in-Chief to Under Secretary for Works. 7 August, 1882.	3
	Mr. W. Wiley to the Hon. the Secretary for Works (20 December, 1882), offering site, and sundry correspondence thereon	4.
, 5 .	Mr. W. Wiley to Hon. Secretary for Works (12 September, 1883), withdrawing offer of site, and correspondence	5

WOLLONGONG RAILWAY STATION.

No. 1.

W. McCourt, Esq., to The Hon. A. Campbell, M.L.C.

Dear Sir, You will see from enclosed extract that there is a dispute as to the best site for Wollongong Railway Station. I have 20 acres of level land just behind the Hospital on which the Station was first marked on, but abandoned because of too great a curve to get there. It is now fixed 300 yards west, and further away from the town, while the townspeople want it 300 yards nearer town than my place. Now as my land occupies the middle position there seems a good chance of its being ultimately adopted as a compromise between the Department and people who are agitating. To get it nearer town than my land great engineering difficulties would have to be overcome.

As you probably know Mr. Whitton well I thought you might put in a word for me which would

have weight with him. My land is really the nearest level to Wollongong.

A word to Mr. Lackey also would no doubt do good.

Yours, &c., W. McCOURT.

[Enclosures.]

From Illawarra Mercury.

The Railway.—As will be noticed by our advertising columns, tenders are being invited for the first section of the Illawarra Railway, the 12th September being the date for their closing. We deemed this item of information of sufficient importance to issue a supplement regarding it on Wednesday, as soon as we obtained the intelligence by telegram. The section being tendered for extends from the junction of the Illawarra railway with the main trunk line at Eveleigh to within a few chains of what will be the north end of the tunnel through Coal Cliff, just adjacent to Judge Hargraves' country seat, the distance being a little over 32½ miles. The permanent survey is now complete as far as the Mount Keira Road, a few chains to the rear of the residence of Mr. W. Robson, J.P., of Sunny Bank, or the Cross Roads, and probably within a few days the surveyors will be giving the finishing touches to the line through the Figtree and Berkeley settlements, on their way to Dapto and further southwards. Yesterday the man cutting the turrow or "lock-spit" from peg to peg, which are only a chain apart, had reached to opposite the Hospital, west of Wollongong. The line finally adopted in that quarter is the one surveyed after that through Mr. McCourt's land nearer the town had been abandoned. In a direct line from the town with the Hospital the route chosen is several chains further toward the mountain than was the line curving toward Wollongong through the lands of Messrs. Ahern and McCourt. Opposite the town the approved route runs in a straight line from a short distance north of Fairy Creek, above the main road, to within a few chains of the Mount Keira Railway, nearly half a mile west of the Hospital. It is not at all improbable that it is intended to have the Wollongong station near the centre of this straight piece of line, which is about three quarters of a mile in length. If so, the site of the station will be in Mr. Arthur Robinson's paddock, a little to the north of where the line crosses Gwynne's-lane; and so far as s

No. 2.

Memorial from Residents of Wollongong.

To the Honorable John Lackey, M.L.A. Minister for Works, &c. The Memorial of the inhabitants of the town of Wollongong,-

RESPECTFULLY SHOWETH

That at a public meeting of the inhabitants held at Wollongong on the 13th of June, 1882, presided over by his worship the Mayor, to consider the question of a site for the Railway Station at that place, it was resolved that the most suitable and convenient position for the same is the locality known as "The Green," situate at the eastern end of Crown-street, near the Roman Catholic Church, indicated on the tracing annexed to this memorial.

That by constructing the line of railway from the point marked in the said tracing, by red line from A to B, a little north of the Mount Pleasant Tramway, and continuing, in a southerly direction, the line

could be brought in nearly a straight course to "The Green."

That the only works of any importance along such line would be a small bridge over Para Creek,

and a cutting on the eastern slope of Smith's Hill.

That the bed of Para Creek, being of a good rocky formation, is well adapted for the foundation of such bridge, and the creek itself, being both narrow and still water, the cost of a bridge would not be considerable, and to ensure comparatively easy curves and gradients the cutting or earth-works would not be of much importance.

That the engineering works would be much less formidable on the proposed route to "The Green" than on that marked by the present survey to the west of the town, and a smaller quantity of private land would be required—obtainable at a much lower sum for compensation—by adopting the former route.

That it is doubtless the intention of the Government that facilities shall be afforded for bringing coals and other minerals from mines to be opened to the north and south of Wollongong, to the shipping port at that place, by connecting the latter with the Illawarra Railway line.

That

That when the length of a branch line is added to that already surveyed and marked out for the main line it is seen there would be very little difference in point of distance between such line and that proposed to "The Green," whilst the difference in point of cost of land required and works necessary would be much in favor of the latter route since, by adopting it, the line beyond Wollongong for a distance of about 4½ miles would pass through about 2 miles of Crown lands, and only one bridge would be required, whereas the present survey is through valuable private property and necessitates the building of four bridges.

Your memorialists therefore respectfully request you will be pleased to take the premises into your

favorable consideration and grant the request of your memorialists.

Signed by chairman on behalf of meeting,-

AQUILA PARSONS,

Mayor, Borough Council, Wollongong.

No. 3.

A. Stuart, Esq., M.P., to The Under Secretary for Public Works.

Kindly arrange for a deputation from Wollongong, introduced by self and Dr. Tarrant, to Monday. interview the Minister on Friday (and let me know the hour) to urge their opinion that Wollongong should have a railway station in the town in place of a mile outside of its principal centre.

Yours, &c.

ALEX. STUART. I have informed Mr. Stuart that no day can be fixed till Mr. Lackey's return.—J.R., 8/6/82.

A. Stuart, Esq., M.P., to The Under Secretary for Public Works.

My dear Rae Can this deputation see Lackey to-morrow, say about noon or any other hour?

Thursday.

The letter came while I was in Melbourne, but I wish to telegraph this morning for their guidance, so will be obliged if you can answer me by bearer.

I know Whitton is against their proposal, for he told me so, and I told the good folks of Wollongong, but they fancy, I suppose, that though my puny efforts may avail nothing, yet it is their duty to urge their own views on the Minister.

Believe me, &c.,

Inform—Not to-morrow, but Friday week, at 11.—J.R., 13/7/82.

The Under-Secretary for Public Works to A. Stuart, Esq., M.P.

Sir, Department of Public Works, Sydney, 13 July, 1832. Referring to your letter of to-day's date requesting an interview for a deputation from certain residents of Wollongong on the subject of site for Railway Station at that place to-morrow, I am directed to inform you that the Secretary for Public Works cannot receive the deputation at the time referred to, but has appointed Friday, the 21st instant, at 11 o'clock, a.m., to do so.

I have, &c., JOHN RAE.

ALEX. STUART.

The Hon. Secretary, Wollongong Progress Committee, to A. Stuart, Esq., M.P.

Sir,

I am desired by the committee to intimate to you the intention of a deputation from that body to wait upon the Hon. John Lackey, M.L.A., Minister for Works, and present a memorial from the inhabitants respecting a site for the railway station at Wollongong at the earliest available moment. The committee are further desirous that you should introduce the deputation in common with the Manhard Committee. respecting a site for the railway station at wollongong at the earliest available moment. The committee are further desirous that you should introduce the deputation in company with the Members for the Electorates of Kiama and Shoalhaven, and that the interview with the Minister for Works should take place on Friday next, 14th instant. Will you kindly undertake the duty of arranging the matter with the Minister, and giving me the earliest information as to whether the deputation will be received on the day named? I am, &c.,

FRAS. WOODWARD,

Hon. Secretary.

Will see Mr. Whitton in reference to this matter.—J.L., 21/7/82. Railways, B.C., 24/7/82.—J.R.

The Engineer-in-Chief to The Under Secretary for Public Works.

Memorial from Wollongong Residents forwarded to the Engineer-in-Chief.

I will have surveys made through the Town of Wollongong, and report to the Minister.

The Under Secretary for Works, B.C., 7 Augt., 1882.

J.W., 7/8/82.

A. Stuart, Esq., M.P., to The Under Secretary for Public Works.

My dear Rae The Wollongong deputation will meet the Minister as arranged at 11 on Friday. The subjects they wish to urge upon him are :-

1. The giving to Wollongong a railway station in the town, in place of a mile away from it.

Yours, &c., A. STUART.

No. 1.

No. 2

No. 3.

The Under Secretary for Public Works to A Stuart, Esq., M.P.

Sir,

Department of Public Works, Sydney, 10 August, 1882.

Referring to your letter of the 19th ultimo and previous correspondence on the subject of the site for a railway station in the town of Wollongong, I am directed to inform you that the requisite surveys of the town in question will be made by the Engineer-in-Chief for Railways, and upon the receipt of his report a further communication will be made to you I have, &c., JOHN RAE,

No. 4:

Mr. W. Wiley to The Secretary for Public Works.

91, Pitt-street, Sydney, 20 December, 1882. Hon. Sir, I have the honor, as one interested in the prosperity of Wollongong and the district, where I have extensive freeholds, respectfully to draw your attention to the present surveyed route of the Illawarra line and the currently reported "supposed" site for the Railway Station, marked on plan (number as per margin), as being by its distance from the township unsuitable to the requirements of a district now showing very rapid strides of progress, and would respectfully suggest for your attentive consideration what with me nearly every inhabitant of the district agrees is a more practicable, suitable, and convenient route.

At considerable cost I have had made a trial survey by one of the leading gentlemen in the profession, of a section commencing at a point of your present survey 47 miles 10 chains from Sydney, and particularly set forth in plan as per margin, continuing in a straight line through the Garden Hill Estate, in close proximity to the township, and I am prepared to hand to your department the original plans and data thereof; and, hon. sir, I request that you may be pleased to cause to be made a continuation of such trial survey to a junction with the present surveyed route on this side of Dapto (which will not materially increase the length of the line), when I feel assured your officers will at once recommend the deviation as proposed by me and shown on plans herewith.

In proof, hon. sir, that I am actuated in this by no mercenary motive, I am prepared, should you deem it fit after survey, report, and consideration, to cause the adoption of my proposed deviation, to grant to the Government as a site for station purposes an area of (5) five acres, close to the township, and at the junction of my proposed line with the deviation of the Dapto road, and adjoining the Mount Kiera Railway (shown on plan numbered as per margin) with which, from the gauge of both lines being alike, connection

could be effected and arrangements made so that your trains could run direct to the wharf.

I have been informed that the cause of the surveyed route being so far distant from the township is an idea that the land is too valuable to be resumed for railway purposes, but I opine that my offer as above, and the extra accommodation and convenience to the town and district generally, will so weigh in your considerations as to overcome any imaginary difficulties in this direction.

I may remark that on section plan No. 2, gradients shown as 1 in 34 and 27 can be easily altered inasmuch as there is only a cutting 20 feet deep, which made 40, would meet all requirements. Again, at the station site the grade is 1 in 165.72 which is not considered excessive and could be made easier.

the station site the grade is 1 in 165.73, which is not considered excessive and could be made easier.

I have, &c., WM. WILEY.

Forwarded to the Engineer-in-Chief.—C.A.G., B.C., 13/1/83. Railways, B.C., 6/1/83.

B.C. Instructions from Engineer-in-Chief to Mr. Palmer.

Surveys may be made of this deviation before the surveyors leave the district, but not necessarily Particulars will be given to the surveyors by Mr. Wiley.—J.W., 13/2/83. for adoption.

B.C. Mr. Palmer's reply.

The Engineer-in-Chief. Mr. Edwards instructed to make this trial survey.—H.P., 19/2/83.

[Enclosures.]

Memorandum from Mr. H. Palmer to Mr. Edwardes.

Department of Public Works, Railway Branch, Engineer-in-Chief's Office, Sydney, 19 February, 1883.

An application has been made for the trial-survey of a deviation on the line already permanently staked in the neighbourhood of Wollongong. I wish you on the completion of the survey upon which you have lately been engaged, between Jamberoo and Kiama, to undertake this survey. The route of the deviation is described as follows:—

"To leave the present survey at 47 miles 10 chains, continuing in a straight line through the Garden Hill Estate, in close proximity to the township to a junction with the permanently staked line on this side of Dapto" (I presume this to mean to the north of Dapto).

The application is made by Mr. Wiley, and if he is a resident of the district, you should apply to him for a further description of the route he recommends. Mr. Franklin has, I believe, made a trial-survey of a portion of this route for Mr. Wiley, and he may possibly be able to give you some useful information.

HERBERT PALMER.

Mr. C. A. Edwardes to The Engineer-in-Chief.

Sir,

Railway Survey Camp, Fig Tree, 20 March, 1883.

I have the honor to transmit herewith, under separate cover, plan and section of the trial survey I have made in accordance with your instructions (No. 83-75) of 19th February, of proposed deviation of the line now permanently staked between Wollongong and North Dapto.

Previous to my making this survey I called on Mr. F. A. Franklin, C.E., of Wollongong, who gave me information regarding the route, he having taken a section of part of the line, viz., through the "Garden Hill Estate," for Mr. W. Wiley, of 91 Pitt-street, Sydney, which portion of the line I have mainly followed.

This line, as surveyed by me, would cross the Mount Keira line on the level—the grade of the latter as will be seen from cross section being also nearly level; by shifting the line about 7 chains east, and raising the grade of the Mount Kera line a few feet, this level crossing could be avoided, but so doing would increase the distance, and make the grade and cutting at South Coast Road heavier.

I have shown the level of ordinary flood of American Creek, which occurs when the mouth of the Tom Thumb Lagoon, into which the creek empties, becomes choked, or through the waters being forced back by heavy high tides.

A level crossing would be necessary at the Mount Kembla Tramway and road adjacent thereto. The through mileage by this survey to junction with line permanently staked at peg 47 is 52 miles 75 95 chains, or 9 41 chains longer The cross-sections between 1 and 3 miles I have taken with a view of shortening the line, but which I am of opinion would increase the grade and amount of cutting.

Awaiting your further instructions,—

I have, &c.,

I have, &c., CHAS. A. EDWARDES.

B.C. Mr. Palmer to Engineer-in-Chief.

The route through the Garden Hill Estate, as suggested in the accompanying letter, has been surveyed, and is now adopted and plotted on the working plan and section.

The station site for Wollongong will however be on the southern side of the Wollongong and Kiama road, and not on the northern side as suggested by Mr. Wiley.—H.P., 5/7/83. The Engineer-in-Chief.

No. 5.

Mr. W. Wiley to The Secretary for Public Works.

91, Pitt-street, Sydney, 12 September, 1883. Being without reply to mine of the 20th December last, offering to the Government free a railway station site on my Garden Hill Estate, near Wollongong, and understanding that a site has been fixed upon, I have the honor to withdraw my offer as and from this date.

I am, &c., WM. WILEY,

Can Mr. Whitton give me any information about this letter?—F.A.W., 12/9/83. Mr. Palmer.—W.H.Q., 25/9/83. p. M.G. J.R. B.C., 14/9/83.—

Mr. H. Palmer to The Engineer-in-Chief.

I HAVE some recollection of seeing a letter from Mr. Wiley, in which a promise of a station site was made in the event of the Wollongong Station being fixed on the Garden Hill Estate, which lies to the north of the Wollongong and Kiama Main Road. The station site, as originally chosen, would have been on this estate, but since the centre line has been altered so as to pass nearer to the town of Wollongong it has been necessary to remove the station site to the southern side of the Kiama Road, and upon property which is not owned by Mr. Wiley.

H.P., 2/10/83.

Under Sec. for Works, B.C., 4 Oct., /83.—W.H.Q., for the Engineer-in-Chief. F.A.W., 8/10/83. Railways, B.C., 10/10/83.—J.R. Inform Mr. Wiley. -**F.A.W.**, 8/10/83. Submitted.

[Enclosure.]

The Under Secretary for Public Works to Mr. W. Wiley.

Sir,

Department of Public Works, Sydney, 10 October, 1883.

I am directed to acknowledge the receipt of your letter of the 12th ultimo, withdrawing your offer to the Government, free, a site for a railway station, Wollongong, i.e., portion of the Garden Hill Estate.

I have, &c., JOHN RAE.

Sydney: Thomas Richards, Government Printer.—1884.

[6d.]

1883. (THIRD SESSION.)

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

GREAT NORTHERN RAILWAY.

(ISSUE OF TICKETS, &c.)

Ordered by the Legislative Assembly to be printed, 29 November, 1883.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 18th October, 1883, That there be laid upon the Table of this House a Return showing,—

- " (1.) The number of Tickets issued at all Stations north of Singleton by the Up-mail Train, on the 14th of August last, for Singleton.
- "(2.) The number of Tickets issued at all Stations on the Great Northern
- " and North-western Railways to Singleton, on the 15th and 16th August
- "last, the amount of revenue derived therefrom, and the additional
- -" expenditure incurred in connection therewith.
- "(3.) The daily average number of Tickets issued at the various Stations,
- "between and inclusive of Newcastle and Murrurundi, to Singleton, from
- "the 1st January, 1883, to 12th August, 1883, and the amount of revenue
- "derived therefrom."

(Mr. Gould.)

- No. 1. The number of tickets issued at all stations north of Singleton by the up-mail train, on the 14th of August last, for Singleton.—Answer: 197 tickets.
- No. 2. The number of tickets issued at all stations on the Great Northern and North-western Railways to Singleton, on the 15th and 16th August last, the amount of revenue derived therefrom, and the additional expenditure incurred in connection therewith.—Answer: 3,282 tickets were issued on the days mentioned, from which a revenue of £967 6s. 8d. was derived. The additional expenditure incurred for the running of special trains and advertising in connection therewith amounted to £270 10s.
- No. 3. The daily average number of tickets issued at the various stations, between and inclusive of Newcastle and Murrurundi, to Singleton, from the 1st January, 1883, to 12th August, 1883, and the amount of revenue derived therefrom.—Answer: The daily average number of tickets issued between the dates named was 31, and the amount of revenue received for the period was £1,601 12s. 2d.

1883. (THIRD SESSION.)

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY FROM WERRIS CREEK TO GUNNEDAH.

(COST OF LINE AND PARTICULARS OF TRAFFIC.)

Ordered by the Legislative Assembly to be printed, 7 November, 1883.

RETURN to an *Order* made by the Legislative Assembly of New South Wales, dated 6th September, 1881, That there be laid upon the Table of this House, a Return showing,—

"(1.) The cost of the construction of the Railway Line from Werris Creek to Gunnedah, including all Stations and other buildings purchased, rented, and erected thereon.

"(2.) The cost of the construction of the Railway Line from Werris "Creek to Tamworth north, including the viaduct, bridge, old and new "station houses, and other buildings purchased, rented, and erected "thereon.

"(3.) The amounts received at Gunnedah and Stations between Werris "Creek and that town for goods, live stock, and coaching traffic; the "amounts collected by all Stations on the Great Northern Line for goods and live stock forwarded from Gunnedah and Stations between "Werris Creek and that town; also the amounts collected by all Stations for coaching traffic to Gunnedah and Breeza during the year ending "30th June, 1881;—these Returns to be exclusive of goods carried for "Government works.

"(4.) The amounts received at Tamworth and other Stations between "Werris Creek and that town for goods, live stock, and coaching traffic; the amounts collected by all the Stations on the Great Northern Line for goods and live stock forwarded from Tamworth and other Stations between Werris Creek and that town; also the amounts collected by all "Stations for coaching traffic to Tamworth and Currabubula during the "year ending the 30th June, 1881;—these Returns to be exclusive of goods carried for Government works.

"goods carried for Government works.

(5.) The cost of maintaining and working the Line between Werris

Creek and Gunnedah, giving cost and number of locomotive engines

employed, cost and description of passenger carriages used, and expenditure of every description incurred by Locomotive, Permanent Way, and

Traffic Departments during the year ending 30th June, 1881.

"(6.) The cost of maintaining and working the Line between Werris "Creek and Tamworth, giving cost and number of locomotive engines "employed, and cost and description of passenger carriages used, and "expenditure of every description incurred by Locomotive, Permanent "Way, and Traffic Departments during the year ending 30th June, 1881."

(Mr. Joseph P. Abbott.)

RAILWAY FROM WERRIS CREEK TO GUNNEDAH.

RETURN to an Order of the Legislative Assembly for certain information respecting t from Werris Creek to Gunnedah and Werris Creek to Tamworth North:	he Railwa —	y Lines
	£	£
(1.) Cost of the construction of the Railway Line from Werris Creek to Gunnedah, including all Stations and other buildings purchased, rented, and erected thereon, to 30th June, 1881 Add proportion cost of Rolling Stock, Machinery, &c., estimated	245,811 20,000	-
Total cost construction and equipment		265,811
(2.) Cost of the construction of the Railway Line from Werris Creek to Tamworth, including the Viaduct Bridge and old and new Station-houses and other buildings purchased, rented, and erected thereon, to date as above	195,872 17,000	-
Total cost		*212,872
* This amount is only estimated, as the expenditure on the section was not kept separately.		•
* This amount is only estimated, as the expenditure on the section was not represented.		
(3.) Amounts received at Gunnedah and Stations between Werris Creek and that town for goods, live stock, and coaching traffic	10,862	
Ditto collected by all Stations on the Great Northern Line for goods and five stock for walded	. 9.009	
	3,803 1,572	
Amounts collected by all Stations for coaching traffic to Gunnedah and Breeza		
		16,237
The above amounts are for the year ending 30th June, 1881, and are exclusive of goods carried for Government works.		
(4.) Amount received at Tamworth and Stations between Werris Creek and that town for goods, live stock, and coaching traffic	16,289	
Ditto collected by all Stations on the Great Northern Line for goods and live stock forwarded from Tamworth and other Stations between Werris Creek and that town Amount collected by all Stations for coaching traffic to Tamworth and Currabubula	2,432 2,308	
·	~	21,029
Note.—See remarks on previous question.		
(5.) Cost of maintaining and working the Line between Werris Creek and Gunnedah, including all charges		14,127
Number of locomotives employed, 2; cost, £5,736. ,, passenger carriages, 5; ,, 2,308, consisting of 1 first-class, 1 composite, 1 second-class, and 2 brake-vans (light).		
The number of goods waggons could not be given, as they run over the whole line.		
(6.) Cost of maintaining and working the Line between Werris Creek and Tamworth, estimated only		18,007
The number and description of the rolling stock cannot well be given, as the trains run over the whole line from Newcastle unwards.		
Note.—In the above statements the receipts from the carriage of Government materials have been excluded; but in the expenses incurred for working and maintaining, the cost of conveying these goods is included.	•	
The total receipts for the year ending 30th June, 1881, including carriage of Government goods,		٠.
were— Werris Creek to Gunnedah Werris Creek to Tamworth		$19,381 \\ 21,478$

1883-4

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

NARRABRI AND BOGGABRI RAILWAY STATIONS.

(TRAFFIC, EARNINGS, &c.)

Ordered by the Legislative Assembly to be printed, 22 January, 1884.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 23rd November, 1883, That there be laid upon the Table of this House, a Return showing,—

- "(1.) The number of truck-loads of goods received at, and the number of
- "truck-loads of goods despatched from, the Narrabri Railway Station, from
- "the date of opening until the 30th October last.
- "(2.) The gross earnings from passenger, goods, and coaching traffic, with "net profit (if any) during the same period.
- "(3.) The number of bales of wool conveyed from Narrabri during same "period.
- "(4.) The like information regarding Boggabri Station."

(Mr. Dangar.)

NARRABRI AND BOGGABRI RAILWAY STATIONS.

RETURN of traffic to and from Narrabri Station, from 4th October, 1882, to 30th October, 1883.

	· · ·				1	Gross E	arnings.	r				
Number of truck-loads of received.	Number of truck-loads despatched.	Pas	ssenger T	raffic.	Other B	ranches o Traffic	of Coaching	G	loods Traffic	:	Net profit.	Number of Bales of Wool despatched.
		În.	Out.	Total.	In.	Out.	Total.	In.	Out.	Total.		
6,911	3,583	£ 7,476 	£ 9,252	£ 16,728,	£ 2,447	£ , 596 ,	£ 3,043	£ 42,506,	£ 33,380	£ 75,886	The net profit for the period asked cannot be accurately given, as the returns of expenditure for broken periods are not kept separately in the accounts.	

RETURN of traffic to and from Boggabri Station, from 11th July, 1882, to 30th October, 1883.

4.)	1 % 1.0%;	, ,	11	,	,	Gross E	arnings.	,				
Number of truck-loads received.	Number' of truck-loads despatched.	Pas	ssenger T		Other B	ranches o	of Coaching		oods Traffic	·	Net profit.	Number of Bales of Wool despatched.
	ا الم	In.	Out.	Total.	In.	Out.	Total.	In.	Out.	Total.		
1,548	842	2,226	2,349	£; 4,575	. £ 715	£, 296	£, 1,011	£ 9,7,39	9,382	£ 19,121	The net profit for the period asked cannot be accurately given, as the returns of expenditure	
	1	·				١		11,1.4		,	for broken periods are not kept separately in the accounts.	

1883-4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY FROM GUNNEDAH TO NARRABRI.

(COST OF CONSTRUCTON, &c.)

Ordered by the Legislative Assembly to be printed, 20 February, 1884.

[Laid upon the Table of the House in accordance with promise made by the Honorable the Secretary for Public Works, in answer to Question No. 2, on Votes and Proceedings No. 49, of the 1st February, 1884.]

Question.

- (1.) The cost of the construction of the Railway Line from Gunnedah to Narrabri via Boggabri, including all Stations and Buildings purchased, rented, and erected thereon?
- (2.) The cost of maintaining and working the said Line, giving cost and number of Locomotive Engines employed, cost and description of Passenger Carriages used, and expenditure of every description incurred by Locomotive, Permanent Way, and Traffic Departments, from day of opening until 31st December last?

Answer.

The cost of construction, including Buildings, &c., amounted to £309,153 3s. 3d. Three Locomotives are employed—two Passenger and one Goods—and their cost amounted to £7,040 3s. 2d. Five Passenger Carriages are used on this Line and their cost amounted to £2,382.

The expenditure on the section of the Line from Gunnedah to Narrabri has not been kept separately, but has been included in the section from Werris Creek to Narrabri, consequently the cost of construction, &c., is given as closely as can be ascertained.

The Rolling Stock is used for the whole length of the Line and includes Trucks, Covered Vans, Brake Vans, Live Stock Waggons, &c., &c., the cost of which is not given in the above Statement.

The working expenses cannot be separated, but will be shown for the whole section from Werris Creek to Narrabri, when yearly returns are prepared.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY FROM GRAFTON TO NEW ENGLAND.

(TRIAL SURVEYS, PETITIONS, &c.)

Ordered by the Legislative Assembly to be printed, 16 September, 1884.

RETURN to an Order of the Honorable the Legislative Assembly of New South Wales, dated the 10th July, 1884, That there be laid upon the Table of this House,—

- "(1.) Copies of all correspondence and Surveyors' Reports of all Trial
- "Surveys made since the 1st January, 1879, relating to the proposed Line
- "of Railway from Grafton to the Tableland of New England.
- "(2.) A complete list and the date of all Petitions presented to Parlia-
- "ment relating thereto, the number of signatures to each Petition, and by
- "whom the Petitions were presented."

(Mr. See.)

SCHEDULE of Correspondence, Reports, &c., relating to Trial Surveys from Grafton to New England, in continuation of Returns laid on the Table of the House (not printed).

No. and Date.	From—to.	Subject.
1 31 May, 1882 2 7 June, 1882 3 1 June, 1882		Forwarding plan; remarks. Returning plan; instructions.
4 5 July, 1882 5 11 July, 1882 6 7 July, 1882		Urging exploration of suggested route. Report. Forwarding tracings. Instructions re trial survey.
7 July, 1882 8 7 July, 1882 9 7 July, 1882	Same to Mr. Hogg Same to Mr. Millner Same to Mr. Hogg	Forwarding plan and section. Forwarding tracing; instructions. Instructions re trial survey.
0 10 July, 1882 1 11 July, 1882 2 11 July, 1882	Mr. Hugh Wyndham to Minister for Works	Enclosing letter re Railway. Forwarding tracings, &c. Instructions re trial survey.
3 12 July, 1882 4 15 July, 1882 5 21 July, 1882	Mr. Walker to Engineer-in-Chief	Telegram for instructions. Asking for compensation, &c. Forwarding plan.
6 25 July, 1882 7 25 July, 1882 8 10 Aug., 1882	Assistant Engineer for Trial Surveys to Mr. Warren Same to Mr. Walker	Instructions re trial survey. Instructions re trial survey. Plan paper, &c., wanted.
9 10 Aug., 1882 0 21 Aug., 1882 1 4 Sept., 1882	Same to same	Forwarding plan and section, &c. Report. Instructions re trial survey.
22 23 Aug., 1882 31 Aug., 1882 4 5 Sept., 1882	Mr. Hogg to Engineer-in-Chief	Forwarding plan and section, &c. Books, &c., required.
5 8 Sept., 1882 6 11 Sept., 1882 7 30 Sept., 1882		Explaining what tracing required. Instructions re trial survey. Instructions re trial survey. Monthly progress report.

	 		
	No. and Date.	Fromto.	Subject.
28	30 Sept., 1882	Assistant Engineer for Trial Surveys to Mr. Millner	Instructions re trial survey.
29	30 Sept., 1882	Same to Mr. Hogg	Instructions re trial survey.
30	2 Oct., 1882	Mr. Warren to Engineer-in-Chief	Monthly progress report.
31	2 Oct., 1882	Mr. Hogg to same	Monthly progress report.
32	4 Oct., 1882	Mr. Hogg to Assistant Engineer for Trial Surveys	Telegram for instructions.
3 3	5 Oct., 1882	Assistant Engineer for Trial Surveys to Mr. Hogg	Instructions.
34	10 Oct., 1882	Mr. Hogg to Engineer-in-Chief	Explaining meaning of telegram.
35	10 Oct., 1882	Same to Mr. Warren	Journal unsatisfactory.
36	17 Oct., 1882	Assistant Engineer for Trial Surveys to Mr. Hogg	Instructions re trial survey.
37	14 Oct., 1882	Mr. Millner to Engineer-in-Chief	Report.
38	24 Oct., 1882	Mr. Harwood to Engineer-in-Chief	Camp shifted.
39	24 Oct., 1882	Mr. Stuart to Engineer-in-Chief	Camp shifted.
40	31 Oct., 1882	Mr. Hogg to Engineer-in-Chief	Monthly progress report.
41	1 Nov., 1882	Mr. Warren to Engineer-in-Chief	Monthly progress report.
42	1 Nov., 1882	Mr. Millner to Engineer-in-Chief	Monthly progress report.
43	1 Nov., 1882	Mr. Stuart to Engineer-in-Chief	Monthly progress report.
44	1 Nov., 1882	Mr. Harwood to Engineer-in-Chief	Monthly progress report.
45	8 Nov., 1882	Mr. Warren to Engineer-in-Chief	Plan paper required.
46	20 Nov., 1882	Mr. Stuart to Engineer-in-Chief	Camp shifted.
47	25 Nov., 1882	Mr. Harwood to Engineer-in-Chief	Camp shifted.
48	30 Nov., 1882	Same to same	Monthly progress report.
49	1 Dec., 1882	Mr. Hogg to Engineer-in-Chief	Books, &c., required.
50	1 Dec., 1882	Mr. Millner to Engineer-in-Chief	Books, &c., required.
51	1 Dec., 1882	Mr. Hogg to Engineer-in-Chief	Monthly progress report.
52 53	1 Dec., 1882	Mr. Millner to Engineer-in-Chief	Monthly progress report.
54	1 Dec., 1882 2 Dec., 1882	Mr. Stuart to Engineer-in-Chief	Monthly progress report.
55	9 Dec., 1882	Mr. Warren to Engineer-in-Chief	Monthly progress report. Forwarding books; remarks.
56	22 Dec., 1882	Mr. Harwood to Engineer-in-Chief	Will shift camp, &c.
57	10 Jan., 1883	Assistant Engineer for Trial Surveys to Mr. Harwood	Instructions re trial survey.
58	24 Dec., 1882	Mr. Warren to Engineer-in-Chief	Report.
59	27 Dec., 1882	Assistant Engineer for Trial Surveys to Mr. Warren	Instructions re trial survey.
60	30 Dec., 1882	Mr. Harwood to Engineer-in-Chief	Monthly progress report.
61	1 Jan., 1883	Mr. Stuart to Engineer-in-Chief	Monthly progress report.
62	1 Jan., 1883	Mr. Hogg to Engineer-in-Chief	Monthly progress report.
63	1 Jan., 1883	Mr. Warren to Engineer-in-Chief	Monthly progress report.
64	2 Jan., 1883	Mr. Millner to Engineer-in-Chief	Monthly progress report.
65	2 Jan., 1883	Assistant Engineer for Trial Surveys to Mr. Warren	Instructions re trial survey.
66	2 Jan., 1883	Mr. Warren to Engineer-in-Chief	Monthly progress report.
67	2 Jan., 1883	Assistant Engineer for Trial Surveys to Mr. Stuart	Instructions re trial survey.
68 69	13 Jan., 1883	Mr. Stuart to Engineer-in-Chief	Forwarding plan, &c.
70	20 Jan., 1883	Assistant Engineer for Trial Surveys to Mr. Millner	Instructions re trial survey.
71	31 Jan., 1883 31 Jan., 1883	Mr. Stuart to Engineer-in-Chief	Monthly progress report. Monthly progress report.
. 72	1 Feb., 1883	Mr. Hogg to Engineer-in-Chief	Monthly progress report.
73	1 Feb., 1883	Mr. Millner to Engineer-in-Chief	Monthly progress report.
74	8 Feb., 1883	Same to same	Telegram—survey completed.
75	1 Mar., 1883	Mr. Stuart to Engineer-in-Chief	Report.
76	12 Mar., 1883	Assistant Engineer for Trial Surveys to Mr. Harwood	
77	12 Mar., 1883	Same to Mr. Stuart	Instructions re trial survey.
78	1 Mar., 1883	Mr. Stuart to Engineer-in-Chief	Monthly progress report.
79	1 Mar., 1883	Mr. Harwood to Engineer-in-Chief	Monthly progress report.
80	1 Mar., 1883	Mr. Millner to Engineer-in-Chief	Monthly progress report.
81	1 Mar., 1883	Mr. Hogg to Engineer-in-Chief	Monthly progress report.
82	1 Mar., 1883	Mr. Harwood to Engineer-in-Chief	Will shift camp.
83	9 Mar., 1883	Mr. Hogg to Engineer-in-Chief	Report.
84	10 Mar., 1883		Section paper wanted, &c.
85	15 Mar., 1883		Forwarding paper, &c.
86 87	31 Mar., 1883	Mr. Harwood to Engineer-in-Chief	Monthly progress report.
87 88	31 Mar., 1883		Party will be broken up.
89	1 April, 1883 3 April, 1883	Mr. Stuart to Engineer-in-Chief	Monthly progress report. Instructions.
90	8 April, 1883	Mr. Hogg to Engineer-in-Chief	Forwarding plan and section; remarks.
91	30 April, 1883	Mr. Stuart to Engineer-in-Chief	Trial survey completed.
	1		
			

RAILWAY FROM GRAFTON TO NEW ENGLAND.

No. 1.

Mr. Warren to Engineer-in-Chief.

Ry. Survey Camp, via Glen Innes, 31 May, 1882. I have the honor to forward herewith plan showing two proposed junctions of the trial line

from Grafton, via Mann R. with the S.N. Railway near Glen Innes.

The approximate distance from the crossing of Bald Nob Creek to the point marked B on the G.N. Railway is 22 miles, and to the point marked C, which is nearer Glen Innes, is 24 miles. The line A to B has 2 miles the advantage over the other in length of construction, has better gradients, and does not go through purchased land, besides bringing the town of Tenterfield nearer to the coast. Please return. me the plan with instructions as to which line I am to survey.

I have, &c.,

HENRY B. WARREN.

Plan returned to Mr. Warren with instructions.—H.P., 7/6/82.

No. 2.

Assistant Engineer for Trial Surveys to Mr. Warren.

HEREWITH I return your parish map showing the district to the north of Glen Innes, on which I have shown how the route of the amended survey from Grafton is to be connected with the Great-Northern Railway near the crossing of the Beardy River.

HERBERT PALMER.

The longitudinal section of your amended survey may be plotted to a scale of 4 chains horizontal and 40 feet vertical to 1 inch.

No. 3.

Mr. Bawden to Engineer-in-Chief.

Grafton, 1 June, 1882. Having, as you are aware, for some years past taken some interest in promoting the subject of railway extension between Grafton and central New England, I do myself the honor to invite your attention to the desirability of an examination being made of the country between South Grafton, by way of Chambeyne Creek, thence to Doughboy Hollow on the Nymboi River, and thence downwards along the little of the creek, the country between the Mitchell River et Tochedgenry. It have valley of that river to the crossing of the present survey over the Mitchell River at Jackadgery. I have not been over that part of the route indicated between the head of Chambigne Creek and Jackadgery, and therefore can say nothing of the practicability of it.

Mr. Surveyor Francis explored the route from South Grafton to the Nymboi River at Doughboy. From thence to Jackadgery the distance is not great, and the exploration of it might be done quickly

From thence to Jackadgery the distance is not great, and the exploration of it might be done quickly without delaying the general survey.

My chief reason for asking for this exploration is in order, should the route prove practicable, that the advantages of the extension of the line from Grafton towards the interior may be availed of as speedily as possible in taking up the trade which already exists, and so relieve the Newton-Boyd Road.

By the present surveyed route from South Grafton to Jackadgery and thence up the Mitchell River, the route will need to be extended some 60 miles before it will pick up any of that trade which exists between Grafton, Glen Innes, and the west by dray traffic at present. That consequently, this long length of extension and large expenditure of money will have to be made before there is any return in the shape of revenue from the line derivable from the existing trade; that until that length is completed there can be little done to promote the settlement of people upon New England, or to afford those facilities for the despatch of cereals and minerals from thence and supplies thereto which the extension of a railway is intended to confer.

next place at which this could be done would be at Newton-Boyd.

I need hardly point out to you what a great advantage this would be,—the intercepting the trade which already exists, and thereby turning it to account as revenue to the line, as well as giving those engaged in or interested in that traffic the benefit of the extension as speedily as possible as facilitating

these operations.

Apologizing for thus troubling you with these crude remarks, and requesting that you will

Thave &c... I ĥave, &c favourably consider the subject,-

Acknowledge, and say the matter referred to shall receive attention.—J.W., 6/6/82. Palmer, for information and examination on his visit to Grafton.—J.W., 6/6/82. Mr. Palmer. Mr. I have taken a copy of this letter, and will see Mr. Bawden when I visit Grafton.-H.P., 9/6/82.

No. 4.

Mr. Walker to Engineer-in-Chief.

Sir, Railway Survey Camp, via Glen Innes, 5 July, 1882. I have the honor to inform you that I have completed the survey of the deviation via Shannon Vale as far as requisite, and shall finish the plans this week or early in next, when I shall be ready to shift camp down the river to cross-section (the old survey) where required, in accordance with your instructions, for which purpose I shall require plans and sections of that part of the line. I have, &c

J. DOUGLAS WALKER.

No. 5.

Assistant Engineer for Trial Surveys to Mr. Walker.

ATTACHED I send you tracings of portions of plan and section of original trial survey South Grafton to Glen Innes, where cross-levels have to be taken, and for which I gave you instructions when in Glen Innes last month.

HERBERT PALMER.

No. 6.

Assistant Engineer for Trial Surveys to Mr. Millner.

7 July, 1882.

On the completion of the trial survey upon which you are now engaged, from Byron Bay to a junction with the original trial survey Laurence to Tenterfield, you may proceed without delay to Tabulam, and take up a length of trial survey from a point on the trial survey recommended by Mr. Marcolini at the village of Alice, on the Clarence River, about 10 miles below Tabulam; thence across the Clarence at

that point to a junction with the trial survey lately made by Mr. Hogg a few miles above Tabulam.

I will forward a tracing of plan and section of the trial line in the neighbourhood of Alice, and address it to you at Tabulam, next week, and will instruct Mr. Hogg to forward to you a tracing of his

plan and section at the point where I wish you to join his line.

Mr. Chauvel, at Tabulam, will I am sure be happy to point out to you the direction of the line to be surveyed.

HERBERT PALMER.

No. 7.

Assistant Engineer for Trial Surveys to Mr. Hogg.

7 July, 1882.

Under separate cover I have forwarded to you plan and section paper and tracing paper, also tracings of plan and section of original trial survey Laurence to Tenterfield, from 90 miles to Tenterfield, on which I have shown the end of the contract Glen Innes to Tenterfield at the south side of Molesworth-street, at which point I arranged your amended trial survey from Tabulam should be connected with the Great Northern Railway.

HERBERT PALMER.

No. 8.

Assistant Engineer for Trial Surveys to Mr. Millner.

7 July, 1882.

UNDER separate cover I have forwarded you a tracing of the plan and section of portion of the original trial survey Laurence to Tenterfield, from the junction of the trial survey to Casino (from Wyon) towards the Richmond Range.

As you have experienced some difficulty in connecting your survey from Byron Bay with the original trial survey on the Richmond Range, you may connect with that survey in the neighbourhood of Busby's Flat, at about 43 miles, and may forward your through plan and section from Byron Bay to that point of junction with the least possible delay.

HERBERT PALMER.

No. 9.

Assistant Engineer for Trial Surveys to Mr. Hogg.

7 July, 1882.

I wish you to forward to Mr. Millner without delay a tracing of your plan and section at that point, a few miles above Tabulam, where I arranged he was to connect his survey from the crossing of the Clarence River at Alice.

HERBERT PALMER.

No. 10.

Mr. H. Wyndham to Minister for Works.

Grafton and Glen Innes Ry., Bukulla, Inverell, 10 July, 1882. Sir I think that the enclosed letter against the above proposed railway will be found worth your Faithfully yours perusal.

HÜĞH WYNDHAM. [Enclosure.]

[Enclosure.]

To the Editor of the Inverell Times.

As I have been asked by the Committee of the Railway League to move an important resolution at the monster meeting to be held next Thursday, and have been obliged to decline, and as I shall be conspicuous at that meeting by my absence, I beg you will allow me to state publicly my reasons.

I have always considered that, however desirable it might be to these districts to have a railway constructed to Grafton,

we cannot now, with any fairness or reason, ask the country to incur such an expense when for a tithe of the money we might be connected with the Great Northern Railway at Uralla, and so be placed in the course of a very few years in direct com-

munication with Sydney and Melbourne.

Moreover, the country is bound to construct its railways with due regard to some return for the capital invested, and it has yet to be proved—though there can be no doubt of the matter—that the portion of the Great Northern line from Tamworth to Tenterfield will pay; but if another cross-cutting railway is made to its chief if not only feeding districts, one might pay, but both certainly would not. I fear that the only result of the present agitation will be that we shall have a railway to Glen Innes instead of Uralla, and the district will be saddled for the rest of our days with an unnecessary 50 miles of railway freight. We ought to look at this matter as it will appear to others not connected with the district, and apart from local prejudices. Depend upon it that if the Glen Innes-Grafton Railway ever does come before the House—which is very doubtful—some very hard things will be said about it.

Faithfully yours,
Bukkulla, July 3rd, 1882.

HUGH WYNDHAM.

No. 11.

Assistant Engineer for Trial Surveys to Mr. Millner.

UNDER separate cover and by same post I have forwarded to you, addressed to Tabulam, a tracing of plan and section of portion of original trial survey North Grafton to Tenterfield, also county map and instructions for a trial survey required from the neighbourhood of Alice to a junction with Mr. Hogg's amended survey near Tabulam.

HERBERT PALMER.

No. 12.

Assistant Engineer for Trial Surveys to Mr. Millner.

11 July, 1882.

Under separate cover I have forwarded to you to the above address a tracing of the plan and section of portion of the trial survey from North Grafton to Tenterfield, showing the crossing of the Clarence River

I wish you to make a trial survey and to forward a plan and section with the least possible delay, in accordance with the instructions I gave you at Grafton, from the point I have marked on the plan east of the Clarence River, about 10 miles below Tabulam, thence across the Clarence above the previous crossing at Alice, thence across the Timbarra River to a junction with Mr. Hogg's amended line between Plumbago and Emu Creeks.

HERBERT PALMER.

In the same roll with the tracings mentioned above I have sent you a lithograph of the county map, showing the district through which the survey has to be made.—H.P., 11/7/82.

No. 13.

Mr. Walker to Engineer-in-Chief.

[Telegram.]

12 June, 1882.

AM awaiting further instructions here.

J. DOUGLAS WALKER.

Telegraphed to Mr. Walker,—"Tracings and instructions sent to you by last night's post to Glen Innes."—H.P., 12/7/82.

No. 14.

Mr. G. S. Peel to Assistant Engineer for Trial Surveys.

Sir, Glen Innes, 15 July, 1882. The new railway line from here to Deepwater which you inspected and approved of, and which you said would be a great saving to the country, Mr. Hoyle told me that he reported to you that I was the person who took him over the line. Allow me to ask if you will use your interest that I may be compensated for the same. I have applied to the Department and received answers saying that I was not employed by them. When Mr. Hoyle was speaking to me about a new line, he said that he could not go out until he received instructions from the Government. Some months after our conversation I received a note from him asking me to show him the new line. The old condemned line which was years in hand the surveyors had received instructions to finish without delay, which has been a very large and unnecessary outlay to the country; the line which is a large saving, the Government try to excuse themselves, saying they did not directly engage me as tenders are called for the new line. Will you kindly report on it, that I may be paid.

The

The Grafton, Glen Innes, and Inverell lines I have been asked to show. You cannot blame me for declining to do so, as the Government does not want to pay without putting me to expense and trouble. In the event of any line that I might show, I want nothing unless approved of.

I have, &c., GEO. SAM. PEEL.

Perhaps this should be put with the previous papers on the subject. I think I have alread reported that I did not consider this applicant had any claim.—H.P., 18/7/82. The Engineer-in-Chief. I think I have already

No. 15.

Mr. Hogg to Engineer-in-Chiéf.

Tenterfield, 21 July, 1882. Sir, Under separate cover, I have the honor to forward a portion of the plan of the survey from North Grafton to Tenterfield, being a length from 66 miles 18 chains to 82 miles 22 chains between Tabulam and Tenterfield. When another length is completed it will be forwarded at once.

I have, &c

CHARLES E. HOGG.

No. 16.

Assistant Engineer for Trial Surveys to Mr. Warren.

25 July, 1882.

I HAVE written to inform Mr. Walker that it will not be necessary to send another surveyor to complete

the small amount of work upon which he was engaged at the time of his unfortunate accident.

I have also informed him that his party must be paid off, with the exception of one man, if he should be sending any portion of his equipment to Sydney which would require a personal attendant.

I wish you to see to the paying off of his party, and to forward the necessary vouchers, if, as I suppose, Mr. Walker is unable to transact such business.

HERBERT PALMER.

No. 17.

Assistant Engineer for Trial Surveys to Mr. Walker.

25 July, 1882.

IT is with much regret that I have heard of the accident you have met with.

The work on which you were at the time engaged is not of sufficient importance to warrant another surveyor being sent to the district to complete it. Your party may therefore be paid off, and if you contemplate forwarding any of your equipment to Sydney which would require a personal attendant, one man may be emplosed until the things reach Sydney.

I have written to Mr. Warren to see after the paying off of your men, if his doing so will relieve

you of any trouble in the matter.

I hope you will speedily recover, and as soon as you are able you may report yourself at this office.

HERBERT PALMER.

No. 18.

Mr. Millner to Engineer-in-Chief.

Camp, Tabulam, 10 August, 1882.

REQUIRED for the use of the Grafton and Tenterfield Trial Survey:

20 feet plan-paper. 20 feet section-paper with datum line. 1 field-book.

W. J. MILLNER.

No. 19.

Mr. Millner to Engineer-in-Chief.

. Camp, Tabulam, 10 August, 1882. Under separate cover I have this day forwarded to you plan, section, field-book, and three level-books of the Byron Bay to Tenterfield Trial Survey. J. MILLNER.

No. 20.

Mr. Warren to Engineer-in-Chief.

21 August, 1882. I have the honor to bring under your notice the early completion of the survey on which I am at present, viz., the deviation via Mann River, suggested by me some months ago, in connection with a direct line from South Grafton to a point on the Great Northern Railway about 6 miles north of Glen

I hope to have the plan and section completed by the end of this month. By this deviation I have reduced the distance on the original trial survey by about 15 miles, which makes the line about 100 miles from South Grafton to junction with Great Northern Railway; three heavy bridges have also been avoided, and about 40 chains of tunnelling. The works on the deviation are necessarily heavy, but when it is being worked up for permanently staking it can be improved considerably. I have only got 14 chains of tunnel on it; the cuttings as a rule are short, will stand at \frac{1}{4} to 1, and the greatest portion of them will be run out to spoil at the ends of the cuttings, which will reduce the price of the earthwork considerably. The slope of the ground is too steep to allow of embankments standing, so that retaining walls will have to be largely used; these should not cost very much, as the stone used for them will come out of the cuttings alongside where they are required. I have considered the cost of the work carefully, and from my former experience in the construction of a line similar to this, I think I am within the mark when I put down the total cost per mile, from Grafton to junction with Great Northern Railway, at £12,500. Three-quarters of the whole distance, viz., about 75 miles, consists of very favourable country, which will bring down the price to the above figures. I shall forward plans and sections about the end of the month, and await your instructions as to my future movements.

HENRY B. WARREN.

No. 21.

Assistant Engineer for Trial Surveys to Mr. Warren.

On the completion of the trial survey on which you have lately been engaged of the amended route of portion of the South Grafton and Glen Innes line to a junction with the Northern Railway, near the crossing of the Beardy River, you may break up your party and return to this office to assist in the preparation of the approximate estimate of the cost of the line.

HERBERT PALMER.

No. 22.

Mr. Hogg to Engineer-in-Chief.

Sir,

Under a separate cover I have the honor to forward to you the second portion of the plan and section between Tabulam and Tenterfield. This portion completed to Sandy Creek. The remainder to Tenterfield will, I imagine, be finished about the third week in next month.

I have the honor to request that you will forward me a tracing of the trial plan and section lying between 100 and 105 miles by the diagram plan, but it is that portion from Barney Downs Creek back 5 miles. I enclose tracing of diagram.

CHARLES E. HOGG.

Plan and section received; tracing will be forwarded when ready.—H.P., 31/8/84.

No. 23.

Mr. Hogg to Engineer-in-Chief.

Sir,

I have the honor to request that I may be supplied with two level-books, also reference in have, &c.,

CHAS. E. HOGG.

No. 24.

Mr. Hogg to Engineer-in-Chief.

Sir,

Camp, 5 September, 1882.

The portion of the tracing of the survey between Laurence and Tenterfield sent to me last week is not the portion I require, as I have already obtained that, but what I want is a portion of the plan and section of the Northern line run between Sandy Creek and Tenterfield, lying between, so far as I can tell by the diagram mileages, 102 and 109, which runs along the Cataract River and crosses Black Snake Creek and Barney Downs Creek. I would like the bench marks put on, particularly B M 22, which is near the crossing of Barney Downs Creek.

This creek at this place is also spoken of as "The Cataract," "Carroll's Creek," "Spring Creek," so any of these may be on the section.

I have, &c.,

CHAS. E. HOGG.

No. 25.

Assistant Engineer for Trial Surveys to Mr. Millner.

While making the trial survey to connect original survey near Alice with Mr. Hogg's amended survey near Tabulam, if will be necessary to survey two routes—one to cross the Clarence at the most suitable point near Alice, thence via Yates' Flat and across the Timbarra River to the point you may fix upon as the best to join Mr. Hogg's survey; and the other route from near Alice, thence via the Longmile Range to Tabulam, and across the Clarence above its junction with the Timbarra, and thence to a junction with Mr. Hogg's survey.

HERBERT PALMER.

No. 26.

Assistant Engineer for Trial Surveys to Mr. Warren.

11 September, 1882.

SINCE my last instructions to you to return to Sydney on the completion of your present survey from South Grafton to a junction with the Northern Railway near the Beardy River, it has been decided that a trial survey is to be made from Trial Bay to Armidale, on which your services will be required. You may therefore forward, when completed, the plan and section of your present survey, and then remove your party to Armidale.

Report when you expect to be at Armidale, and I will forward instructions as to the new survey. You are to survey from the Northern Railway at Armidale to meet surveyors who will work towards Armidale from Trial Bay; and before commencing your length it will be necessary to examine the country to the east of Armidale to ascertain the best point from which to commence the descent to the coast district.

Commence the descent to HERBERT PALMER. the coast district.

No. 27.

Mr. Millner to Engineer-in-Chief.

Camp, Tabulam, 30 September, 1882. Sir, I have the honor to report progress made with the trial survey Grafton to Tenterfield, as

The trial line on the western side of the Clarence River has been staked from 6 to 12 miles, and levelled from 0 to 12 miles. The line on the eastern side of the river has been staked and levelled for a distance of 3 miles, being a total distance of 9 miles staked and 15 miles levelled.

There now remains about 20 miles to connect both trial lines with Mr. Hogg's trial survey.

W. J. MILLNER.

No. 28.

Assistant Engineer for Trial Surveys to Mr. Millner.

30 September, 1882. On the completion of the surveys upon which you are at present engaged, viz., the one from Alice, thence via Yates' Flats and across the Timbarra River, to a junction with Mr. Hogg's amended survey, and the alternative line via Tabulam and across the Clarence above the junction with the Timbarra to the junction with the amended survey made by Mr. Hogg, I shall require you to survey and level the original traverse made by Messrs. Walker and Warren from the point where you have started your present work near Alice and then back to North Grafton, as the plan, section, and field-books of that portion were destroyed in the late fire at the Garden Palace.

Forward the plans, sections, and books of your present work as early as practicable to this office, and report without delay when you expect to be able to start the survey and levels back to Grafton.

HERBERT PALMER.

No. 29.

Assistant Engineer for Trial Surveys to Mr. Hogg.

30 September, 1882.

On the completion of the trial survey upon which you are at present engaged to its junction with the Northern Railway at Tenterfield, it will be necessary for you to break up your party and return to this office. The plans and sections of that portion of the amended survey from near Tabulam to the Tableland

which you forwarded to this office were destroyed by the burning of the Garden Palace, and must consequently be re-plotted. I wish you therefore to return as early as practicable, and plot the plan and section of the whole length to Tenterfield, as you fortunately retained the field and level books.

HERBERT PALMER.

No. 30.

Mr. Warren to Engineer-in-Chief.

Sydney, 2 October, 1882. I have the honor to report the completion of the trial survey to junction with Great Northern Railway north of Glen Innes near crossing of Beardy River, but unfortunately all my plans, field notes, &c., were destroyed in the Garden Palace fire. I have got Mr. Walker's field and level books along with my camp equipment up in New England, so that a re-plot of that portion of the survey will only be I have, &c. necessary. HENRY B. WARREN.

No. 31.

Mr. Hogg to Engineer-in-Chief.

Sir, I have the honor to inform you that during the past month I have completed the survey of the section into Tenterfield and the plan, all but certain fences and farm boundaries, which I will do this week.

The plotting of the plan and section will be completed about the 15th of this month. The last 15 miles of this section is admirable, while I cross the main range at a point 110 feet lower than on the

Should my plans which I have forwarded have been burned, I have all the field-books relating to that portion from Tabulam to Tenterfield, and also a tracing of the section as forwarded to you.

I have, &c. CHAS. E. HOGG.

No. 32.

Telegram from Mr. Hogg to Assistant Engineer for Trial Surveys.

HAVE not field books Grafton to Alice, but section complete Tabulam, Tenterfield; plan also, except 20 miles. Could replot in a few days. Will not resurvey if first part be wanted. Yours received. Kindly wire reply. CHAS. E. HOGG.

No. 33.

Assistant Engineer for Trial Surveys to Mr. Hogg.

5 October, 1882. Your telegram dated the 3rd instant is not intelligible. Do you mean that you have a complete section of the line from North Grafton to Alice? If so, forward it to this office without delay.

On receipt of your answer I will inform you whether you are to take up any portion of the trial surveys near Grafton or to return to Sydney.

HERBERT PALMER.

No. 34.

Mr. Hogg to Engineer-in-Chief.

Railway Survey Camp, Tenterfield, 10 October, 1882. In reply to Mr. Palmer's communication of the 5th instant, I have the honor to inform you that my telegram must have been wrongly transmitted.

I have no plan, section, or any field-notes of the survey from Grafton to Alice, or any papers

The plan and section of the first 25 miles only of the survey from Tabulam to Tenterfield have

been forwarded, and burned, I imagine.

The remainder of the plan and section will be complete in a few days, but I have a tracing of the section between Tabulam and Tenterfield of the portion destroyed, and a few days plotting will restore the plan that has been destroyed. The weather being extremely wet, I am replotting that portion of the plan. I have, &c., CHAS. E. HOGG.

No. 35.

Assistant Engineer for Trial Surveys to Mr. Warren.

10 October, 1882.

THE Engineer-in-Chief has drawn my attention to your journal for last month, which is not by any means

I attach a copy, and require you to send in without delay an amended journal, stating particularly your own movements from the 11th of the month; also when and where you received instructions with reference to the Armidale and Trial Bay survey, when you reached Sydney, the date on which you left your plans at my office, and also the daily record of the travelling performed by your party from the time they left for Grafton till they reached Armidale.

HERBERT PALMER.

No. 36.

Assistant Engineer for Trial Surveys to Mr. Hogg.

You may forward to this office when completed the plan of amended survey from Tabulam to Tenter-field, including the 25 miles you have had to replot, also the tracing of section of the first 25 miles from Tabulam and the plotted section of the remaining distance to Tenterfield, taking care to give all cross-sections as shown on the original section, which has been destroyed, so that the earthwork quantities may be calculated correctly on the side-lying ground. When you have forwarded this information, you may proceed with your party to North Grafton and resurvey the trial line, as staked by Messrs. Walker and Warren, towards Alice, until you meet Mr. Millner, who has been instructed to work towards Grafton on completing his trial survey between Alice and Tabulam to a junction with your amended survey. When commencing your survey at North Grafton, you may start the line on the bank of the Clarence, near the saw-mill on the boundary of the township, and you must be careful to connect this survey with a sufficient number of street corners to allow of the plan of the town of Grafton being transferred on the plan of trial survey. transferred on the plan of trial survey.

HERBERT PALMER.

No. 37.

Mr. Millner to Engineer-in-Chief.

Camp, Tabulam, 14 October, 1882. Sir, In reply to memo. No. 82-354, I expect to complete surveys to a junction with Mr. Hogg's amended survey and to be able to start the survey and levels back to North Grafton in six weeks from I have, &c., W. J. MILLNER.

No. 38.

Mr. Harwood to Assistant Engineer for Trial Surveys.

Camp, near Grafton, 24 October, 1882. I beg to inform you that I shall be shifting camp on Monday next, when the nearest post-office Sir. will be at Copmanhurst. I am, &c., HAMILTON HARWOOD.

No. 39.

Mr. Stuart to Assistant Engineer for Trial Surveys.

Camp, South Grafton, 24 October, 1882. Dear Sir, As I shall have completed as far as I conveniently can from our present camp by Friday next I intend moving my camp to the banks of the Orara River on Saturday, when the nearest post town will be Copmanhurst.

Yours faithfully, .be Copmanhurst. CHAS. McD. STUART.

No. 40.

Mr. Hogg to Engineer-in-Chief.

31 October, 1882. Sir. I have the honor to report that during the past month I completed the survey of this line between Tabulam and Tenterfield, and also the plotting and referencing of the latter portion of this

I have, in accordance with instructions, begun the replot of that portion of the survey destroyed by fire

I have dispatched my camp to North Grafton.

I expect to complete the replot in about a week or ten days, when I will at once proceed myself to my camp and begin the resurvey as directed from North Grafton.

CHAS. E. HOGG.

No. 41.

Mr. Warren to Engineer-in-Chief.

Glen Innes towards Grafton.

Camp, 1 November, 1882. Sir, I have the honor to report progress of resurvey of the above line, as follows:—9 miles have been levelled and surveyed during the month.

It has been unusually wet, and a great deal of time lost through it.

Yours, &c. H. B. WARREN.

No. 42.

Mr. Millner to Engineer-in-Chief.

Camp, Tabulam, 1 November, 1882. Sir, I have the honor to report progress made with the trial survey Grafton to Tenterfield, as follows

The centre line on the eastern side of the Clarence River has been staked and levelled from 6 to 10 miles, and the line on the western side of the river has been staked and levelled from 12 miles to its junction with Mr. Hogg's amended survey at 18 miles 13 chains, being a total distance of 10 miles 13 chains staked and levelled

There now remains about 10 miles to complete the line on the eastern side of the river, to its junc-I have, &c. tion with Mr. Hogg's amended survey.

No. 43.

Mr. Stuart to Engineer-in-Chief.

Camp, Copmanhurst, 1 November, 1882. Sir. I have the honor to report progress made with trial survey from South Grafton to Glen Innes,

The centre line has been traversed and surveyed from 4 miles 40 chains from South Grafton, my starting point, to 9 miles 20 chains, a distance of 4 miles 60 chains, comprising the part of the line from the end of the Lagoon to within $2\frac{1}{2}$ miles of where it crosses the Orara River.

This part of the line is through open undulating forest land, and presents no engineering difficulties. I am, &c., C. McD. STUART.

No. 44

MILLNER.

No. 44.

Mr. Harwood to Engineer-in-Chief.

Sir. Camp, South Grafton, 1 November, 1882. I have the honor to report that $4\frac{1}{2}$ miles of the old trial line from South Grafton to Glen Innes, commencing at a point near the Clarence River at Bent-street, has been resurveyed and levelled.

Although most of the pegs near the town had disappeared, I believe the line as surveyed by me I am, &c., HAMILTON HARWOOD. deviates but slightly from the original one.

No. 45.

Mr. Warren to Engineer-in-Chief.

Sir. Camp, via Glen Innes, 8 November, 1882. I beg to apply for plan paper with centre line, for the purpose of plotting the trial survey on which I am at present engaged. I have, &c. HENRY B. WARREN.

No. 46.

Mr. Stuart to Engineer-in-Chief.

Ry. Survey Camp, Orara River, Copmanhurst, 20 November, 1882. I beg to inform you I hope to move my camp on Monday next, the 27th instant, to the head of Purgatory Creek, 5 miles from the Mitchell River, and about 28 miles from South Grafton. My address will be the Post Office, Copmanhurst. CHAS. McD. STUART.

No. 47.

Mr. Harwood to Engineer-in-Chief.

Sir,

Camp, near Copmanhurst, Clarence River, 25 November, 1882.

I have the honor to inform you that I shall most probably shift my camp on Monday week next, the 4th proximo, to the Mitchell River, the nearest post-office to which will be at Copmanhurst. I am, &c., HAMILTON HARWOOD.

No. 48.

Mr. Harwood to Engineer-in-Chief.

Sir, Copmanhurst, Clarence River, 30 November, 1882. I have the honor to report progress made with the re-survey of the trial line from South Grafton towards Glen Innes, as follows:

The line has been traversed and levelled from a point 15 miles 4 chains 88 links from Grafton to 24 miles 8 chains.

With the exception of about 60 chains, where the pegs had disappeared, there has been no deviation from the former survey. I am, &c HAMILTON HARWOOD.

No. 49.

Mr. Hogg to Engineer-in-Chief.

Sir. Camp, Grafton, 1 December, 1882. I have the honor to request that one field-book, four level-books, and 30 feet of plan and section paper, and also tracing paper, may be forwarded to me.

> I have, &c. CHAS. E. HOGG.

No. 50.

Mr. Millner to Engineer-in-Chief.

Camp, Yugilbar, via Grafton, 1 December, 1882. REQUIRED for the use of the Grafton and Tenterfield trial line (resurvey):—one field-book, 30 feet plan paper, 30 feet section paper with base line.

W. J. MILLNER.

No. 51.

Mr. Hogg to Engineer-in-Chief.

Sir, 1 December, 1882. I have the honor to inform you that during the past month I have completed the replot of the plan and sections forwarded to you on the 25th ultimo.

On the 20th of this month I began the re-survey of Mr. Walker's line.

I find that, with regard to a station site, there is a railway reserve next to Nipper & See's wharf, with deep water frontage, admirably adapted for the purpose.

It is on section 2 facing Victoria-street, and comprises blocks 6, 7, 8, while blocks 1, 2, 3, 4, 5, could be cheaply resumed, as the buildings on them would not be worth more than £200 in all.

I am aware that when I was here with Mr. Palmer he was not conscious that there was any such reserve, as the plan we had did not show it.

I have taken levels over this No. 2 section, and find that all parts of it are from 2 to 4 feet above the great flood of 1876. I have therefore thought it my duty to connect the survey with this block, in addition to that mentioned by Mr. Palmer, as I have no doubt he would have given me forders to do so had he been aware of the facts.

The approach to this section 2 is also satisfactory, as it comprises some of the highest land in Grafton, running through sections 12, 20, 34, 50, 65, 78, 93, 104, 119, and 126. I am taking careful levels along these blocks so that the flood of 1876 can be clearly marked on the plan. With the exception of the Public School playground, section 50, this line would pass through no ground of any importance or I have, &c. great value.

CHARLES E. HOGG.

No. 52.

Mr. Millner to Engineer-in-Chief.

Camp, via Grafton, 1 December, 1882.

I have the honor to report progress made with the trial survey Grafton to Tenterfield, as Sir follows

The trial line on the eastern side of the river Clarence has been staked and levelled from 9 to 161

miles, its junction with the trial line on the western side of the river.

The earthworks on the trial line on the eastern side of the river at Corabubla Range, near Tabulam, were of such a heavy nature that I abandoned that portion of the line, and crossed the river Clarence at Pagan's Flat, and thence the Timbarra Range, about a mile above its junction with the Clarence River.

The trial line on the eastern side of the Clarence River is 13 chains longer than the line on the western side, but the earthworks along the line on the eastern side of the river will be of a much lighter

I expect to complete plans in about ten days, and take up the resurvey of the line back to Grafton.

I have, &c., W. J. MILLNER.

No. 53.

Mr. Stuart to Engineer-in-Chief.

Camp, Purgatory Creek, Copmanhurst, 1 December, 1882. Sir, I have the honor to report progress made with the trial survey from South Grafton to Glen Innes, as follows:

The centre line has been surveyed and levelled from 9 miles 20 chains from South Grafton to

15 miles 10 chains, crossing the Orara River almost half a mile south of the Clarence River.

This part of the line presents no engineering difficulties, with the exception of about a mile where it runs along a rough, rocky siding of the Clarence River, about half a mile after crossing the Orara.

C. McD. STUART.

No. 54.

Mr. Warren to Engineer-in-Chief.

Camp, Glen Innes, 2 December, 1882.

I have the honor to report progress of trial survey from Glen Innes towards Grafton, as follows:-13 miles 14 chains has been completed, and I will forward the level-book in the course of a few days; there remains about 5 miles 40 chains to complete the survey to the foot of the range. I have just received the remainder of my camp effects from Armidale, and find that I have got the level and field-books belonging to Mr. Walker's length, which I will forward with my own level-book; 25 miles will be completed (including 6 miles done by Mr. Walker) at the end of the year.

The weather has been very much against the progress of the work during the month, which, together

with the rough country, accounts for the small amount of work done

HENRY B. WARREN.

No. 55.

Mr. Warren to Engineer-in-Chief.

Camp, via Glen Innes, 9 December, 1882.

I have the honor to forward by this post under separate cover Mr. Walker's level and field books of the portion of the amended survey via the Mann River on which he was engaged, also my levels from junction of Great Northern Railway to a point 13 miles 43 chains 57 therefrom. There is a gap between this point and the commencement of Mr. Walker's length of about 5 miles 40 chains, which I hope to complete by the end of the year, weather permitting. HÉNŔY B. WARREN.

No. 56.

Mr. Harwood to Engineer-in-Chief.

Camp, Mitchell River, 22 December, 1882. Sir. I have the honor to inform you that I shall be shifting camp about the 4th of January to a place about 8 miles further up the river. I believe there is an official tracing of the plan of this part of the old trial survey (South Grafton to

Glen Innes).

I am, &c. HAMILTON HARWOOD.

No. 57.

Assistant Engineer for Trial Surveys to Mr. Harwood.

10 January, 1883.

ATTACHED are tracings of the only portion of plan and section of original trial survey, South Grafton to Glen Innes, that were not destroyed in the Garden Palace fire.

Yout letters for the future must be more explicit.

Your last, dated the 22nd ultimo, merely gives as address "Survey Camp, Mitchell River," and you state that you are about to shift your camp about 8 miles further up the river, from which very scant information it is impossible to judge on what part of the river you were then camped, or to what point you were about to shift your camp.

HERBERT PALMER.

No. 58.

Mr. Warren to Engineer-in-Chief.

24 December, 1882.

Memo.—I have the honor to report, for the information of the Engineer-in-Chief, that the re-survey of my original length to the foot of the Big Hill, from Great Northern Railway, will be completed at the end of the month. As I am not aware of the movements of the two surveyors between Grafton and foot of Hill, I would beg to be informed if my services will be required on the lower length.

HENRY B. WARREN.

No. 59.

Assistant Engineer for Trial Surveys to Mr. Warren.

27 December, 1882.

You may continue the re-survey of the original Grafton and Glen Innes trial survey on completing your present length until you meet the surveyors who are working from South Grafton.

I will send to you in a few days tracing, showing a portion of the original trial survey which will

not require a re-survey.

HERBERT PALMER.

No. 60.

Mr. Harwood to Engineer-in-Chief.

Sir,

Camp, Mitchell River, 30 December, 1882.

I have the honor to inform you that since my last report, M. 5, C. 6-92 (from 33 m. 46 40c. to 38 m. 52 96 c.) of the old trial line, South Grafton to Glen Innes, has been re-surveyed and levelled.

I am, &c.,

H. T. HARWOOD

No. 61.

. Mr. Stuart to Engineer-in-Chief.

Sir, Camp, Copmanhurst, 1 January, 1883.

I have the honor to report progress made with trial survey from South Grafton to Glen Innes,

The traverse of old centre line has been checked and levelled from 24 miles 8 chains from South Grafton to 33 miles 15 chains, comprising the part of the line which runs from Main Creek, Ramornie, to the Mitchell River.

This part of the line runs through rough undulating country, parallel to the courses of the Purgatory and Jackadgery Creeks, and will necessitate the construction of a short tunnel through the range of hills which divides their watersheds, as well as a bridge 16 chains wide across the Mitchell River, to allow for flood-level.

I am, &c.,

C. McD. STUART.

No. 62.

Mr. Hogg to Engineer-in-Chief.

Sir,

I have the honor to report that during the past month I have completed the survey of that portion of Grafton through which the proposed line passes, and also re-traversed and levelled to a distance of 10 miles out of town.

I expect to complete the re-survey to the top of the Cole Dale Range about two months hence, when I expect to meet Mr. Millner, who is working towards me.

I have, &c., CHAS. E. HOGG.

No. 63.

Mr. Warren to Engineer-in-Chief.

Sir,

I have the honor to report progress of trial survey from Glen Innes towards Grafton as follows:—The re-survey of my original length is completed, which, together with Mr. Walker's length (the field notes of which I forwarded to you some time ago) makes a distance of 25 miles 25 35½ chains from Great Northern Railway. I am now shifting my camp to the foot of the Big Hill.

I have, &c.,

HENRY B. WARREN.

No. 64.

No. 64.

Mr. Millner to Engineer-in-Chief.

Sir, Camp, via Grafton, 2 January, 1883. I have the honor to report progress made with the re-survey of the trial line Grafton to Tenterfield, as follows:—The centre line has been traversed and levelled for a distance of 10 miles. expect to complete the field work and junction with Mr. Hogg by the end of the present month. I have, &c., W. J. MILLNER.

No. 65.

Assistant Engineer for Trial Surveys to Mr. Warren.

2 January, 1883 ATTACHED is a tracing showing a portion of plan and section of original trial survey, Grafton to Glen Innes, which it will not be necessary to re-survey, but through which you may take such cross levels as may be required to allow of the earth-work quantities being taken out with approximate correctness, noting in all cases to what height the flood-level extends up the sloping ground. There is a length of 19 miles to be re-surveyed from 68 miles (red) on plan forwarded to you to 49 miles on a tracing I have sent to Mr. Stuart, so you may continue the re-survey of this work until you meet him.

HERBERT PALMER.

No. 66.

Mr. Warren to Engineer-in-Chief.

Sir, Glen Innes, 2 January, 1883. I have the honor to report the completion of the survey on which I have been engaged from the junction with Great Northern Railway to commencement of tracing of original survey forwarded to me some time ago. The plan of the original survey made by me between Mr. Walker's length and Glen Innes is also completed, and only requires writing on cross-section levels, which can be done in the office from my level book. I had not sufficient paper to complete the plotting of the length between the end of Mr. Walker's survey and beginning of tracing, but the field books are in such a form that any one can plot this length of 4 miles—the river can be sketched in from notes made in my level book, showing the distance it is off the line at different points. I have, &c., HENRY B. WARREN.

No. 67.

Assistant Engineer for Trial Surveys to Mr. Stuart.

ATTACHED is a tracing of plan and section of that portion of the original trial survey of the Grafton and Glen Innes line which was I believe marked from C to D on the county map supplied to you.

You will observe that the centre line was omitted to be traced from the original plan between 47 and 48 miles (in red), and this part it.

and 48 miles (in red), and this portion will consequently have to be re-surveyed.

You must also take what cross-levels may be required on this length to enable the quantity to be taken out, with approximate correctness where the ground is sidelying, in all cases noting the height to which the flood-level extends.

HERBERT PALMER.

From the end of the plan forwarded to you, 49 ms. (red) there is a gap of 19 miles, viz., to 68 ms. (red), which must be re-surveyed. The only other portions of plan and section of which I have any tracing are from 68 ms. (red) to 73 miles, and these I have forwarded to Mr. Warren, who is working from the Northern Railway to meet you. H.P.

No. 68.

Mr. Stuart to Assistant Engineer for Trial Surveys.

Dear Sir,

I forward by this mail the ordnance plan showing the portion of the line from C to D between this and Newton-Boyd, as this part is between my camp and Mr. Harwood's. If you could let him have the tracing of it and return plan at same time I would be greatly obliged. His address will be, Railway Survey Camp. Mitchell River. Newton Boyd, whose we have made arrangements to have all letters. Survey Camp, Mitchell River, Newton-Boyd, where we have made arrangements to have all letters forwarded. Hoping you will excuse my delay in sending this plan, owing to floods in the river,—

C. McD. STUART.

Tracings were forwarded to Mr. Harwood on the 10th instant. County map returned to Mr. Stuart.—H.P., 24/1/83.

No. 69.

Assistant Engineer for Trial Surveys to Mr. Millner.

20 January, 1883. Notwithstanding you have received the strictest instructions that your journals are to give the fullest details, your entries in last month's journal are most unsatisfactory

Four days, 6th to 9th inclusive, entered as shifting camp, Tabulam to Tongilbar, no distances given for either day's travelling; and again 28th to 30th, three days entered as shifting camp, without the slightest reference as to distances travelled or the place to which your camp was removed.

No field or office work has been entered from the 22nd to 31st inclusive.

You will be good enough to forward a statement as to your daily occupation during this term (exclusive of the holidays), and if absent from your district, the time at which you left and returned.

HERBERT PALMER.

No. 70.

Mr. Stuart to Engineer-in-Chief.

Camp, Mitchell River, 31 January, 1883. Sir. I have the honor to report progress made with the trial survey from South Grafton to Glen Innes, as follows:

The centre line has been traversed and levelled from 38 miles 53 chains from South Grafton to 44 miles 20 chains, comprising the part of the line from half a mile on the Glen Innes side of the junction of the Mitchell and Nymboi Rivers to 44 miles 20 chains.

About 2 miles of this is through rocky side-lying country, which will have to be principally in

cutting, and require a large number of culverts and pipes.

I might mention that the progress of the work this month has been greatly retarded by the wetness I have, &c., C. McD. STUART. of the weather.

No. 71.

Mr. Hogg to Engineer-in-Chief.

Sir, Grafton, 31 January, 1883. I have the honor to report that during the past month I have completed the re-survey of the line (Grafton and Tenterfield) to Coaldale, at 22 miles 30 chains.

The weather during the past month has been of such a nature as to make work impossible for some

I could not even attempt to plot, as the rain beat in torrents through everywhere.

I will complete the re-survey in about a week, and the plans and sections in another week; but as I am going to improve the line crossing the Coaldale Range in a manner agreed upon by Mr. Palmer when here (the present section being altogether misleading), I will not have completed until the end of February.

I should strongly suggest that the section I have been taking should in parts be altered, as you can

form but a very slight opinion of the cost of the line by the section taken on the old survey, as the improvements to be made are of so substantial a nature as to quite alter (in parts) the nature of the section.

The suggested improvements would occupy three or four weeks, and are well worth considering.

I have, &c., CHAS. E. HOGG.

No. 72.

Mr. Harwood to Engineer-in-Chief.

Mitchell River, 1 February, 1883. Sir. I have the honor to report that, owing to the heavy rains at the beginning of January, I was not able to get my camp shifted and start work on the new length before the 15th, since which date 2 miles 42 chains (west of Wallamogo Creek) have been traversed and levelled, and 30 chains east of it traversed. I am, &c.,

HAMILTON HARWOOD.

No. 73.

Mr. Millner to Engineer-in-Chief.

Camp, via Grafton, 1 February, 1883. Sir, I have the honor to report progress made with the re-survey of trial line from Grafton to

The centre line has been traversed and levelled from 10 to 264 miles, where I junction with Mr.

Hogg's work from Grafton.

The plans are well in hand, and will be completed in about a week.

The line can be considerably improved at the Yellow Gap, Ogilvie's Gap, and the Coaldale Range. At present there is a tunnel in mile through the Coaldale Range, which can be quite got rid of by working up the sides of the ridge to the Gap, with a grade of 1 in 40, without affecting the length of I have, &c. the line.

J. MILLNER.

No. 74.

Mr. Millner to Engineer-in-Chief.

Telegram from Grafton, 9 February, 1883.

SURVEY completed. I proceed with the Richmond and Tabulam line.

W. J. MILLNER.

Replied,-"Break up your party and return to Sydney with plans."-H.P., 9/2/83,

No. 75.

Mr. Stuart to Engineer-in-Chief.

Camp, Mitchell River, Newton-Boyd, 1 March, 1883. I have the honor to forward pay-sheets, &c., for February, and to state that I was unavoidably delayed in the progress of my work owing to the state of the river, which prevented me shifting camp for a considerable time. I am now within 5 miles of Newton-Boyd, and Mr. Harwood and I expect to get the whole line completed up to where Mr. Warren left off about the middle of April.

C. McD. STUART.

I think Messrs. Harwood and Stuart should be instructed to return to Sydney on the completion of this survey, to work up the plan and section of the line throughout from South Grafton to the junction with the Northern line near Glen Innes.—H.P., 9/3/83.

No. 76.

Assistant Engineer for Trial Surveys to Mr. Harwood.

12 March, 1883. On the completion of the whole of the field work of the re-survey of original trial survey from South Grafton to the point at which Mr. Warren completed his survey from the Northern Railway, you may break up your party and return to this office, to work up the plan and section of the through route from South Outforte the Northern Railway. from South Grafton to the Northern Railway near Glen Innes.

HERBERT PALMER.

No. 77.

Assistant Engineer for Trial Surveys to Mr. Stuart.

On the completion of the whole of the field work of the re-survey of original trial survey from South Grafton to the point at which Mr. Warren completed his survey from the Northern Railway, you may break up your party and return to this office, to work up the plan and section of the through route from South Grafton to the Northern Railway near Glen Innes.

HERBERT-PALMER.

No. 78.

Mr. Stuart to Engineer-in-Chief.

Sir Camp, Newton-Boyd, 1 March, 1883. I have the honor to report progress made with the trial survey from South Grafton to Glen Innes, as follows

I have taken cross-levels from 38 miles 53 chains from South Grafton to 44 miles 20 chains, being the portion I traversed and levelled last month.

I have now shifted my camp to within 5 miles of Newton-Boyd, and marked out and blazed line from 55 miles from South Grafton to 59 miles 40 chains, and have commenced traversing and surveying This latter portion presents no serious engineering difficulties.

I have, &c., C. McD. STUART.

No. 79.

Mr. Harwood to Engineer-in-Chief.

Sir, Mitchell River, 1 March, 1883. I have the honor to report progress made with the re-survey of the trial line from South Grafton to Glen Innes, as follows:—The centre line has been traversed from 50 miles 21 chains to 55 miles 49 chains, and levelled from 50 miles 21 chains to 53 miles 51 chains, rough cross-sections being also taken along the latter length. HAMILTON J. HARWOOD.

No. 80.

Mr. Millner to Engineer-in-Chief.

Sir Railway Department, 1 March, 1883. I have the honor to report having completed the re-survey of the Grafton and Tenterfield trial survey, and that I have returned to Sydney, as instructed.

I have, &c., W. J. MILLNER.

No. 81.

Mr. Hogg to Engineer-in-Chief.

Sir. Tabulam, 1 March, 1883. I have the honor to inform you that I have completed the re-survey of the Grafton and Tenterfield line. I have almost completed the plan and section thereof.

I had previously reported that I was unable to do so in camp, as my camp was nothing but a bed of mud, and the insects prevented me doing anything. I therefore thought that I could save the

Department

Department much time by doing my plotting whilst my camp was being shifted to Tabulam, and so came on to Tenterfield to do so. I then fell ill and have forwarded a certificate to that effect.

I will in a few days forward to you a report on the proposed extension from Tabulam to Casino.

I am, &c.

CHAS. E. HOGG.

No. 82.

Mr. Harwood to Engineer-in-Chief.

Sir, Camp, Mitchell River, 1 March, 1883. I have the honor to inform you that I expect to be shifting my camp to near the junction of the Henry and Mitchell Rivers in about ten days time. As this will take me to within 7 miles of the beginning of Mr. Warren's line (which is, I believe, 68 miles from S. Grafton red mileage on official tracing), it will be my last camp on the length Mr. Stuart and I are surveying.

HAMILTON HARWOOD.

No. 83.

Mr. Hogg to Engineer-in-Chief.

Sir, Tabulam, 9 March, 1883. I have the honor to inform you I have examined as much of the country lying between

Tabulam and Casino as I think necessary.

I do not imagine there will be any difficulty in reaching the Richmond Range from the Clarence Valley, but such will not be the case from the Richmond River side, as the valley of the Richmond lies some 400 feet lower than Tabulam; but I saw a large number of spurs falling from the range to the Richmond, one of which I mean to make use of, but the scrub was so extremely dense that it was quite impossible to come to any definite conclusion without a protracted survey of the country, which will be carried out in due time, but could not be done by merely riding over the line.

Mr. Chauvel, I am aware, forwarded a sketch of the proposed route, and I see no reason why it

should be greatly departed from.

The survey will leave the Grafton and Tenterfield survey near Lilie's Creek, at a station numbered 40 on the ground, and proceed in the direction indicated by the sketch referred to. It will not go near Busby's Flat, keeping some 8 miles to the northward. The survey will be about 33 miles in length, though I cannot give this distance with any great confidence, on account of the scrub.

I would like to be supplied with the county maps from Tabulam to Casino or some tracing of the

country, as at present I have nothing to help me. Also a tracing of Mr. Millner's plan and section about St. 40, which lies some miles south of the Clarence River crossing. I consider, on the whole, that the survey will prove successful, as I do not think the Richmond Range a very formidable obstacle.

l have, &c., CHAS. E. HOGG.

Seen. County maps and tracing of Millner's plan and section forwarded to Mr. Hogg .- H.P., 20/3/83.

No. 84.

Mr. Stuart to Assistant Engineer for Trial Surveys.

Sir. Camp, Mitchell River, 10 March, 1883. I would be much obliged if you would send me 8 feet more of section paper, to complete the work here.

Mr. Harwood and I expect to be finished, if this weather lasts, about the 10th of April. We have the office copy of the plan and section of first 30 miles completed, and are getting on with the next 30. Shall I forward first part to Sydney now?

Your obedient servant,

CHAS. M'D. STUART.

No. 85.

Assistant Engineer for Trial Surveys to Mr. Stuart.

Mr. Stuart. 15 March, 1883. Under separate cover I have forwarded to you the section paper you will require for the remainder of the South Grafton and Glen Innes section.

You need not send in the first part of plan and section at present, but may bring everything down together on the completion of the survey.

HERBERT PALMER.

No. 86.

Mr. Harwood to Engineer-in-Chief.

Sir, Mitchell River, 31 March, 1883. I have the honor to report progress made with the re-survey of the South Grafton to Glen Innes line, as follows:

The remaining work on length ending 55 miles 60 chains 16 links has been completed, and a new length, from 63 miles 52 chains 71 links to 68 miles 16 chains 69 links, surveyed and levelled.

From this point (68 miles 16 chains 69 links) there is an official tracing of both plan and section to 73 miles, where Mr. Warren's survey from Glen Innes ends.

I am, &c. HAMILTON HARWOOD.

1095-C

No. 87.

No. 87.

Mr. Harwood to Engineer-in-Chief.

Sir,

I write to inform you that I shall be breaking up my survey party in a few days, when, with the exception of James Wilson, who was engaged in Sydney, all the men will be paid off by private cheques.

The men's wages voucher will not require to be returned to me.

I am, &c., HAMILTON HARWOOD.

No. 88.

Mr. Stuart to Engineer-in-Chief.

Sir,

Mitchell River, Newton-Boyd, 1 April, 1883.

I have the honor to report progress made with the trial survey from South Grafton to Glen

Innes as follows:—

The centre line has been traversed and levelled from 55 miles 50 chains from South Grafton to 63 miles 52 chains, comprising the part of the line from 4 miles beyond Cooraldooral old station, to 1 mile beyond the junction of the Mitchell and Henry Rivers, opposite Newton-Boyd.

The first 2 miles of this part runs over very rough rocky side-lying ground, in some places with an almost precipitous face. After this, for the next 6 miles, there are no engineering difficulties, a good deal of the line running through ring-barked country.

I have, &c.,

C. McD. STUART.

No. 89.

The Assistant Engineer for Trial Surveys to Mr. Hogg.

3 April, 1883.

PLEASE forward to this office without delay the plan, section, books, &c., connected with the re-survey made by you, North Grafton towards Tabulam.

HERBERT PALMER.

No. 90.

Mr. Hogg to Engineer-in-Chief.

Sir,

Railway Camp, near Tabulam, 8 April, 1883.

Under separate cover I have the honor to forward the plan and section of a portion of the resurvey of the line between Grafton and Tenterfield.

I have marked in pencil several places where the

line can be very greatly improved and shortened.

I regret that by some mischance I have lost about 3 miles of the angles taken on the traverse. This accounts for the delay in forwarding the plan, as I sent to Grafton to see if I had left the slip of paper on which they were written there. But the line is fairly straight for that portion, and as the angles would hardly take a day to take over again, I can very easily retake them as I go to Grafton on my way to Sydney, when this survey I am now on shall be completed, should this be deemed absolutely necessary.

I have not written in the mileage, as I do not know whether you would start from near Nipper &

See's Wharf or Salmon's Timber-yard.

I have not written in the inleage, as I do not know whether you would start the most representation.

I have, &c.,

CHAS. E. HOGG

No. 91,

Mr. Stuart to Engineer-in-Chief.

Sir,

Railway Survey Department, Pitt-street, 30 April, 1883.

I have the honor to report the trial survey from South Grafton to Glen Innes as completed.

I have, &c.,

C. McD. STUART.

Sydney: Thomas Richards, Government Printer.—1884.

[1s. 3d.]

LEGISLATIVE ASSEMBLY. NEW SOUTH WALES.

RAILWAY BETWEEN ARMIDALE AND TRIAL BAY.

(TRIAL SURVEYS.)

Ordered by the Legislative Assembly to be printed, 31 July, 1884.

RETURN to an *Order* of the Legislative Assembly of New South Wales, dated 22nd April, 1884, That there be laid upon the Table of this House,—

- "Copies of all instructions to and reports of the Surveyors employed at each end "of the Trial Railway Survey of the Armidale and Trial Bay proposed line, together
- "with copies of all plans and sections made and taken by them; also copies of all
- "minutes and reports of the Engineer-in-Chief for Railways relating to the same."

(Mr. R. B. Smith.)

SCHEDULE of Reports and Letters relating to Exploration and Trial Survey from Armidale to Trial Bay, in continuation of Return ordered by the Legislative Assembly to be printed, 2 May, 1883 (No. 434).

	Date and No.	From—to.	Subject.
1 2 3 4 4 5 5 6 6 7 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 4	1 Dec., /82 1 Dec., /82 1 Jan., /83 1 Jan., /83 25 Jan., /83.—83/401 23 Jan., /83.—83/402 1 Feb., /83 15 Feb., /83 15 Feb., /83.—83/736 24 Feb., /83.—83/870 24 Feb., /83.—83/871 1 Mar., /83 1 Mar., /83 1 April, /83 1 April, /83 1 April, /83 1 June, /83. 1 June, /83. 1 June, /83. 1 June, /83. 30 June, /83.—83/2,775 30 June, /83.—83/2,775	Mr. Waddington to Engineer-in-Chief Mr. Turner to Engineer-in-Chief Mr. Waddington to Engineer-in-Chief Mr. Turner to Engineer-in-Chief Same to same Same to same Mr. Waddington to Engineer-in-Chief Mr. Turner to Engineer-in-Chief Same to same Mr. Waddington to Engineer-in-Chief Same to same Mr. Waddington to Engineer-in-Chief Mr. Waddington to Engineer-in-Chief Mr. Waddington to Engineer-in-Chief Mr. Waddington to Engineer-in-Chief	Monthly progress report. Monthly progress report. Monthly progress report. Progress report, and description of route. Report. Monthly progress report. Monthly progress report. Report. Report. Report. Report. Report. Report. Report. Report. Monthly progress made. Requisition for plan, &c. Monthly progress report. Monthly progress report. Monthly progress report. Monthly progress report. Exploration completed; description forwarded. Monthly progress report. Monthly progress report. Monthly progress report. Monthly progress report. Monthly progress report. Monthly progress report. Tonthly progress report. Monthly progress report. Monthly progress report. Monthly progress report. Monthly progress report. Trial survey to Inverell nearly finished, also Mr. Palmer's advice to send Mr. Stuart to Armi-
24 25 26 27	12 July, /83 12 July, /83 1 July, /83 5 July, /83.—83/2,759	Assistant Engineer for Trial Surveys to Mr. Stuart Same to Mr. Harwood	dale. Instructions re trial survey. Instructions re trial survey. Monhtly progress report. Asking for information re trial survey, and
28 29 30 31	11 July, /83	Chief Clerk to Mr. R. B. Smith, M.P. Mr. Proctor, M.P., to Chief Clerk Chief Clerk to Mr. Proctor, M.P. Assistant Engineer for Trial Surveys to Messrs. Harwood and Stuart.	enclosing telegram. Information supplied re trial survey. Asking for information re trial survey. Information supplied re trial survey. Instructions re trial survey, and forwarding
32 33 34	1 Aug., /83	Mr. Waddington to Engineer-in-Chief	plans, &c. Monthly progress report. Forwarding plan and section, &c. Instructions re trial survey.

	Date and No.	From—to.	Subject.
35	14 Aug., /83	Same to Mr. Stuart	Instructions re trial survey.
36	14 Aug., /83	Same to Mr. Harwood	Instructions re trial survey.
37	14 Aug., /83	Same to same	Instructions re trial survey.
38	13 Aug., /83.—83/3,324	Minister for Works to Engineer-in-Chief	Asking for information re trial survey.
39	16 Aug., /83	Under Secretary to Mr. R. B. Smith	Progress of survey, &c.
40	20 Aug., /83.—83/3,483	Mr. Harwood to Engineer-in-Chief	Particulars of interview with Mr. Crossman.
41	1 Sept., /83	Mr. Waddington to Engineer-in-Chief	Monthly progress report.
42	1 Sept., /83	Mr. Harwood to Engineer-in-Chief	Monthly progress report.
43	1 Sept., /83.—83/3,659	Mr. Waddington to Engineer-in-Chief	Asking instructions.
		Assistant Engineer for Trial Surveys to Mr. Waddington	Requesting tracings.
44` 45	5 Sept., /83	Enclosure from Mr. R. B. Smith, M.P., to Minister for	Letterfrom Mr. Panton, and resolutions of the
40	20 Sept., /83.—83/3,863	Works.	Macleay River Land League,
40	0.0-4 /02	Under Secretary to Mr. R. B. Smith, M.P.	Re adoption of route.
46	2 Oct., /83 1 Oct., /83	Mr. Waddington to Engineer-in-Chief	Monthly progress report.
47	1 006., /00	Mr. Harwood to Engineer-in-Chief	Monthly progress report.
48	1 Oct., /83 1 Nóv., /83	Mr. Waddington to Engineer-in-Chief	Monthly progress report.
49	1 NOV., /00	Mr. Harwood to Engineer-in-Chief	Monthly progress report.
50	1 Nov., /83	Same to same	Monthly progress report.
51	30 Nov., /83	Mr. Waddington to Engineer in Chief	Monthly progress report.
52	1 Dec., /83	Mr. Waddington to Engineer-in-Chief Same to same	Monthly progress report.
53	1 Jan., /84	Mr. Harwood to Engineer-in-Chief	Monthly progress report.
54 .	1 Jan., /84	Same to same	Reporting on examination of country; no prac-
55	10 Jan., /84.—84/202	Dame to same	ticable route.
-0	IF T /04	Assistant Engineer for Triel Surveys to Mr. Harwood	Instructions re trial survey.
56	15 Jan., /84	Assistant Engineer for Trial Surveys to Mr. Harwood Same to Mr. Waddington	Instructions re trial survey, &c.
57	17 Jan., /84	Mr. Dangar to Mr. R. B. Smith, M.P.	Remonstrance against abandoning survey.
58	22 Jan., /84.—84/515	Under Secretary to Mr. R. B. Smith, M.P.	Particulars of survey, &c.
59	11 Feb., /84	Mr. Harwood to Engineer-in-Chief	Cannot find a practicable route.
60	31 Jan., /84. —84/559	Engineer-in-Chief to Minister for Works	Reasons for discontinuance of trial survey.
61	11 Feb., /84	Under Secretary to Mr. R. B. Smith, M.P.	Enclosing copy of minute.
62	18 Feb., /84	Mr. Waddington to Engineer-in-Chief	Monthly progress report.
63	1 Feb., /84	Assistant Engineer for Trial Surveys to Mr. Harwood	Instructions re trial survey.
64	δ reo., /δ4	Come to game	To remove party and proceed to Narrabri.
65	41 Feb., /84	Same to same	Books, &c., forwarded.
66	14 Feb., /84.—84/822	Mr. Harwood to Engineer-in-Chief	Doors, we., forwarded.

No. 1.

Mr. Turner to The Engineer-in-Chief.

Railway Survey Camp, Commissioner's Water, near Armidale, 1 December, 1882. Sir, I have the honor to report progress made with trial survey from Armidale to Trial Bay as

After completing the necessary arrangements I left Sydney on the 20th ultimo, and proceeded to examine the country in the vicinity of Armidale, and have decided to connect the above-mentioned trial survey with the Uralla to Armidale line, now under construction, at peg 257/30; from thence running in an easterly direction towards Commissioner's Water.

The country through which I am now going does not present any engineering difficulties; very good

gradients are obtainable.

JAMES G. TURNER.

No. 2.

Mr. Waddington to The Engineer-in-Chief.

Railway Survey Camp, Spencer's Creek, Macleay River, I December, 1882. I have the honor to report progress made with trial survey from Armidale to Trial Bay as

Left Sydney on the 16th instant, pitched camp on the 20th, and during the remainder of the month have been chiefly occupied in examining the country from Trial Bay towards Kinchela Creek on the south side of the Macleay River. This side of the river is exceedingly rough and difficult, consisting of extensive hills thickly timbered, and dense undergrowth, with large communicative swamps between them, consequently some considerable time is necessary for carefully examining the country, as most of it can only be accomplished on foot.

L. J. WADDINGTON.

No. 3.

Mr. Turner to The Engineer-in-Chief.

Railway Survey Camp, Grafton Road, 1 January, 1883. I have the honor to report progress made with trial survey from Armidale to Trial Bay as

After making a careful examination of the country through Gyra, Hillgrove, Urotah, and Woolomombi, I have succeeded in finding a practicable route as far as Woolomombi River, and am proceeding to explore in the parishes of Chandler and Euringilly, with a view of avoiding the rough country about the Vaky River. I also purpose exploring in the parishes of Snowy, Styx, and Serpentine, before reporting fully upon the country passed through.

The weather during the last month was executionally had for this time of the year and has greatly

The weather during the last month was exceptionally had for this time of the year, and has greatly

impeded the progress of the work.

JAS. G. TURNER.

No. 4.

Mr. Waddington to The Engineer-in-Chief.

Railway Survey Camp, Spencer's Creek, Macleay River, 1 January, 1883. I have the honor to report progress made with trial survey from Armidale to Trial Bay as follows:

The fixed traverse lines have been staked out as far as the south-east, side of Smoky Cape,, and the centre line has been staked out from the proposed site for the breakwater, "Lagger's Point," my startingpoint being alongside the new convict prison to the foot of Mount Arakoon.

The country at this part being very broken and difficult, I have had some considerable trouble to get out of Trial Bay with 12-chain curves, but have succeeded in getting a good line with very easy grades, and without entailing heavy earthworks.

The inclement weather that prevailed this month has prevented me making the despatch I desire.

A TO THE REPORT OF THE PARTY OF

L. J. WADDINGTON.

Mr. Turner to The Engineer-in-Chief.

Report.—Armidale—Trial Bay (Trial Survey).

Railway Survey Camp, Styx River, 25 January, 1883. I have the honor to report progress made with the above-mentioned survey, and to forward herewith tracing and description of route, with aneroid readings of heights.

After some difficulty I have succeeded in finding a practicable route as far as the parish of Serpentine. As already stated in my progress report for November, I connected with peg No. $\frac{2.67}{300}$ of the Great Northern Line, the object being to avoid town, suburban, and improved agricultural lands in and about Armidale. I am unable to give a definite description of the land passed through, as the reference to the county map is incomplete.

In an agricultural point of view the country is, with a few exceptions, very inferior, and although

the season is favourable the pastoral aspects are not good.

Sir,

I furnish herewith a description of the class of timber, and the geographical formation as far as my judgment dictates.

The work has been somewhat interrupted by wet weather and other circumstances over which I had I have, &c., JAS. G. TURNER. no control.

Armidale—Trial Bay (Trial Survey).

Description of Route.

Description of Route.

The proposed route commences at peg \$\frac{3}{2}\) of the Great Northern Railway, passing through Michael Cannon's land, Nos. 752, 753, 754, and 755, on the east side of Walker Road, crossing a low spur; then in a north-easterly direction, passing through Bower's 50 acres to Commissioner's Water (the route so far is on the south side of the Grafton Road), crossing river about 15 chains above the present Road Bridge, through Gilmer's land on-the north side of the Grafton Road, up a gully to a saddle between last-mentioned river and Burial Ground Creek (from here the route was extended to the Gyra River in an easterly direction, but was afterwards abandoned, as the country appeared to be leading too near to the "Hillgrove Falls" shown on map); the route now crosses Burial Ground Creek at the present Road Bridge; thence in a north-easterly direction over very good country on the north side of the Grafton Road on to the Gyra River, crossing at reserve Ro. 37, and through the south-east corner of M'Intyre's No. 13 C.P., up Sawpit Gully to a saddle about 139 chains from last-mentioned river, descending for a distance of about 60 chains to Cooney Swamp, passing through Nos. 72, 74, 107, and 108 C.P.; over a saddle about 80 chains above said crossing; down siding country in same direction to Baker's Creek, crossing about 70 chains below Donald Finlayson's homestead; then rising for about 180 chains over a saddle are "Finlayson's Re Farm" on main range between Baker's Creek and Woolomombi River, down towards "Conningdale" (Kenneth Finlayson's) on to Woolomombi River, crossing at a bend about 120 chains from K. Finlayson's homestead (the country from the eastern side of Pint-pot Creek to the last-mentioned saddle is rather difficult, the route unavoidably being taken against the natural fall of the country); running along siding country on the west side of Woolomombi River through D. M'Donald's 40 and 160 acres C.P.s to a saddle, passing through an abandoned homestead; thence down siding to junctio

abandoned.

Returning to Ponds Creek the route takes a more easterly direction, rising for about 100 chains to a saddle on the Grafton Road about 100 chains west of Road Bridge at Rocky Creek; thence easterly, siding up said creek on the north side, crossing about 60 chains below said bridge, passing through a small swamp over a spur, rising in a north-easterly direction along the north side of a creek known as "Dago Creek," crossing at about 60 chains from last-mentioned spur; then in an easterly direction up a gully on to comparatively level country; then in a north-easterly direction down an easy slope, crossing the Grafton Road near the 39-mile peg to the river Styx about 20 chains above the present road crossing. The whole of the country passed through on the proposed route presents facilities for reducing the gradients.

The distances given should be considered as approximate.

JAS. G. TURNER.

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JAS. G. TURNER.

No. 6.

Mr. Turner to The Engineer-in-Chief.

Railway Survey Camp, Styx River, 23 January, 1883. I have the honor to inform you that I have shifted camp to the above-mentioned river, but all communications should be addressed to "Woolomombi," to be forwarded.

Lhave, &c. JAS. G. TURNER.

No. 7.

No. 7.

Mr. Turner to The Engineer-in-Chief.

Sir,

Woolomombi, 1 February, 1883.

I have the honor to report progress made with trial survey from Armidale to Trial Bay. Since my first general report of the 24th ultimo I have nothing to add respecting the route.

The party has been engaged principally in cutting pack tracks through the ranges to enable horses to travel when shifting camp.

The country is very rough and thickly timbered.

I have been very unwell since the 27th ultimo, and have deemed it necessary to obtain medical advice in Armidale.

The weather continues to be very unsettled.

I have, &c., JAS. G. TURNER.

No. 8.

Mr. Waddington to The Engineer-in-Chief.

Sir, Railway Survey Camp, Spencer's Creek, Macleay River, 1 February, 1883. I have the honor to report progress made with trial survey from Armidale to Trial Bay, as follows

In consequence of the unprecedented severity and continuous unseasonable wet weather that prevailed on the Lower Macleay this month, and which created some alarm to many of the settlers, who removed their cattle and left their homesteads, to a place of safety, in full expectation of a great flood, leaves me but little progress to report. However, the centre line has been staked out and levelled for a distance of 3 miles 50 chains, being all curvilinear, with the exception of a few chains; and the surveys, which are numerous, are nearly completed for the above-named distance.

L. J. WADDINGTON.

No. 9.

Mr. Turner to The Engineer-in-Chief.

Railway Survey Camp, George's Creek, 15 February, 1883. I have the honor to inform you that I have shifted camp to the junction of Upper and Lower George's Creeks, and that I have made two camps since I left the Oakey; but my stay in each place was so short I thought it unnecessary to advise respecting them.

Letters addressed as usual will be forwarded.

I have, &c., JAS. G. TURNER.

No. 10.

Mr. Turner to The Engineer-in-Chief.

Oakey, mis-named in my last report Sty

Sir, Camp, George's Creek, 17 February, 1883.

In reply to your memorandum, No. 83-59, February 8th, which came to hand on the 16th instant, I have the honor to report that the route adopted, as far as the Oakey River, was selected after several attempts to find a better in other directions. The country south of the proposed line is lower, but leads into a series of falls, and the ascent east of Jeogla Run did not appear as practicable.

I intended, however, to further examine that part, had I not ascertained from observations that from

the Oakey River there is a descent mainly the whole of the remaining distance; but steep gradients are

unavoidable, and the construction would be very costly.

The greatest difficulty in descending occurs on the western side of Five-day Creek (vide red dotted I have, &c., JAS. G. TURNER. line on enclosed tracing).

No. 11.

Mr. Waddington to Engineer-in-Chief.

Railway Survey Camp, West Kempsey, 24 February, 1883. I have the honor to acknowledge the receipt of your Mr. Palmer's memo., dated the 8th instant, together with a tracing showing the district between Armidale and the coast, and the route Mr. Turner proposes for a line of railway to a point marked B as 3,653 feet above sea-level.

The cause of omission in my last report as regards gaining any ascent towards the tableland was the impracticability of making any ascent thereto within about 12 miles beyond Kempsey, being a distance of about 44 miles route from my starting-point at Trial Bay; consequently I thought it desirable to traverse, survey, peg out, and complete the line as I advanced for that distance, before I made any examination of the country beyond. However, immediately on receipt of your Mr. Palmer's instructions to report without delay in what direction I propose to make a practicable ascent of 3,653 feet to Mr. Turner's point B (which I fear will be a rather difficult task to accomplish within that limited distance), I at once shifted camp, and started to make the necessary examination of the country on the north side of the Macleay River, beyond Kempsey, and will continue on till I reach the aforesaid point B, if not otherwise instructed.

Please address "Kempsey Post Office."

I have, &c., L. J. WADDINGTON.

. No.∶12.

Mr. Waddington to Engineer-in-Chief.

Sir, Railway Survey Camp, Kempsey, 24 February, 1883. Please forward me a plan, 2 miles to inch, together with the reference sheets of the County of I have, &c., L. J. WADDINGTON. Macquarie.

Maps and reference sheets forwarded.—H.P., 7/3/83.

No. 13.

Mr. Turner to Engineer-in-Chief.

1 March, 1883. I have the honor to report progress made with trial survey from Armidale to Trial Bay, as follows:

During the month I have been engaged exploring between the Oakley River and Piedee Run, and have, I think, succeeded in finding a practicable route, but have not yet sufficiently examined the Botumburra Range to enable me to definitely determine, but hope to do so shortly, when I will furnish full detail in my next general report.

If I succeed in obtaining a satisfactory descent on the above-mentioned range, I apprehend that

comparatively few important difficulties will follow.

The country through which I am now passing is very rough and heavily timbered; necessitating cutting pack tracks when shifting camp, and causing the progress of the work to be slow and laborious.

JAS. G. TURNER.

No. 14.

Mr. Waddington to Engineer-in-Chief.

Railway Survey Camp, Kempsey, 1 March, 1883. I have the honor to report progress made with trial survey from Armidale to Trial Bay as

The centre line for a distance of 3 miles 50 chains from Trial Bay is pegged out complete, including levelling along centre line, cross sections, surveys of creeks, roads, lagoon, properties, &c., lockspitting, painting pegs, and the establishment of substantial bench-marks every half-mile. Beyond the above-named distance I have examined the country as far as a point marked A on the annexed tracing, and the route I propose the line to take is shown in red, which is the only practicable one to take so as to avoid swamps and the flood-waters from the Macleay River. The area (approximate) subject to inundations by a great flood (now seven years since the last occurred) is coloured light blue, and between it and the coast there are two sand ridges with jutting spurs on either side. These ridges run parallel with the coast, the outer one immediately on the coast, and the inner one is separated by a swamp averaging about $\frac{3}{4}$ mile wide, and then from this inner ridge to the river Macleay the land is swampy and low, and subject to flood-waters, except in a few isolated places, where there are sand-hills and spurs. The most suitable place to cross the Macleay River, away from flood-waters, is, I think, at Kempsey, where the banks are of a suitable height and the bottom rocky. For some considerable distance up the river beyond Kempsey, the land is low and subject to floods for many miles back from the river on either side. From my river crossing at Kempsey to the point A on tracing I follow on a low ridge of uniform level averaging 100 feet high, but very spurry on either side, that nearest the river very abrupt. The surveyed road goes along the summit, on which the country appears easy. The only ascent made towards the tableland up to the present time is about 120 feet above see level at point A on appeared tracing. I will continue my examination of the country towards the above sea-level at point A on annexed tracing. I will continue my examination of the country towards the tableland, in accordance with Mr. Palmer's instructions, dated the 8th ultimo.

L. J. WADDINGTON.

No. 15.

Mr. Turner to The Engineer-in-Chief.

Camp, Woolomombi, 1 April, 1883. I have the honor to report progress made with trial survey, from Armidale to Trial Bay, as

Since my last progress report, and during the past month, I have examined the country on each side of Five Day Creek, and, as anticipated, succeeded in finding a practicable descent from the Oakey River to a point the above-mentioned creek, where I met Mr. Waddington.

The closing of our reduced barometrical levels were very satisfactory.

Space in the monthly progress journal being limited, I will forward a more detailed report as soon

I have had great trouble with my party, and was compelled to change the men more than otherwise advisable, thereby causing inconvenience; they were troublesome when the work became rough and provisions difficult to obtain.

I am now on my way to Armidale, and purpose commencing the trial survey as soon as the camp is fixed at "Commissioner's Water," and the party made up. There is some difficulty in obtaining suitable men here.

JAS. G. TURNER.

No. 16.

Mr. Waddington to The Engineer-in-Chief.

Kempsey, 1 April, 1883. I have the honor to report progress made with trial survey from Armidale to Trial Bay as Sir; follows:

I have continued the examination of the country from point A, named in my last monthly report, to a point marked C, Selection 12, situated on the Five-day Creek, as indicated by the accompanying tracing, but my actual closing point with Mr. Turner's line is at a point marked B, Selection 1, on the same creek, and which I make 485 feet above sea-level. This now completes the examination of the

country

The country between Skillion Flat and Hickey's Creek is for the most part gum-tree forest, poor soil, but comparatively easy for construction; thence to Five-day Creek the country consists of apple-tree and mixed timber forest, with patches of excellent pasture on the flats and gullies, but a large portion is absolutely useless, owing to its steep mountainous sides and absence of soil. Through this latter portion the works of construction would be very heavy, on account of the spurry nature of the hills, and very broken country with its deep gullies to span, and would probably necessitate three tunnels (not of great length) at the points indicated on the tracing. From the crossing of Five-day Creek upwards to point B the works would be lighter, although costly. The country on this creek is principally apple-tree forest, excellent soil, and suitable for cultivation; in fact, the best land suitable for agricultural purposes is to be found on the creeks and river flats.

I beg to suggest that during the progress of traversing several deviations from my route should be made, to ascertain their respective merits, i.e., on the edge of the river, where the cliffs are not too perpendicular, thereby save one if not two tunnels, but at the same time would increase the length of the line I would suggest that an alternate line be tried up the Nulla Nulla Creek. I am shifting camp back to Trial Bay end of the line, where I will re-commence traversing, setting out, &c., from the point I departed

from; until further instructed.

LEONARD J. WADDINGTON.

No. 17.

Mr. Turner to The Engineer-in-Chief.

Armidale—Trial Bay (Trial Survey.)

Armidale, 12 April, 1883. I have the honor to report the completion of exploration for Railway line between Armidale and Trial Bay, and forward herewith tracing and description of the continuation of route from the Oakey River to Five-day Creek, where I met Mr. Waddington.

The country is very rough, and has therefore been difficult to examine. I have, however, succeeded in obtaining satisfactory results from approid measurements, and consider the route practicable.

in obtaining satisfactory results from aneroid measurements, and consider the route practicable.

As well as exploring the country described, I have made a careful examination of other parts, without the same satisfactory results.

I am now proceeding with the trial survey as directed.

I have, &c., JAŚ. G. TURNER.

Armidale—Trial Bay (Trial Survey.)

Description of Route-

Oakey, mis-named Styx in last report.

Description of Route—continued.

CROSSING the Oakey River about half a mile above the Grafton Road, the route continues along siding country in an east-north-easterly direction; on the south side of the Snowy Range, to a low saddle (No. 1); from thence in an easterly direction down the south side of a gully for some distance; then crossing on to the north side, to a point on the Styx River, about 40 chains above the junction of said gully with last-mentioned river, where it is proposed to cross; thence in a more southerly direction to Upper George's Creek; thence south-south-easterly along the side of Cunnawarra Range (average slope of siding 1 in 3), to a saddle (No. 3) on a spur between the two branches of Upper George's Creek; passing through reserve No. 2, on Diamond Flat; thence easterly to another saddle (No. 4); where the Old Kempsey Road crosses. (An alternate route is shown on the accompanying tracing by a red dotted line, which would save a rise of over 400 feet, and a greater distance could be gained to ease the gradient; the country, however, is very rough.) From the last-mentioned saddle the route continues down the eastern side of Botumburra range in an east-south-easterly direction: the upper part of the range is very steep, and the general roughness of the country has caused the examination of the route to be difficult.

This portion of the proposed route terminates on the northern side of Warne's C.P. No. 1, Peedee, the reduced baro-

This portion of the proposed route terminates on the northern side of Warne's C.P. No. 1, Peedee, the reduced barometrical level being 485 feet above sea-level.

JAS. G. TURNER.

12 April, /83.

No. 18.

Mr. Turner to The Engineer-in-Chief.

Camp, 1 May, 1883. Sir. I have the honor to report progress made with trial survey from Armidale to Trial Bay as

The line has been staked out from $\frac{2.6.7}{3.07}$ of the Great Northern Line, my starting-point, to 9 miles 20 chains near the Gyra River, 8 miles of which has been levelled, and the greater part check levelled.

There is nothing sufficiently remarkable to need comment so far; the country is broken, but not at all difficult for railway construction.

JAS. G. TURNER.

No. 19.

Mr. Waddington to The Engineer-in-Chief.

Sir, Kempsey, 1 May, 1883. I have the honor to report progress made with trial survey from Armidale to Trial Bay as follows :-

Since my return from the foot of the tableland I have continued setting out the centre line, also traversing through the sand-hills at the head of Long Swamp.

The country gone through consists of very dense tea-tree and honeysuckle scrub, consequently so many rough traverse lines are absolutely necessary to cut, so as to sweep round the sand-hills and to avoid the numerous small local swamps lying between.

LEONARD J. WADDINGTON.

No. 20.

Mr. Turner to The Engineer-in-Chief.

Armidale, 1 June, 1883. I have the honor to report progress made with the Armidale Trial Bay survey during the month of May as follows:

I have staked and levelled as far as Pint-pot Creek, but, as will be observed upon reference to level books, have not been able to complete the check levelling the whole of that distance.

The weather has been wet and stormy, and greatly impeded the progress of the work. I have also been very unwell.

I discharged the men in my party on the 31st ultimo, as ordered, and send all papers, plans, &c.,

also my account and check books relating to my public account, by the mail train.

The pay list for men's wages, enclosed herewith, is signed, but in case it is considered informal I have also enclosed one made out in the usual way. My object in doing so is to prevent any delay. men having been discharged are anxious to receive their wages, which they desire to be sent to their address, "Turner's Camp, Cooney, near Armidale," in separate envelopes, the amount (£10 5s. 7d.) to be paid in to my account Commercial Bank, Armidale. I have, &c.

JAS. C. TURNER.

No. 21.

Mr. Waddington to The Engineer-in-Chief.

Kempsey, 1 June, 1883. I have the honor to report progress made with trial survey from Armidale to Trial Bay as follows:

Many miles of rough trial traverse lines have been cut, and the fixed traverses for centre lines advanced to 9 miles.

The centre line has been staked out up to 8 miles.

The country gone through consists of broken sand-hills, covered with very dense scrub of tea-tree, honeysuckle, and occasional patches of bastard gum.

Numerous swamps intervene these sand-hills on all sides.

The line through this part is mostly curvilinear, but now having got fairly on to the inner or main sand ridge I expect to secure longer lengths of straight and much less earthworks than before

L. J. WADDINGTON.

No. 22.

Mr. Waddington to The Engineer-in-Chief.

Kempsey, 30 June, 1883. I beg to acknowledge the receipt of Mr. Palmer's memorandum dated the 20th instant, stating that he considers "the rate of progress made with the trial survey from Trial Bay towards Armidale most unsatisfactory." If Mr. Palmer was acquainted with the country the survey goes through, and the many

drawbacks to contend with, I think he would considerably alter his opinion.

I am cognizant of the fact that the rate of progress appears slow, but this is attributable to the inexperienced and inferior class of men I can only obtain that will work in this district for the low rate of 6s. per day, where rations and everything else is exceedingly expensive, and the demand for labour in this district at a much higher ruling rate, and then they only stop till they get their first pay or so. On inspection to my pay lists you will find that no less than ten changes of hands have occurred, and I expect more the next pay; this of course incurs loss of time in finding fresh hands—such frequent changes I never before experienced on any survey. Good survey hands refuse to come for 6s. a day when they can get 7s. and 8s. in other Government Departments.

Only slow progress can possibly be made with four field hands going through the dense scrub and forest, as every line for measurement, whether for cross sections or feature survey, have to be cleared; and so many of the traverse lines after they have been cleared prove useless, as they frequently run butt into some local swamp. It is impossible to see ahead through this impenetrable scrub.

Very often only three hands are available in the field, as the distance is so great to go for meat, rations, horsefeed, post, &c. As it is I lose so much valuable time waiting for the clearing to be done, and during which I turn to with the axe or bush hook myself. Last April I put an extra man on to facilitate the clearing, but the Department very unjustly, I consider, struck out his wages on the pay list, consequently I had to pay them out of my own pocket. Wet weather has been another severe drawback: it rained more or less on fifty-two consecutive days at the beginning of this year.

Perhaps I am making this a too accurate and detail survey,—that by curtailment it would be more expeditious. I am setting out all lines, angles, curves, and staking the centre line with the theodolite. Stakes 2 × 2 painted red are driven in the ground at intervals of 5 chains on the straight and 2 chains on

the'

the curves; 4 × 4 stakes painted white at the intersections, and indicators for same with ditches dug thus thus distributed and a dug round each intersection. Chainage painted on a peg

thus for every 10 chains. Good substantial B. M.s established every half-mile. Cross

sections taken from 1 to 4 chains apart on sidelong ground, and feature surveys made within a proximity of 5 chains, viz., coast lines, lagoons, creeks, swamps, roads, buildings, fences, &c. Centre line levelled at intervals of 1 chain, and less where there is non-uniformity of surface, and the centre line check levelled.

I am working from 8 a.m. till dark, Saturdays inclusive.

The probable time I expect will require to carry the survey to the point where I joined Mr. Turner on Five-day Creek when selecting the route, an approximate distance from Trial Bay about 85 miles, is—

1st.—With an assistant and seven field hands 8 months.
2nd.—Self and six field hands 12 ,,
3rd.—Self and four field hands 16 ,,

Your instructions will be faithfully obeyed.

I have, &c.,

LÉONARD J. WADDINGTON.

Bỹ this mail I forward a tracing as requested of as much of the survey that I have plotted. Tracing paper advised to me on the 20th instant not received.—L.J.W.

Mr. Palmer.—W.H.Q., 7 July, 1883. I think it is clear from this report that a change should be made in the conduct of this survey. Mr. Waddington commenced the examination of this country in November last, and by the 30th of last month 9½ miles of plan and section through almost level country was all that he had to show for over six months' work. I think Mr. Waddington might be usefully employed on easier country, where he would be under more supervision, and that he should be recalled.—H.P., 10/7/83. The Engineer-in-Chief.

Mr. Waddington appears to have made but little progress in an "almost level country." Would it be advisable to transfer him to any other survey, and if so, to which line?—W.H.Q., 12/7/83. Mr.

Palmer

Mr. Waddington was one of the surveyors named in my report, 83/2326, as not being satisfactory, but it has since been decided by the Engineer-in-Chief that the service of those surveyors should be utilized at present.—83/2545.—H.P., 13/7/83.

No. 23.

Mr. Stuart to The Engineer-in-Chief.

Sir,

I have the honor to report we expect to have the Inverell end of this trial survey completed before the 20th of next month (July).

Railway Survey Camp, Inverell, 30 June, 1883.

Your obedient servant,

CHAS. McD. STUART.

Mr. Palmer.—W.H.Q., 3 July. I think it will be advisable to send Messrs. Stuart and Harwood on the Armidale and Trial Bay survey, if no further surveys are required in the Inverell district.—H.P., 11/7/83. The Engineer-in-Chief. Approved.—J.W. (p. W.H.Q.), 12 July, 1883. Mr. Palmer.

No. 24.

The Assistant Engineer for Trial Surveys to Mr. Stuart.

Mr. Stuart,

On the completion of the trial survey from Glen Innes to Inverell you may forward all plans, books, &c., connected with that work to this office.

You may then proceed with your party to Armidale to make the trial survey from that town to

Trial Bay.

Report by what date you expect to reach Armidale, and I will then forward to that address plans, instructions, &c.

HERBERT PALMER.

No. 25.

The Assistant Engineer for Trial Surveys to Mr. Harwood.

Mr. Harwood,

On the completion of the Glen Innes and Inverell trial survey you may forward to this office all plans, books, &c., connected with the work, and may then proceed with your party to Armidale to make a trial survey from that neighbourhood to Trial Bay.

Report by what date you expect to reach Armidale, and I will then forward to that address plans, instructions, &c.

HERBERT PALMER.

No. 26.

Mr. Waddington to The Engineer-in-Chief.

Sir,

I have the honor to report progress made with trial survey from Armidale to Trial Bay as follows:—

The traverse line has been staked out up to 12 miles.

The country gone through continues of broken sand-hills covered with very dense scrub and forest trees.

L. J. WADDINGTON.

No. 27.

Mr. R. B. Smith, M.P. to The Engineer-in-Chief.

Sir,

Referring to my interview with Mr. Quodling on the 19th June, and his suggestion to write you officially, I have the honor to enclose telegram, and also a leading article which appeared in the Macleay Chronicle for your perusal, and to request that you will be pleased to cause to be furnished to me by Monday next all the information at your disposal respecting progress made in the trial survey of the line from Armidale to Trial Bay.

I venture to make this request as I leave Sydney in a few days via_5 Armidale to Kempsey, and will traverse the proposed line of railway. If you will kindly have my request complied with I shall feel much obliged.

Your obedient servant,

R. BURDETT SMITH.

Telegram from Mr. C. J. N. Dean to R. B. Smith, Esq., M.P.

What answer given by surveyors, Turner, Waddington, Trial Bay survey? See letter from Department, Macleay Herald.

Mr. Palmer.—W.H.Q., 6 July, 1883. I regret to have to report that the most unsatisfactory progress has been made on this survey. Two surveyors commenced the work last November, one at the Armidale end and the other at Trial Bay. The former has been dismissed for improper conduct, and the latter I have recommended for removal, as I do not consider him competent to carry out a trial survey through such difficult country. About 10 miles at each end has been surveyed.—H.P., 10/7/83. The Engineer-in-Chief.

No. 28.

The Chief Clerk to Mr. R. B. Smith, M.P.

Sir,

In reply to your letter of 5th instant, requesting information as to the progress made with the railway trial survey between Armidale and Trial Bay, I have the honor to inform you that about ten (10) miles at each end of the line have been surveyed, and every effort will be made to push forward the survey to completion, having regard to the difficult country to be traversed.

I regret that I was unable to obtain this information for you by the 9th inst. as requested, and hope

the slight delay will not have put you to any inconvenience.

I have, &c., W. H. QUODLING.

No. 29.

Mr. W. C. Proctor, M.P., to The Chief Clerk.

Dear Sir, Sydney, 188.

Would you kindly let me know what progress has been made with the Armidale to Trial Bay survey for a line of railway, and what is being done to complete the work, and oblige

W. C. PROCTOR.

P.S.—If you could let me have the information to-day or to-morrow I should be obliged.

W.C.P.

No. 31.

No. 30.

The Chief Clerk to Mr. W. C. Proctor, M.P.

Sir,

In reply to your letter of —— date, inquiring as to the progress of the railway survey between Armidale and Trial Bay, &c., I have the honor to inform you that about 10 miles at each end of the line have been surveyed, and every effort will be made to push forward the survey to completion as early as practicable, having regard to the difficult country to be traversed.

I have, &c., W. H. QUODLING, (For the Engineer-in-Chief).

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No. 31.

The Assistant Engineer for Trial Surveys to Messrs. Harwood and Stuart.

Messrs. Harwood and Stuart, Armidale, Under separate cover I have sent you to the above address the plan and section and field and level books of that portion of the trial survey from Armidale towards Trial Bay completed by Mr. Turner.

I also forward a district plan of county maps of the country throughout from Armidale to Trial Bay,

showing the route recommended for trial survey between these points by Messrs. Turner and Waddington, together with a copy of Mr. Turner's reports on the portion of the route examined by him

You will observe from the section that it is not graded beyond the crossing of the Gyra River, and before continuing the survey to meet Mr. Waddington, who is working from Trial Bay towards the table-land, you must ascertain whether a better section may be obtained from the Gyra River to the summit at A No. 94. Cross sections may be sufficient to show whether the pencil grade of 1 in 40 may be used, or, if necessary, you may survey a deviation. I wish you to work together so that you may push forward a traverse and a section as rapidly as possible to the point where the actual descent towards the coast is to be commenced.

HERBERT PALMER.

No. 32.

Mr. Waddington to The Engineer-in-Chief.

Kempsey, 1 August, 1883. I have the honor to report progress made with trial survey from Armidale to Trial Bay as follows:

The traverse line has been staked out up to 16 miles.

The country gone through consists of low broken sand-hills, covered with very dense scrub and

forest trees combined, and abounds with numerous swamps throughout.

The survey could be very considerably expedited and a saving effected in its cost by allowing me two extra labourers to assist the perpetual cutting and clearing in the dense scrub, which is so prolific throughout this coast district.

L. J. WADDINGTON.

No. 33.

Messrs. Harwood and Stuart to The Engineer-in-Chief.

Trial survey, Armidale to Trial Bay.

Sir,

Railway Survey Camp, Armidale, 10 August, 1883.

We enclose plan and section with cross levels where the line crosses the dividing range, east side of the Gyra River. The black line shows Mr. Turner's section, and the blue line the correct one as levelled by us over his traverse between stations 83 and 95. You will see there is a considerable difference

between them which materially affects the gradient.

We might mention the line up to our starting-point, 15 miles from Armidale, is, as far as we have gone over it, neither blazed or pegged, and has only loose waddies at the various traverse stations, so that in a few months all traces of it will have disappeared.

We are, &c., H. T. HARWOOD & C. M'D. STUART.

No. 34.

The Assistant Engineer for Trial Surveys to Mr. Waddington.

Mr. Waddington, I wish you without delay to place yourself in communication with Messrs. F. G. Paton, A. Verge, T. Dangar, and A. Cochran, of the Macleay, and ascertain from them what in their opinion is the most practicable route for a line of railway from the coast level at the Macleay to the New England tableland, and to report in what particulars the route they may propose differs from that upon which you are at present engaged in making a trial survey.

HERBERT PALMER.

No. 35.

The Assistant Engineer for Trial Surveys to Mr. Stuart.

Mr. C. McD. Stuart, As I am informed that your services will be required as Assistant to the District Engineer on the Illawarra line, you may break up your survey-party and hand over to Mr. Harwood all plans, books, &c., connected with your work.

You may then return to Sydney with as little delay as possible, and report yourself on your arrival at the office of the Engineer-in-Chief.

HERBERT PALMER.

No. 36.

The Assistant Engineer for Trial Surveys to Mr. Harwood.

Mr. Harwood. Before proceeding further with the trial survey from Armidale towards Trial Bay, I wish you to see Mr. Aaron Crossman, of Armidale, and to ascertain from him what, in his opinion, is the best route for trial survey for the proposed line from the tableland to the coast, and to report without delay in what particulars the route he may propose differs from that recommended for survey by Mr. Turner.

HERBERT PALMER.

No. 37.

The Assistant Engineer for Trial Surveys to Mr. Harwood.

Mr. Harwood, 14 August, 1883. With reference to your report as to want of marks, &c., on Mr. Turner's survey between Armidale and your starting-point at 15 miles, it will not be necessary to go over this work again at present, as it is most necessary for you to push this survey forward as rapidly as possible to the part where the chief point of this survey is to be tested, viz., the practicability or otherwise of obtaining a feasible descent from the tableland to the coast level.

HERBERT PALMER.

No. 38.

The Minister for Works to The Engineer-in-Chief.

Trial Survey, Armidale to Trial Bay.

Department of Public Works, Sydney, 13 August, 1883.

Mr. R. B. Smith, M.P., called to request that he might be officially informed whether survevors have been sent on this work?

What is proposed to be done?

Where the surveyors now are?
What progress has been made, and if they can be instructed to communicate with residents of years standing as to the most practicable route, giving the names of Messrs. Aaron Crossman, J.P., Armidale; F. Goulburn Paton, A. Verge, O. Dangar, and A. Cockran, at the Macleay.

Mr. Whitton, for report.—J.R., B.C., 13/8/83. Mr. Palmer.—W.H.Q., 13/8/83.

This survey is still being continued, both from Armidale and from Trial Bay; 15 miles have been completed from Armidale, and 16 miles from Trial Bay. I have instructed the surveyors to communicate with the gentlemen named, and to ascertain from them what in their opinion is the most practicable route for a line of railway through this district.—H.P., 14/8/83. Under Secretary for Works, B.C., 15 August, 1883.—W.H.Q. (for the Engineer-in-Chief.) Inform Mr. Smith, M.P.—15/8/83, F.A.W.

No. 39.

The Under Secretary to Mr. R. B. Smith.

Sir;

Department of Public Works, Sydney, 16 August, 1883.

In reply to your personal inquiries as to the progress made with the preliminary survey for a line of railway from Armidale to Trial Bay, &c., I am directed to inform you that the survey is being continued at the present moment at both places, 15 miles having been completed from Armidale, and 16 miles from Trial Bay.

I am to add that into

I am to add that instructions have been issued to the respective surveyors engaged in the work to put themselves in communication with the gentlemen referred to in your letter with the view to ascertain from them what in their opinion would be the most practicable route for a line of railway through the district.

No. 40.

Mr. Harwood to The Engineer-in-Chief.

Sir,

Railway Survey Camp, near Armidale, 20 August, 1882.

With reference to memo. 83/296, instructing me to ascertain from Mr. Crossman, of Armidale, what, in his opinion, is the best route for trial survey from the table-land to the coast, I beg to inform you that I was speaking to that gentleman on the subject to-day. He told me that he knew very little of the country between Armidale and the Styx River, and was therefore unable to suggest a better route than the one recommended for survey by Mr. Turner, between those places. With regard to the descent from the tableland, the long spur, shown on county map, forking the George's Creek, near reserve 52, and the Nulla Nulla Creek, were mentioned by Mr. Crossman as places where the fall might be obtained by an easy gradient; but he could not say that they were better than the line recommended for survey.

I am, &c., I am, &c., HAMILTON HARWOOD. recommended for survey.

No. 41.

Mr. Waddington to The Engineer-in-Chief.

Kempsey, 1 September, 1883. I have the honor to report progress made with trial survey from Armidale to Trial Bay, as Sir, follows:

The traverse line has been staked out up to 19 miles 40 chains.

The country gone through continues of the same character as before, viz.:—Broken sand-hills, covered with very dense scrub and forest trees combined, and abounds with extensive swamps throughout.

Mr. Palmer's instructions to me, dated the 14th ultimo, are receiving prompt attention.

L. J. WADDINGTON.

No. 42.

Mr. Harwood to The Engineer-in-Chief.

Railway Survey Camp, near Armidale, 1 September, 1883. I have the honor to report progress made with the trial survey—Armidale to Trial Bay, as

Having explored and made trial traverses from the end of Mr. Turner's survey (10 chains west of Pint-pot Creek, 15 miles from Armidale) to the high tableland between Baker's Creek and the Woolomombi River, I found that it would be unadvisable to adopt the suggested route. The dividing range between Pint-pot and Baker's Creek is here very broken, making it almost impracticable for a line of railway; and unless a gradient of 1 in 30 were used, the ascent from Baker's Creek could not be made.

I have therefore started traversing from 13 miles 50 chains in a northerly direction, crossing Pintpot Creek about 3 miles and Baker's Creek 1 mile above the suggested line. 4 miles 56 chains to 18 miles 26 chains has been surveyed and levelled.

I am, &c.,
H. T. HARWOOD.

No. 43.

Mr. Waddington to The Engineer-in-Chief.

Armidale to Trial Bay-Trial survey.

Sir, Kempsey, 1 September, 1883. Please inform me what length sections you desire the field diagrams in, for this survey, to be forwarded to you. I have, &c., L. J. WADDINGTON.

No. 44.

The Assistant Engineer for Trial Surveys to Mr. Waddington.

Mr. Waddington, addington, 5 September, 1883. You may send in progress tracings of the plan and section of the trial survey from Trial Bay towards Armidale in 5 mile lengths as completed.

HERBERT PALMER.

No. 45.

Enclosure from Mr. R. B. Smith, M.P., to The Minister for Works.

ar Sir, Yanawall, Macleay River, 12 September, 1883. I have the honor to enclose two resolutions passed at a meeting of the Macleay River Railway My dear Sir, League, held on Tuesday last, and in doing so I have much pleasure in informing you that the statement I made to you in my letter of date July, 1881, that there were no difficulties of any moment on the proposed Trial Bay-Armidale Line line for a distance of from 70 to 80 miles, is fully confirmed by Mr. Surveyor Waddington; this being the case, it is but fair to assume that what I further stated in the same letter will be found correct, viz., that the difficulty of ascending from the valley of the Macleay to the tableland of New England will not in any way be found comparable with the difficulty of ascending the Blue Mountains on the Great Western line.

Blue Mountains on the Great Western line.

You will also be pleased to learn that Mr. Waddington states that the line from Trial Bay to Kempsey, a distance of 35 miles, can be constructed more cheaply than any other of an equal distance in the Colony. You will perceive by the first resolution that Mr. Waddington has examined the country for 85 miles, and that there are no difficulties of any consequence for that distance, and the line can be constructed very cheaply. After traversing this 85 miles it will then be necessary to ascend the range from the valley of the Macleay to the tableland of New England (not the one that you came down), have much more practicable one about 16 miles up Five-day Creek: once up this range the railway could range from the valley of the Macleay to the tableland of New England (not the one that you came down), but a much more practicable one, about 16 miles up Five-day Creek; once up this range the railway could either go direct to Armidale, or the line could be taken (for an equal distance as that to Armidale) to a point on the Great Northern Line to Queensland, 40 miles or more to the north of Armidale; and by doing this, the whole of the western country, inclusive of Inverell, also that of North and South New England, would be in communication with Trial Bay, where produce could be shipped were jetties provided. I need not reiterate what I have so often stated to you, "that there can be no question that Trial Bay will be a splendid harbour so soon as a portion of the breakwater is completed."

I would also draw your attention to the fact that a railway can be constructed from Armidale to Trial Bay within a distance of 135 miles, and for the same, and perhaps a shorter distance, were the line to join the northern line to the Queensland border—say 40 miles north of Armidale. No other line can be taken from the tableland to so good a harbour, and no line can be constructed so cheaply. You will please remember the proposed line from Glen Innes to Grafton terminates at the latter place—50 miles from the sea-board, and at which there is no harbour, and never can be; and further that the entrance to the Clarence is highly dangerous; and it is almost beyond a probability that it can ever be improved, at any rate

rate the fact stares us in the face that although vast sums of money have already been expended on this bar, instead of improving it, matters have been made rather worse. Further, I have to ask you to again urge upon the Minister the justice of waiting for the result of our survey before any proposition for the construction of any other line from the coast to the tableland of New England be submitted to Parlia-

I wish you to do this in the *interests of the country*, and not simply as the Member for The Macleay. As you are aware, my railway scheme embraces the construction of a coast line from Maitland to The Tweed, and one line from the tableland of New England, terminating on the coast at the grand harbour of Trial Bay, the finest on the coast, with the exception of Port Jackson. If the Government were to carry out this scheme, every interest and all the requirements of those great northern rivers would be met. Of course I can foresee there would be much local opposition at The Clarence and Glen Innes, and perhaps other places; but I would ask, are the interests of the rivers to the south of The Clarence to be ignored, and the general interest of the country to be sacrificed, to please any local cliques, be they ever so powerful. It would be a great day for the country if the Government—rising superior to the influence, the meanness, and the littleness of country cliques—were to adopt this grand scheme in its entirety; and the great advantage of which I challenge any one (so far as the interest of the Colony generally is concerned) to deny or gainsay.

The construction of the line from Grafton or from The Tweed to Trial Bay, and of that from Armidale to Trial Bay, and of that from

Armidale to Trial Bay, could be proceeded with simultaneously.

In conclusion, I have further to say that the line from Trial Bay to Armidale, or to a point 40 miles north from that place, would return good interest upon the money expended on its construction. Of course all the calculations laid before the Minister, in re Grafton-Glen Innes and Grafton-Tenterfield lines, by the various deputations from those places, will apply to the Armidale-Trial Bay line; and if justice is

done us, we ought to score a win when the spendid terminus our line possesses is taken into account.

If you think these few lines and my views are worth representing to the Honorable the Minister for Works I am quite willing you should do so, and I am quite sure that your constituents here will endorse my views in the matter.

F. GOULBURN PANTON,

Provident Smith For M. P. Smith

President, Macleay R. Railway League.

R. Burdett Smith, Esq., M.P., Sydney.

RESOLUTIONS passed at a meeting of the Macleay River Railway League, re Trial Bay-Armidale Junction Railway, held this day, Tuesday, 12th September, 1883, at Kempsey.

That this League, having heard Mr. Surveyor Waddington's explanation of the line to be followed by him in his survey for the Trial Bay-Armidale Railway line, desires to express its satisfaction with the same. This League being, however, desirous of affording information of the country beyond Five-day. Creek, and of pointing out an alternative route, it is hereby resolved that the President write to R. Burdett Smith, Esq., M.P., requesting him to interview the Honorable the Minister for Works, and to ask that instruction be given to the surveyor on the Armidale side of the proposed line to communicate with the President of this League, and also with Mr. Surveyor Waddington, in order that a conference of the surveyors, and some members of this League, and others interested, may meet at Long Flat Station, about 50 miles from Kempsey, and some 12 or 15 miles from Five-day Creek, to decide upon the most practicable route to ascend from the valley of the Macleay to the tableland of New England, and, if necessary, to point out the alternative route before alluded to; and further, that Mr. Smith be requested to draw the attention of the Minister to the fact that Mr. Waddington's opinion is, "that a practicable and cheap line can be constructed for 85 miles of the proposed route—85 miles being the distance Mr. Waddington has gone over this line." Waddington has gone over this line.

The above resolution was proposed by O. O. Dangar, Esq., J.P., and seconded by G. T. Bethel, Esq.

Proposed by Alexander Cochrane, Esq., seconded by O. O. Dangar, Esq., J.P.:-That the President write to R. B. Smith, Esq., M.P., requesting him to obtain and forward to the League copies of the reports received from the surveyors on each end of the line up to the 1st of September, 1883, in re Trial Bay-Armidale Junction Railway.

F. GOULBURN PANTON,

President, Macleay River Railway League. Memo.—The course proposed by the Macleay River Railway League will no doubt save delay in exploration. Will Mr. Wright kindly ask the Engineer-in-Chief if he can take the steps suggested in the resolutions.—R. Burdett Smith, Member for The Macleay, 20th Sept., 1883. The Honorable Minister for Works.

Ackge. Engineer-in-Chief for Railways, 20/9/83.—J.R.

The surveyors have already been instructed to communicate with residents both at the Armidale and Macleay ends of this trial survey, and they are now working from either end, in accordance with arrangements made after an exploration of the country, the route adopted agreeing, I believe, with the suggestions that have been made by residents professing to know the country well.—H.P., 2/10/83.

No. 46.

The Under Secretary to Mr. R. B. Smith, M.P.

Department of Public Works, Sydney, 2 October, 1883. In reference to the resolutions adopted at an influential meeting of residents of the Macleay River District, held at Kempsey on the 12th ultimo, and in compliance with the request contained in the letter of Mr. Panton on the subject, I am directed by the Secretary for Public Works to inform you that the surveyors at present employed upon the trial line at either end of the proposed railway from the coast to the teleboland at Armidology and the surveyors at present employed upon the trial line at either end of the proposed railway from the coast to the tableland at Armidale were instructed to place themselves in communication with the people in the district acquainted with the locality and interested in the work, and that in accordance with the arrangements made, and after an exploration of the country, the Engineer-in-Chief for Railways is given to understand that the route adopted agrees with the suggestions that have been made by the residents. I have, &c.

JOHN RAE.

No. 47.

Mr. Waddington to The Engineer-in-Chief.

Kempsey, 1 October, 1883. Sir, I have the honor to report progress made with trial survey from Armidale to Trial Bay as

The traverse line has been staked out up to 21 miles. The country gone through continues of broken sand-hills covered with dense scrub and forest trees, and abounds with extensive swamps. L. J. WADDINGTON.

No. 48. Mr. Harwood to The Engineer-in-Chief.

Railway Survey Camp, Ten o'clock Creek, 1 October, 1883. Sir, I have the honor to report progress made with trial survey Armidale to Trial Bay, as follows:— The traverse has been continued from 18 miles 27 chains to 26 miles, 6 miles 27 chains of which is levelled and cross-sectioned. After crossing Pint-pot Creek in reserve 244, the line runs through portions 58 and 9, crosses Baker's Creek near dotted track over a saddle in the dividing range between Baker's Creek and Woolomoobi River, at portions 7 and 6; then down side-lying country to the above river. There is a fall of 400 feet (by aneroid) between the saddle and the river, a distance of 4 miles, but no I am, &c., H. T. HARWOOD: easier descent could be found, the country being very rough and broken.

No. 49.

Mr. Waddington to The Engineer-in-Chief.

Kempsey, 1 November, 1883. Sir, I have the honor to report progress made with trial survey from Armidale to Trial Bay as

I very much regret that, owing to severe indisposition, caused probably by over-work and exposure to the weather, the progress in October has thereby been retarded. As a rule my party has been tolerably

healthy, with the exception of a case of blood-poisoning.

With a view to recoup for the lost time during my temporary indisposition, I am now working in the field from eleven to twelve hours a day, Saturdays inclusive.

The centre line has been staked out up to 22 miles 34 chains 25 links.

The country gone through is forest land with undergrowth up to 21 miles 27 chains 85 links, running along the foot of the north side of what is called Little Hill, which formation is conglomerated stone, thence to 22 miles 34 chains 25 links.

At the foot of Tulkenggay mountain is Darkwater Swamp, being 1 miles 6 chains 40 links across, and containing reeds and grass with standing water the entire distance. The bed is good, consisting of a

kind of pipeclay. The flood-waters from the Belmore River flow over this swamp, thence into Back Creek, Maria River, Wilson River, Hastings River, and out to sea at Port Macquarie, consequently these flood-waters must be spanned, and in finding the most practicable position with economy in construction, I have expended much time and labour in examining both sides, as they are very densely timbered and boggy, which made it very difficult to travel. However, I think I have selected a good crossing, and at the same time will save many miles of line from my original route laid down, as I find I can get a good and easy line round by the north side of Tulkenggay Mountain into Kempsey.

L. J. WADDINGTON.

No. 50.

Mr. Harwood to The Engineer-in-Chief.

Railway Survey Camp, Maiden Creek, 1 November, 1883. I have the honor to report progress made with the trial survey, Armidale to Trial Bay, as Sir, follows

From 26 miles to 36 miles 40 chains has been traversed, and from 24 miles 60 chains to 36 miles

40 chains has been levelled.

The traverse crosses the Woolomombi River about a mile above its junction with Ten o'clock Creek and the latter creek about 30 chains above said junction; then rising over a saddle near the Woolomombi track crosses a valley through the stockyards near D. M'Donald's old homestead (now owned by A. M'Rae), portion No. 11, and then rising for about 60 chains to a gate in the Dividing Range, Woolomombi and Chandler Rivers. Crossing the Chandler River near its junction with Maiden Creek, the traverse passes over a saddle near the old Armidale and Grafton Road and down to House Creek, which it crosses about a mile above said road crossing.

I have, &c., I have, &c.,
HAMILTON HARWOOD.

No. 51.

Mr. Harwood to The Engineer-in-Chief.

Railway Survey Camp, Oakey River, 30 November, 1883. I have the honor to report progress made with trial survey, Armidale to Trial Bay, as-Sir, follows:

6 miles 20 chains have been staked and levelled.

From House Creek the line passes over the divide between it and Pond's Creek through M'Allister's selections, crossing the latter creek near the S.W. corner of portion No. 22, then rising for about 100. chains to the Armidale and Grafton road over a saddle near junction of the old and new roads; then down to Rocky Creek, which is crossed about 40 chains below the road bridge. From this point to the end of the length (42 miles 60 chains) the line bears in an easterly direction through unselected country.

I am, &c., HAMILTON HARWOOD.

No. 52.

Mr. Waddington to The Engineer-in-Chief.

Sir, Kempsey, 1 December, 1883. I have the honor to report progress made with trial survey from Armidale to Trial Bay as follows:

The traverse line has been fixed and staked out up to 25 miles.

The country gone through is at the foot of the north side of Tulkenggay Mountains, through dense

forest trees and patches of undergrowth, very spurry, of conglomerate stone formation. The works on this portion of the line will be somewhat more unavoidably heavy than hitherto.

Acting immediately on the instructions received from Mr. Palmer, dated the 14th August last, to ascertain from Messrs. F. G. Panton, A. Verge, O. Dangar, and A. Cochrane, of the Macleay, what in their opinion is the most practicable route for a line of railway from the coast level at the Macleay to the New England tableland, and to report in what particular the route they may propose differs from that upon which I am at present engaged in making a trial survey, I now have the honor to report that, having put myself in communication with the abovenamed gentlemen, and by appointment met collectively at the School of Arts, in Kempsey, on the 11th September last, at a meeting of the Railway League, of which they are prominent members, after my explanation to them of the route I am following up to Fiveday Creek, a resolution was unanimously passed, "That the league, having heard Mr. Waddington's explanation of the line to be followed by him in his survey, desire to express their satisfaction with the same they are, however, desirous of affording information of the country beyond Five-day, and request that the surveyors at the other and he instructed to make the readless in a surveyors at the other and he instructed to make the readless in a surveyor at the other and he instructed to make the readless in a surveyor at the start of the surveyors at the other and he instructed to make the readless in a surveyor at the start of the surveyors at the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of the surveyor at the start of that the surveyors at the other end be instructed to place themselves in communication with the league."

The aforementioned gentlemen promised to communicate with me again to appoint a meeting with the surveyors at the Armidale end of the line, for the purpose of pointing out the direction the line should take in their opinion beyond Five-day Creek to Armidale.

Not having heard anything further from them, I felt it my duty not to delay my report any longer.

L. J. WADDINGTON.

No. 53.

Mr. Waddington to The Engineer-in-Chief.

Sir, Kempsey, 1 January, 1884. I have the honor to report progress made with trial survey from Armidale to Trial Bay as

During the month 8 miles of traverse lines have been cut and fixed, 3 miles of which includes a deviation, which I thought most desirable to make, as thereby will avoid heavy earthworks, bridge openings, and expensive culverts, although a little higher altitude is attained and a slight increase in length of the centre line. This now brings the centre line staked out up to 30 miles.

The country gone through is very broken and difficult, through dense mixed forest trees with patches ergrowth. The surface soil is clayey, very poor and useless, producing naturally only the dwarf of undergrowth.

grass-tree generally.

L. J. WADDINGTON.

No. 54.

Mr. Harwood to The Engineer-in-Chief.

Railway Survey Camp, Styx River, 1 January, 1884. I have the honor to report progress made with the trial survey, Armidale to Trial Bay, as Sir.

The traverse and levelling has been continued from 42 miles 60 chains, and completed to 48 miles

From 42 miles 60 chains the traverse runs in E.N.E. direction, crossing the Armidale and Grafton Road near the 38-mile tree and the Oakey River; about 30 chains above the said road ford; from the latter point the traverse takes an E.S.E. course to a saddle in the divide between the Oakey and Styx Rivers.

On exploring a portion of the divide between the Styx River and George's Creek, I find it to be

very rough, densely timbered, with patches of very thick scrub along the sides. As yet I have not been able to find out how Mr. Turner purposed to cross this range (700 feet above the level of the Styx River); the only trace left of his flying survey being the track made for his pack horses.

I am, &c., HAMILTON HARWOOD.

No. 55.

Mr. Harwood to The Engineer-in-Chief.

Railway Survey Camp, Styx River, via Armidale, 10 January, 1884. With reference to the trial survey, Armidale to Trial Bay, I have the honor to report that, on examining that portion of Mr. Turner's suggested route between the summit of the Oakey and Styx Rivers divide and the latter river, I found that it could not be used for a line of railway. The ground falls too quickly towards the river; and as there is a high spur on the north and south side of the gully, mentioned in his description of route, the distance cannot be lengthened and the gradient reduced.

I then started a traverse from point A, shown in accompanying tracing, over an approximate 1 in 33 grade line, crossing the river as high as possible, and continuing it along the south side for 2 miles over very rough side-lying ground, the range on either side gradually closing in; high spurs and deep guilies had to be crossed every few chains. I saw that it was impossible to do any good in this direction,

so abandoned it.

From what I have seen of the country, I do not think that a practicable line can be found by way of the Styx River and the head of George's Creek. The latter is a very great obstacle. It runs through a valley whose side in many places is almost perpendicular for several hundred feet; this is near the head of it. What the valley is like lower down I am unable to inform you.

I purpose riding over to Mr. Mowle's selection, near Diamond Flat, in order to get all the information I can about this country; he has been living here for the last forty years, and was, I believe, employed with Mr. Turner's party.

I am, &c.,

HAMILTON HARWOOD.

No. 56.

The Assistant Engineer for Trial Surveys to Mr. Harwood.

Mr. Harwood. From your report, dated the 10th instant, it appears that the portion of the route proposed for a line of railway between Armidale and Trial Bay, which was to follow the direction of the Styx River and George's Creek, is impracticable for railway purposes.

Procure all the information you can from local residents as to any other line of country they may suggest as likely to be suitable for making the descent from the tableland, and examine and report on whatever proposals may be made, in order that a determination may be come to as to the utility or other-

wise of continuing this survey.

HERBERT PALMER.

No. 57.

The Assistant Engineer for Trial Surveys to Mr. Waddington.

Mr. Waddington, As your services are to be dispensed with at the end of the present month, it will be necessary for you to so arrange your field work that you may plot the plan and section of the entire length surveyed, and to hand over these documents at this office with the book of reference, and all field and level books, district plans, &c., on the 31st instant.

HERBERT PALMER.

No. 58.

Telegram from Mr. O. O. Dangar to Mr. R. B. Smith, M.P.

Behalf Railway League and inhabitants, respectfully urge strongest remonstrances to disbandment railway survey party from Trial Bay until sections have been taken from Dulkanguy Mountain to Gillstreet, East Kempsey, via Old Sheep-station, through Inches' and Onions' Grants route. Now surveying too far south. Is tableland party also disbanding?

O. O. DANGAR & OTHERS.

Will Engineer-in-Chief for Railways report to me upon this matter, and inform me what has been -F.A.W., 23/1/84. Mr. Palmer.—W.H.Q., 31/1/84.

The stoppage of the survey at the Trial Bay end is only a temporary one, the surveyor having been recalled on-account of the very unsatisfactory rate of progress made. After the plans of so much of the survey as has been completed by this surveyor have been examined, another surveyor will be sent to continue The survey party on the tableland has not been disbanded.— J.W., 4/2/84. Under Secretary, B.C., 4 February, 1884. the survey with the least possible delay. H.P., 1/2/84. The Engineer-in-Chief.

No. 59.

The Under Secretary to Mr. R. B. Smith, M.P.

Department of Public Works, Sydney, 11 February, 1884. Sir, Referring to the telegram forwarded by you from Mr. O. O. Dangar, respecting the abandonment of the railway trial survey from Trial Bay to Kempsey, I am directed to inform you that, from a report which has been received from the Engineer-in-Chief for Railways, it appears that the stoppage of the survey at the Trial Bay end is only of a temporary nature, the surveyor in charge having made unsatisfactory progress with the work; and after the examination of the plans of so much of the survey as has already been made, another surveyor will be sent to complete the work with the least possible delay.

I am to add that the survey party on the tableland has not been disbanded.

I have, &c., JOHN RAE.

No. 60.

Mr. H. Harwood to The Engineer-in-Chief.

Railway Survey Camp, Oakey River, 31 January, 1884. With reference to the trial survey, Armidale to Trial Bay, I have the honor to report, in accordance with the instructions contained in memo. 84-13, that a flying camp was taken to Jeogla, on the Kempsey and Armidale Road, and the country between there and George's Creek examined. Mr. Frizelle, a resident of over twenty years on the above station, showed me the best line of country he could suggest, and afterwards rode along the top of the divide between the Styx and George's Creeks waters, towards my old camp on the former river, thus connecting with my previous explorations. I also rode along the road towards Kempsey as far as the foot of the Big Hill at George's Creek, taking aneroid readings at known distances. These are given on the accompanying tracing, a glance at which will show the difficult nature of the country.

I have not been able to find a line of country that could be used for railway purposes, and as my explorations have extended from the tableland at the heads of the Styx and George's Creek to the Kempsey Road, a distance running north and south of about 20 miles, it would be useless to try to find a route elsewhere. My reason for coming to this conclusion is, that the tableland to the north of the Styx and George's Creek, has for its eastern boundary perpendicular cliffs, the head of the Bellinger River being directly underneath, and south of the Kempsey Road a distance could not be obtained sufficient to meet the fall of 2,400 feet. I have, &c.,

HAMILTON HARWOOD.

Mr. Palmer.—J.W., 4/2/84. It is evident, I think, from this report, and from the results of the trial surveys so far made from Armidale towards Trial Bay, that there is no practicable route for railway construction in this direction, and I would suggest that the trial survey be discontinued.—H.P., 5/2/84. The Engineer-in-Chief. Approved.—J.W., 11/2/84. Mr. Palmer.—W.H.Q., 12/2/84. Mr. Harwood has been instructed to remove with his party to Narrabri to commence a trial survey thence to Walgett. H.P., 13/2/84.

No. 61.

The Engineer-in-Chief to The Secretary for Public Works. Minute Paper:

Subject :- Discontinuance of trial survey for railway, Armidale to Trial Bay:

Department of Public Works, Railway Branch, Engineer-in-Chief's Office, Sydney, 11 February, 1884. REFERRING to my B.C. of 4th instant, in reply to your inquiry of 23rd ultimo, re telegram from Mr. R. B. Smith, M.P., on the subject of the alleged disbandment of the Armidale to Trial Bay railway trial survey party, I have the honor to submit that, since receiving the report of the surveyor in charge of this survey, I consider it desirable to abandon it altogether, there being no practicable route for a railway line between the two places.

After describing the route taken, in company with a Mr. Frizelle (a twenty years resident of the district), over the country between the Styx and George's Creek waters, to connect with his previous explorations, and along the road towards Kempsey as far as the foot of the Big Hill, at George's Creek, the surveyor reports that he has "not been able to find a line of country that could be used for railway purposes," and that, as his explorations "have extended from the tableland at the heads of the Styx and George's Creek to the Kempsey Road, a distance running north and south of about 20 miles; it would be useless to try to find a route elsewhere."

His reason for coming to this conclusion is, "that the tableland to the south of the Styx and George's Creek has for its eastern boundary perpendicular cliffs, the head of the Bellinger River being directly underneath, and south of the Kempsey Road a distance could not be obtained sufficient to meet the fall of 2,400 feet."

JOHN WHITTON.

Submitted.—J.R., 15/2/84. Let further action is taken.—F.A.W., 15/2/84. Let copy of this minute be sent to Mr. R. B. Smith before any

No. 62.

The Under Secretary to Mr. R. B. Smith, M.P.

Department of Public Works, Sydney, 18 February, 1884. Referring to my letter to you of the 11th instant, respecting railway trial survey from Armidale to Trial Bay, I am now directed to enclose for your information a copy of a minute of the Engineer-in-Chief for Railways recommending the abandonment of the survey in question.

I have, &c. JOHN RAE.

No. 63.

Mr. Waddington to The Engineer-in-Chief.

Sir, Kempsey, 1 February, 1884. I have the honor to report progress made with trial survey from Armidale to Trial Bay, as

In consequence of the continuous bush fires raging along and on both sides of the direction of the line it has been impossible to make fair progress.

The centre line is pegged out and completed up to 31 miles; all straights and curves have been set

out with the theodolite, and all pegs spotted.

Pegs 2" x 2" have been driven in the ground 5 chains apart on the straight, and 2 chains apart on the curves. Tangents are indicated by three pegs, and the intersections by a 4" x 4" peg, with a half-inch auger-hole on top at the true intersection point.

Pointed pegs are driven in the ground I chain beyond each intersection, indicating the direction of the traverse lines, with ditches dug close to and on the line of direction.

Triangular ditches are also cut at the intersection pegs. Levels on centre line are taken at every chain, and at shorter distances where sudden changes of the ground occur.

Cross section levels from 2 to 5 chains apart on centre line are taken where necessary.

Good substantial B. M.s, with cut letters and figures, have been established half a mile apart on trees through forest land, and on posts sunk in the ground through scrub land. 853-C

Pegs

Pegs on centre line painted red; intersection pegs painted white. Trees are well blazed on either side of the centre line. Surveys are made of all creeks, swamps, roads, fences, &c., within 5 chains on either side of the centre line.

Finished plans of the route, 10 chains to an inch, and longitudinal sections 10 chains to an inch. horizontal, and 100 feet to an inch vertical, showing proposed grades, bridges, flood openings, culverts, &c., have been made in the field.

Accompanying this report, I have the honor of delivering up in good order and condition as

follows:

Two sheets of finished plans of surveyed line of railway. longitudinal sections of do. Two county plans and references thereto. Four sundry tracings, tracing paper.
Two field-books of surveyed line of railway. Three longitudinal level books of Three cross-section level books of One check level book.

L. J. WADDINGTON.

No. 64.

The Assistant Engineer for Trial Surveys to Mr. Harwood.

Mr. Harwood,

From your last report it would appear that it will be useless to continue the Armidale and Trial

Bay survey any further in its present direction.

I have not yet received definite instructions to abandon the survey, so until you receive further directions you may finish the plan and survey of all surveys completed from Armidale towards the coast, and may hold yourself in readiness to remove your party to Armidale.

HERBERT PALMER.

No. 65.

The Assistant Engineer for Trial Surveys to Mr. Harwood.

11 February, 1884. Mr. Harwood,

On completing the plan and section of so much of the Armidale and Trial Bay survey as you have finished you may forward them to this office; and as it appears from your last report that it would be useless to continue this survey any further, you may remove with your party to Armidale, and proceed by rail to Narrabri, to commence a trial survey for the continuation of the North-western Railway thence to Walgett

On reporting by what date you will reach Walgett I will forward to you there plans of the district

which will be of service to you in selecting the route for trial survey.

HERBERT PALMER.

No. 66.

Mr. Harwood to The Engineer-in-Chief.

Railway Survey Camp, Oakey Creek, 14 February, 1884. Sir, I have the honor to report that, in accordance with the instructions contained in memo. 84/42, the plan, section, field and level books-of the completed portion of the trial survey, Armidale to Trial Bay (Armidale end), have been forwarded to the office by the same post under separate covers.

I also beg to inform you that I expect to reach Walgett about the 22nd proximo.

I am, &c., HAMILTON T. HARWOOD.

Mr. Palmer.—W.H.Q., 19/2/84. Plan, section, and field-books of Armidale and Trial Bay survey received, and plans and instructions for Narrabri and Walgett survey forwarded to Mr. Harwood to Narrabri.—H.P., 20/2/84.

[Two plans]

Sydney: Thomas Richards, Government Printer.

ARMIDALE, SURVEY ARMIDALE,

4.000 Feet abore Sea Level ARMIDALE

Sig 853.

Length of about 52 Miles between D and F (unsurreyed) through which a fairly practicable route might be obtained

Kempsey

Section of Length Surveyed between Kempsey and Trial Bay.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY TO INVERELL.

(PAPERS RESPECTING PRACTICABILITY OF.)

Ordered by the Legislative Assembly to be printed, 15 January, 1884.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated the 4th December, 1883, That there be laid upon the Table of this House,—

- "Copies of all reports, minutes, plans, surveys, petitions, letters, papers,
- "and other documents in reference to the practicability of constructing a
- "Railway between Uralla or Kentucky and Inverell, and Mother-of-Ducks
- "and Inverell; more particularly the report of Mr. Hogg, or any other
- "engineer upon this subject."

(Mr. Proctor.)

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RAILWAY. TO INVERELL.

No. 1.

Minute from Secretary for Public Works.

Railway from Mother of Ducks to Inverell.

A DEPUTATION, consisting of Messrs. Proctor (M.P)., Doherty (Stannifer), and Moore (Armidale), waited upon me to-day to ask that a survey might be made for a line from Mother of Ducks, on the extension from Armidale to Glen Innes, to Inverell, via Tingha and Stannifer. The line if taken in this way would be 43 miles in length, but if it were taken from Glen Innes to Inverell the distance would be from Mother of Ducks to Inverell 76 miles, and would consequently cause a much longer rail journey from Inverell to Newcastle.

Inverell is an important district, and they asked that a survey of the line might be made before any definite promise was given to the deputation, which they understood was to wait upon the Minister

early to urge the construction of the line from Glen Innes.

I informed the deputation that owing to the destruction of plans in the late Garden Palace fire the services of the surveyors were so taken up in replacing the work destroyed that at the present time no surveyor could be spared to make a trial survey of the proposed route from Mother of Ducks to Inverell. I promised to give the matter every consideration before consenting to any request that the deputation from Glen Innes might make. I would give no hasty decision; I had to submit a comprehensive railway scheme to the ensuing Parliament, and, if possible, would get a trial survey made of the route they advocated to Inverell.

Railways.—J.R., B.C., 9/7/83.

F.A.W., 6/7/83.

Minute of Engineer-in-Chief to Secretary for Public Works.

Subject: - Railway trial survey from Armidale to Inverell, Great Northern Railway. - Petition, deputation, &c.

Department of Public Works, Railway Branch,

Engineer-in-Chief's Office, Sydney, 17 July, 1883.

In reference to the petition presented to the Legislative Assembly on the 18th January last, from residents of Inverell, &c., and to the request recently preferred to the Minister by a deputation from Armidale, on the subject of connecting the Inverell District by a branch line with the Great Northern Railway, &c., &c.,—I have the honor to enclose a tracing from the map of the Colony, from which it will be seen that the junction with the Great Northern Railway, as proposed in the petition, viz., at Guyra (or Mother of Ducks) is at an elevation of 4,330 feet alvel, giving an ascent from Inverell of 2,380 feet, while the ascent from Inverell to Uralla is 1,385 feet only.

It would therefore appear that the most practicable route would be found in the latter direction, inasmuch as all traffic per rail from Newcastle to Inverell, and vice versa, must be carried to an extra elevation of 1,000 feet (by passing through Armidale and the Mother of Ducks) instead of taking advantage of the fall of the water from Uralla.

For the Engineer-in-Chief, W. H. QUÓDLING.

Inform Mr. Proctor, M.P., and ask him to see me on the subject.— Submitted.—J.R., 18/7/83. F.A.W., 23/7/83.

[Enclosure to No. 1.]

The Under Secretary for Public Works to W. C. Proctor, Esq., M.P.

Sir,

Department of Public Works, Sydney, 24 July, 1883.

Referring to the deputation introduced by you on the 6th instant, requesting that a Railway trial survey be made from Armidale to Inverell, I am directed to inform you it appears from a report which has been received from the Engineer-in-Chief for Railways that the point of junction proposed on the Great Northern Railway, viz., Guyra or Mother of Ducks, is at an elevation of 4,330 feet above sea level, giving an ascent from Inverell of 2,380 feet, whereas from Inverell to Uralla the ascent is 1.385 feet only.

is at an elevation of 4,330 feet above sea level, giving an ascent from little 2,355 feet only.

It would therefore appear that the most practicable route would be found in the latter direction, inasmuch as all traffic by rail from Newcastle to Inverell and vice versá must be carried to an extra elevation of 1,000 feet (by passing through Armidale and the Mother of Ducks), instead of taking advantage of the fall of the land from Uralla.

I am to add however that the Secretary for Public Works will be glad to see you at your earliest convenience on the subject.

JOHN RAE.

Minutes on Railway from Armidale to Inverell.

I should like the country between Uralla and Inverell inspected and reported upon.—F.A.W., 10/8/83. Mr. Palmer. W.H.Q., 13/8/83. I have instructed Mr. Hogg to proceed to Uralla early next week to examine and report upon the country between Uralla and Glen Innes. While in the district, I think it would be well for him to examine the country between Inverell and the Mother of Ducks Lagoon, so that sketches may be prepared of all proposed routes for trial survey.—H.P., 17/8/83. The Engineer-in-Chief. Approved. Probably this exploration should be made by way of Bundarra. Mr. Palmer.—J.W., per W.H.Q. Mr. Hogg will leave for Uralla on Friday next, the 24th instant.—H.P., 22/8/83.

No. 2.

H. Wyndham, Esq., to The Secretary for Public Works.

"Petty's Family Hotel," Church Hill, Sydney, 20 July, 1883. As the question at which point—Glen Innes or Mother of Ducks—the proposed railway to Inverell shall leave the Great Northern Line is now being pressed upon your attention, I beg that you will allow me, as one long resident in the district of Inverell and well acquainted with both routes, to state a few reasons in favour of the line being from Mother of Ducks:

1st. The line from Mother of Ducks to Inverell can be constructed cheaper—that is, for less money, on the whole—than that from Glen Innes to Inverell, because the formation of the country west of the tableland is that of long spurs, with deep valleys between, running generally north-west. These run down from Mother of Ducks, close to Inverell, and can be followed pretty straight, so that an elevation once obtained need not be lost; and there are no creeks of any consequence to cross, and a great part of the line will be nearly a dead level. Whereas a line from Glen Innes to Inverell must of necessity cross the spurs (and notably one very high one, called Waterloo Range) and valleys, and several considerable creeks, particularly Swan Brook, which is crossed three times by the proposed line, and which in times of flood runs both wide and deep, with a very strong current.

2nd. The line to Mother of Ducks will junction with the Great Northern some 35 miles nearer

to Newcastle, so saving about that much haulage.

It is claimed for the Glen Innes line,-

1st. That it will be an instalment of the railway to Grafton.

2nd. That it will be a direct route to Queensland.

As I cannot believe that any Government will ever be insane enough to construct a railway from Glen Innes to Grafton, I dismiss the first, merely remarking that if it ever should be made no wool would be sent that way, and no passengers would go from New England to Sydney except such as might desire the agreeable change which a coasting steamer usually affords.

As to the second—that it would be a direct route to Queensland, where it is expected a market will be found for agricultural produce—it is certainly desirable that every possible market should be found for the latter; but Brisbane is already dangerously near the rich Inverell district, and a direct railway might have the effect of diverting all the produce, including wool, across the Border.

I have, &c.

HUGH WYNDHAM.

Please put with other papers re trial survey from Mother of Ducks to Inverell.—F.A.W., 25/7/83.

No. 3.

Extract from M.P., 83-3,426.

I wish also, when there is an officer to spare, that the country lying between the Mother of Ducks, Great Northern Railway, and the town of Inverell, and between Uralla and the town of Inverell, may be carefully examined and reported upon. F.A.W., 18/8/83.

Mr. Palmer.—W.H.Q., 21/8/83. Mr. Hogg is to leave for Uralla on Friday next, the 24th inst., to examine and report upon these proposed routes.—H.P., 22/8/83.

No. 4.

Report by Mr. Surveyor Hogg.

Exploration—Mother of Ducks to Inverell via Tingha.

STARTING from the Great Northern Railway at about mileage 287 miles 40 chains, at an elevation of 4,330 starting from feet, the line examined runs in a north-westerly direction, crossing the head of Sandy Creek and falling to G.N.R. Olera Creek, crossing it near the Olera head station; thence rising to the range, which is very flat, that divides the Olera Creek waters from Mordaunt Creek, the line falls gently, passing through extremely good agricultural country to Mordaunt Creek; thence, via New Valley, to Tingha township, through which Tingha. it would pass; thence crossing Cope's Creek to the Gilgai; and thence to a point opposite and about a mile from the town of Inverell, terminating on the west side of the Macintyre River.

Macinty

There would be no necessity to enter Inverell, and thus a saving of one if not two bridges over the Macintyre River would be avoided. The present road bridge over that river is about 400 feet long, with Bridges. five spans, and 260 feet of flood approaches. The river floods into the town.

It will be seen that on the extension of any line from Glen Innes this river would have to be

Very good timber can be obtained at several points on this line.

Timber.

Ballast is procurable at several points on the line.

About 50 per cent. of good agricultural land, and the remainder fair sheep country and good tin quality of the land. bearing country.

MILEAGE

Mileage calculated from Newcastle.

Names.	. Mileage:	Barometer— Reduced level.	Probable grade.	Remarks.
	m. ch.			
function with Great Northern Railway, near	287 40	4,330		
head of Sandy Creek.	2 90 0	4,210	1 90	
	291 0	4,270	1 90 88 1 53 1 40 1	
ange between Sandy and Olera Creeks	292 0	4,180	<u> </u>	
lera Creek, near Olera Station	294 0 3 00 0	3,780	4,0	0 - 90 %
(Range between Olera and Limestone Creeks	301 ½	3,490 3,750	100	One 26-ft. opening.
can be greatly improved by keeping west).	304 O	3,450	·····	
g y y y y y	305 0	3,410	$\frac{\frac{1}{40}}{\frac{1}{40}}$	
•	308 0	3,380	Level.	,
	309 0	3,310	1 2 2	
imestone Creek	310 0	3,200	$\begin{array}{c} \frac{1}{777} \\ \frac{1}{50} \end{array}$	Two 26-ft. openings.
	$310 \frac{1}{2}$	3,390		
and and Const	311 0	3,310	1 0 4 0 6	
ordaunt Creek	311 40	3,240		One 20-ft. opening.
ampit Guller	312 40	3,330		
uwpit Gullyuall spur	313 40	3,210	1 5 0	A culvert.
ew Valley Creek	315 0	3,010	******	One 20-ft. opening.
on tubey orong in	315 40	3,100	1	One 20-10. opening.
	315 60	3,160	1	Heavy works, but I think no tunn
	316 0	3,110	1 0	This cannot be avoided, as No
ange between New Valley and Cope's Creek	317 0	2,960	1 1	Valley runs almost flat for seven
•	318 0	2,840	1 50	miles.
	319 0	2,730	1 40 1 40 1 40 1 40 1 40 1 50 1 50	
ımmer Hill Creek, a branch of Cope's Creek	320 0	2,610	1 5 0	Two 26-ft. openings.
2/- C11-	321 0	2,590	250	W.C., 10-ft. opening.
ond's Gully	323 0 324 0	2,460	$\begin{array}{c} \frac{1}{40} \\ \frac{1}{52} \end{array}$	One 26-ft. opening.
ope's Creek		2,360	52	Tingha.
,	327 0	2,560	1	150-ft. openings—floods to 10 feet.
ange between Cope's Creek & Macintyre River	328 0	2,490	777 177 188	
he Gilgai	332 0	2,250	17	
	338. 0	2,000	$\frac{88}{120}$	Inverell, on west of the Macintyre Rive
		· ·	120	,
•	Average of	grades:-		
From level to 1 in 100	· ·			10 11
	•••	•••	•	13 miles.
" 1 in 100 to 1 in 50	•••	•••	• • • • • • • • • • • • • • • • • • • •	18 "
" 1 in 50 to 1 in 40	•••	··· ·	• • • • • • • • • • • • • • • • • • • •	20 "
•				
	${f Total}$			51 "
Probable earthworks.			70	7 77
				obable waterways.
35,000 cubic yards per mile.		358 feet	of tim	per openings, crossing the head
Total, 1,785,000 cubic yards.	•	of eight cr	eeks.	1 8,
1.7		U		
About one-half the above cuttings	would be			
About one-half the above cuttings rough granite and trap, the remainder				•
rough granite and trap, the remainder				
rough granite and trap, the remainder and decomposed granite.	hard earth	stances, &c.	:	
rough granite and trap, the remainder ad decomposed granite.	hard earth mparative dis	stances, &c.	:	201
rough granite and trap, the remainder ad decomposed granite. Co Newcastle to Inverell via	hard earth mparative dis Uralla		: 	321 miles.
rough granite and trap, the remainder ad decomposed granite. Co Newcastle to Inverell via ,, ,, via	hard earth mparative dis Uralla Mother of Du		: 	338 "
rough granite and trap, the remainder d decomposed granite. Co Newcastle to Inverell via ,, via ,, via ,, via	hard earth mparative dis Uralla Mother of Du Glen Innes		:— 	33 8 ,, 372 ,,
rough granite and trap, the remainder d decomposed granite. Co Newcastle to Inverell via ,,,, via ,,, via Rise, Inverell to Uralla	hard earth mparative dis Uralla Mother of Du Glen Innes	icks	•,••	338 ,, 372 ,, 1,370 feet.
rough granite and trap, the remainder d decomposed granite. Co Newcastle to Inverell via ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	hard earth mparative dis Uralla Mother of Du Glen Innes f Ducks	icks	•••	33 8 ,, 372 ,,
rough granite and trap, the remainder d decomposed granite. Co Newcastle to Inverell via ,,,, via ,,, via Rise, Inverell to Uralla	hard earth mparative dis Uralla Mother of Du Glen Innes f Ducks	icks		338 ,, 372 ,, 1,370 feet.
rough granite and trap, the remainder d decomposed granite. Co Newcastle to Inverell via ,,,,,, via Rise, Inverell to Uralla ,,,,,, to Glen Innerell ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	hard earth mparative dis Uralla Mother of Du Glen Innes f Ducks	icks		338 ,, 372 ,, 1,370 feet. 2,350 ,,
rough granite and trap, the remainder ad decomposed granite. Co Newcastle to Inverell via "" via Rise, Inverell to Uralla "" to Mother o "" to Glen Inno Amount of line to be construct	hard earth mparative dis Uralla Mother of Du Glen Innes f Ducks es ed—	icks		338 ,, 372 ,, 1,370 feet. 2,350 ,, 1,543 ,,
rough granite and trap, the remainder ad decomposed granite. Co Newcastle to Inverell via """ via Rise, Inverell to Uralla """ to Mother o """ to Glen Inn Amount of line to be construct If taken from Uralla	hard earth mparative dis Uralla Mother of Du Glen Innes f Ducks es ed—	icks		338 ,, 372 ,, 1,370 feet. 2,350 ,, 1,543 ,,
rough granite and trap, the remainder ad decomposed granite. Co Newcastle to Inverell via "" via Rise, Inverell to Uralla "" to Mother o "" to Glen Inno Amount of line to be construct If taken from Uralla "" Mother of D	hard earth mparative dis Uralla Mother of Du Glen Innes f Ducks es ed— ucks			338 ,, 372 ,, 1,370 feet. 2,350 ,, 1,543 ,, 75 miles. 51 ,,
rough granite and trap, the remainder and decomposed granite. Co Newcastle to Inverell via """ via Rise, Inverell to Uralla """ to Mother o """ to Glen Inn Amount of line to be construct If taken from Uralla """ Mother of D """ Glen Innes	hard earth mparative dis Uralla Mother of Du Glen Innes f Ducks es ed— ucks	icks		338 ,, 372 ,, 1,370 feet. 2,350 ,, 1,543 ,, 75 miles.
rough granite and trap, the remainder and decomposed granite. Co Newcastle to Inverell via """ via Rise, Inverell to Uralla """ to Mother o """ to Glen Inn Amount of line to be construct If taken from Uralla """ Mother of D """ Glen Innes	hard earth mparative dis Uralla Mother of Du Glen Innes f Ducks es ed— ucks			338 ,, 372 ,, 1,370 feet 2,350 ,, 1,543 ,, 75 miles 51 ,,
rough granite and trap, the remainder and decomposed granite. Co Newcastle to Inverell via """ via Rise, Inverell to Uralla """ to Mother o """ to Glen Inn Amount of line to be construct If taken from Uralla """ Mother of D """ Glen Innes Present cartage from and to In	hard earth mparative dis Uralla Mother of Du Glen Innes f Ducks es ed— ucks verell—			338 ,, 372 ,, 1,370 feet 2,350 ,, 1,543 ,, 75 miles 51 ,, 46 ,,
rough granite and trap, the remainder and decomposed granite. Coo Newcastle to Inverell via via via Rise, Inverell to Uralla via to Mother o no not of line to be construct of taken from Uralla not not of line to be construct of taken from Uralla not not not not not not not not not not	hard earth mparative dis Uralla Mother of Du Glen Innes f Ducks es ed— ucks verell— gha, and Ura	ncks		338 ,, 372 ,, 1,370 feet 2,350 ,, 1,543 ,, 75 miles 51 ,, 46 ,, 90 per cent.
rough granite and trap, the remainder ad decomposed granite. Co Newcastle to Inverell via """ via Rise, Inverell to Uralla """ to Mother o """ to Glen Inne Amount of line to be construct If taken from Uralla """ Mother of D """ Glen Innes Present cartage from and to In Via Mother of Ducks, Tin Via Glen Innes	mparative dis Uralla Mother of Du Glen Innes f Ducks es ed— verell— gha, and Ural	ncks		338 ,, 372 ,, 1,370 feet 2,350 ,, 1,543 ,, 75 miles 51 ,, 46 ,, 90 per cent 10 ,,
rough granite and trap, the remainder d decomposed granite. Co Newcastle to Inverell via " via Rise, Inverell to Uralla " to Mother o " to Glen Inne Amount of line to be construct If taken from Uralla " Mother of D " Glen Innes Present cartage from and to In Via Mother of Ducks, Tin Via Glen Innes A coach runs from Inverell to	mparative dis Uralla Mother of Du Glen Innes f Ducks es ed— ucks verell— gha, and Ura the Mother of	ncks		338 ,, 372 ,, 1,370 feet 2,350 ,, 1,543 ,, 75 miles 51 ,, 46 ,, 90 per cent 10 ,,
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rough granite and trap, the remainder d decomposed granite. Co Newcastle to Inverell via " via Rise, Inverell to Uralla " to Mother o " to Glen Inne Amount of line to be construct If taken from Uralla " Mother of D " Glen Innes Present cartage from and to In Via Mother of Ducks, Tin Via Glen Innes	mparative dis Uralla Mother of Du Glen Innes f Ducks es ed— ucks verell— gha, and Ura the Mother of	ncks	 	338 ,, 372 ,, 1,370 feet 2,350 ,, 1,543 ,, 75 miles 51 ,, 46 ,, 90 per cent 10 ,,

No. 5.

Seen.=-H.P., 1/10/83.

Mr. Palmer.—J.W., 13/9/83.

Report by Mr. Surveyor Hogg.

Exploration—Uralla to Inverell.

The line examined would start from a point at about 246 mileage, on the north side of Uralla, and rising to the Brisbane Range; would from thence fall by a fair grade to the Rocky or Bundarra River, where its width is about 330 feet. Thence over a spur to conditional purchase 112, and again falling to the Bundarra;

crosses that river at the foot of Yarrowick Mountain. The line would then rise to a saddle behind Woodstock homestead, but should the grade be found to be too severe a westerly course can be taken round Mount Brown. Thence crossing Sandy Creek and Smith's Swamp, rough ridgy country is entered, and so continues to 274 miles. Passing Abington Station the line crosses Laura and Clerk's Creeks, leaving Bundarra about 2½ miles to the left. Thence to the old survey, at about 47 miles from Uralla. I did not examine the country beyond this point, as it has been already surveyed; but I am aware the line crosses King's Gap Range, at about an altitude of 2,800 feet; and thence to Inverell. Timber.

The timber is mostly of a poor quality, some stringy-bark being found on the hills. Ballast is procurable in the Valley of the Bundarra and at several other points on the line. About 15 per cent. fair agricultural, the remainder poor grazing land.

Ballast. Quality of the land. Present cartage.

Fully 70 per cent. tair agricultural, the remainder poor grazing land.

Fully 70 per cent. of the present cartage from and to Inverell to the east passes through Bundarra, Present ca as well as the greater portion of tin from Tingha mines.

By starting from Kentucky instead of Uralla I imagine a good line could be got, and the Bundarra Kentucky. crossings avoided, while the saving in the through haulage would be about 3 miles, but the extra amount of construction about 2 miles.

Exploration—Uralla to Inverell, via Bundarra. Mileage calculated from Newcastle.

Names.	Mile	age.	Barometer— Reduced levels	Approx. Grade.	Rémarks.
Junction, North of Uralla Brisbane Range Rocky, or Bundarra River Conditional purchase 112 Morse's Creek Level country intervening. Bundarra River Saddle above "Woodstock" Haylockor Sandy Creek, conditional purchase 39 Smith's Swamp Ridgy land intervening. Basin Creek Level country intervening. 2-Mile Creek Abington Station Laura Creek Clark's Creek Junction with old survey, Tamworth to Inverell Not examined, as having been already surveyed:— Tingha Creek King's Gap Range. Cope's Creek Gilgai Inverell, on the west of the Macintyre River	246 248 252 254 260 263 266 271 273 276 278 284 287 293	0 40 40 0 0 0 0 0 0 0 0 0 0 0 0	feet. 3,370 3,580 3,140 3,330 2,600 2,600 2,670 2,640 2,540 2,370 2,400 2,350 2,350 2,350 2,350 2,360 2,300 2,800 2,800 2,800 2,430 2,000		330 feet wide; floods to 20 feet; good rocky bottom. Two 26-feet openings. 350 feet wide; floods to 20 feet; good rocky bottom. Two 26 feet openings. One do do One do do One 8 foot culvert. 150 feet openings; floods 15 feet. do do do Two 26 feet openings; floods 18 feet. 150 feet openings; floods to 15 feet.

Average of grades :-

From level to 1 in 100,—28 miles. From 1 in 100 to 1 in 50,—29 miles. From 1 in 50 to 1 in 40,—18 miles.

 $Probable\ earthworks.$

Probable waterways.

40,000 cubic yards per mile. Total for 75 miles, 3,000,000 cubic yards. About one-half $(\frac{1}{2})$ the above cuttings would be through basalt, granite, and trap, and the remainder hard earth and decomposed granite.

Two bridges over the Bundarra River, 680 feet long together, but with no flood approaches. Nine creek crossings, 684 feet; seven openings, besides drains.

13 September, 1883.

CHARLES E. HOGG, Railway Surveyor.

Mr. Palmer.—J.W., 13/9/83. Seen.-H.P., 1/10/83.

No. 6.

Dr. F. H. Woods to The Engineer-in-Chief.

Dear Sir,

Reverting to the conversation I had with Mr. Quodling on Thursday last, re the Inverell Branch line, I may state that having lived here between twelve and thirteen years, and having ridden over every foot of the country, I am sure that a line can be formed from this place to Bundarra, keeping the left or southwest bank of the river at a cost not so much in advance of a first-class macadamised road. I enclose rough tracing showing my proposed route in red. You will see that it crosses the Rocky River (the head of the Bundarra) marked in blue, quite high up, where it is merely a creek easily spanned, by an ordinary timber opening, and it is not crossed again until you reach Bundarra. The route from here would be—leave the Great Northern Railway near the racecourse lagoon, cross R. River to Walker's old selection, thence to Balala by Js. Barndon's selection, thence keeping Mount Lookout to your left and the big range to your right Uralla, 26 September, 1883.

right straight to Bundarra over a slightly undulating country; there would be no heavy cuttings and no creeks of any size on this route, as you will see by the tracing all the big creeks run from the table-land down to the north-east bank of the river. You would have to run a segment of a circle from here to Balala, as shown on plan. This route is far and away the cheapest that can be found, though there are others which might save a mile or two at the outside, but the cuttings would be heavier and the bridging more extensive. My private opinion is the line ought to go to Kentucky, it being in a straight line from Bundarra vid Balala, shown on plan in dotted lines—Balala to here, 10 miles; Balala to Kentucky, about the same—thus saving haulage from Uralla to Kentucky, 10 miles and further. I believe whenever there is a line to the coast it will go from Kentucky through a complete gap in the Salisbury mountains to Walcha, distant about 18 or 20 miles (thus doing away with the absurd idea of a branch line from Walcha road) and thence vid Yarrowitch. Whenever you arrange for the surveyors to come here if you will request them to keep their own counsel as to their visit (I mention this because I know that an immense amount of private self interest will be brought to bear both in taking them through certain lands and keeping them off others) and refer them to me I will see that they have a disinterested person who knows every foot of the country as guide, and I shall be most happy to give them every information that lies in my power.

I have, &c.,

F. H. WOODS.

I may state that it is as a country doctor that I have gained my knowledge of the country.—F.H.W.

Ack. and thank Mr. Woods for his letter.—J.W., 1/10/83. Accordingly, 1/10/83.

Mr. W. H. Quodling to Dr. F. H. Woods.

Department of Public Works, Railway Branch,

Sir,

Engineer-in-Chief's Office, Sydney, 1 October, 1883.

In acknowledging the receipt of your letter of 26th ultimo, I am desired to tender you the thanks of the Engineer-in-Chief for the information you have so kindly supplied in regard to the possible routes for the Inverell branch railway.

I have, &c.,

W. H. QUODLING.

Mr. Palmer.—W.H.Q., 2/10/83.

From inquiries I have myself made in this district I believe that a better section would be obtained from Kentucky towards Bundarra than from Uralla, but this would be a matter for comparative surveys, when trial surveys from the Northern line in this locality to Inverell are authorized.

H.P., 3/10/83.

The Engineer-in-Chief to The Assistant Engineer-in-Charge of Trial Surveys.

This line should be surveyed before any decision be arrived at for a line from Inverell.

J.W., 5/10/83.

Mr. Palmer. Noted.—H.P., 5/10/83.

Sydney: Thomas Richards, Government Printer.—1884

[6d.]

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY LINE, GLEN INNES TO INVERELL.

(LETTERS, REPORTS, AND PAPERS RELATING TO SURVEY OF.)

Ordered by the Legislative Assembly to be printed, 8 May, 1884.

RETURN to an Order of the Honorable the Legislative Assembly of New South Wales, dated 13 February, 1884, presented to the Governor, praying that His Excellency will be pleased to cause to be laid upon the Table of this House,—

"Copies of all letters, reports, and other documents relating to the survey of the

"Railway Line from Glen Innes to Inverell."

(Mr. Murray.)

SCHEDULE.

	No. and Date.	From—to.	Subject.
$\begin{matrix} 1 \\ 2 \\ 3 \end{matrix}$	29 Aug., 1878 78/1,765.—28 Sept., 1878 81/1,012.—13 April, 1881	Mr. Francis to Engineer-in-Chief	Exploration of country, and suggesting route. Enclosing copy of resolutions passed at a meeting of residents of Inverell, and hoping something
· 4	81/1,065.—21 April, 1881	Mr. W. J. Fergusson, M.P., to Minister for Works	Will be done. Telegram—Railway Surveyor wanted also
5 6 7 8 9	81/1,085.—22 April, 1881 3 April, 1881 30 April, 1881 81/3,094.—20 Oct., 1881 22 Oct., 1881 81/2,302.—26 Oct., 1881	Under Secretary for Works to Mr. R. L. Murray, M.P. Under Secretary for Works to Mr. W. J. Fergusson, M.P. Engineer-in-Chief to Mr. Palmer, and reply	Minister's authority for survey. Requesting that surveyors may be sent. Minister has issued instructions for survey. Minister has issued instructions for survey. What surveyor can be spared? Mr. Carver to go. Instructions re survey.
11	1 Nov. 1881	Mr. Vine to Engineer-in-Chief.	Acknowledging receipt of instructions, &c. Monthly progress report,
12	2 Dec., 1881	Same to same	Monthly progress report.
13	31 Dec., 1881	Mr. Carver to Engineer-in-Chief	Monthly progress report.
14	3 Jan., 1882	Mr. Vine to Engineer-in-Chief	Monthly progress report.
15	82/1,757.— I May, 1882	Glen Innes Railway Conference to Minister for Works	Memorial presented by Messrs. See, Murray, &
	'		Fergusson, M's.P., in favour of line starting
10	0 T 1000	3.5 00.4	from Grafton, &c.
16	2 Jan., 1883		Monthly progress report.
17	1 Feb., 1883	Same to same	Monthly progress report.
18	1 Mar., 1883	Same to same	Monthly progress report.
19	31 Mar., 1883	Same to same	Monthly progress report.
. 20	83/2,464.—23 May, 1883	Mr. R. L. Murray, M.P., to Colonial Secretary	Urging survey of line, and asking information
21	29 May, 1883	Assistant Engineer for Trial Surveys to Mr. Harwood	Instructions re trial survey, plans, &c.
22	1 June, 1883	Mr. Harwood to Engineer-in-Chief	Reporting arrival, &c.
23	1 June, 1883	Mr. Stuart to Engineer-in-Chief	Reporting arrival, &c.
24	83/2,258.— 4 June, 1883	Mr. R. L. Murray, M.P., to Minister for Works	Asking information as to survey.
25	9 June, 1883	Engineer-in-Chief to Mr. R. L. Murray, M.P.	Surveyors employed; plan and section in 2 months.
26	30 June, 1883	Mr. Harwood to Engineer-in-Chief.	Monthly progress report.
27	30 June, 1883	Mr. Stuart to Engineer-in-Chief.	Monthly progress report.
28	12 July, 1883	Assistant Engineer for Trial Surveys to Mr. Stuart	Instructions re trial survey, plans, &c.
29	12 July, 1883	Assistant Engineer for Trial Surveys to Mr. Harwood	Instructions re survey.
30	83/2,956.—16 July, 1883	Mr. Harwood to Engineer-in-Chief	Plan will be completed shortly, &c.
31	83/2,991.—18 July, 1883	Mr. Stuart to Engineer-in-Chief	Field work completed; working at plans.
32	83/3,080.—25 July, 1883	Same to same	Forwarding plans; also Mr. Harwood's plans.
33	83/2,980.—24 July, 1883	Assistant Engineer for Trial Surveys to Engineer-in-Chief	Reporting completion of trial survey.
		Minister's Minute, and Memorandum from Mayor.	Re deputation about trial survey, &c.
		Inverell, &c.	The state of the s
34	31 July, 1883	Mr. Harwood to Engineer-in-Chief	Reporting that re-survey is completed.
35	1 Aug., 1005	Mr. Stuart to Engineer-in-Chief	Kanovina that no annexes is seen 1.1.1.1
36	27 Feb., 1884	Assistant Engineer for Trial Surveys to Engineer-in-	Extract from general report on Railway Trial
		Chief.	Surveys.

RAILWAY LINE, GLEN INNES TO INVERELL.

No. 1.

The Assistant Engineer for Trial Surveys to Mr. Francis.

Mr. Francis,

The Engineer-in-Chief wishes you to explore the country between Glen Innes and Inverell than the most feasible route for railway purposes. and thence to Warialda, and to report upon the most feasible route for railway purposes.

Before starting you are to communicate with Mr. Bawden, of Grafton, with reference to guides who are prepared to accompany you on this exploration.

HERBERT PALMER.

No. 2.

Mr. Francis to The Engineer-in-Chief for Railways.

Inverell, 28 September, 1878. I have the honor to report that in obedience to your instructions, dated August 29/78, I have examined the country between Glen Innes and Inverell for the purpose of discovering the best route for railway between these two places. The first route explored was suggested by Mr. M'Masters, of Wellingrove, and leaves Glen Innes in a direction about N.N.E. and follows the road to Clarevaulx by Dumaresque's for about 5 miles, then passing by or through the selections of Doolan, Clough, Ezzy, Delaney, Marshall, Sullivan, and Claffy, and intersects Mr. Stack's trial line from Inverell to Tenterfield, at an intersection numbered 162, about half-a-mile on the Glen Innes side of B. M. 24, and about 10 miles from Glen Innes from Glen Innes.

This route is even throughout its entire length (about 10 miles), there are no crossings on it, and it passes over first-class agricultural country.

If the remainder of the route to Inverell as surveyed by Mr. Stack is satisfactory, the only

objection to it is its great length.

With the view of shortening the distance, a second route, intersecting Mr. Stacks trial line from Inverell to Tenterfield, at an intersection No. 31 near B.M. 6, was examined. This route leaves Glen Innes in a direction about N.W. by W., and passes through Bugan's farm, about 7 miles from Glen Innes, then through the farms of O'Brien, M'Masters, and Bream, crossing Punch's Gully and the Waterloo Creek close by Kran's cultivated land, then by Cole's farm to the intersection with Mr. Stack's line.

The direct distance from Glen Innes to this intersection is about 13 miles, but the country would not admit of a direct route, and the distance would be increased by at least one-third, or say 4 miles by rounding spurs and heading gullies to obtain a practicable gradient. The route first examined is therefore

not only easier but shorter.

The third route examined was suggested by Mr. John Ross, of Balacklava, it leaves Glen Innes in a direction about west by the Inverell road, and crosses the Ferneabad Range at about 3 miles from Glen Innes, leaving the main road about half-a-mile on the right, passing through the selections of Offisty, O'Hara, Weir, Taylor, and M'Mullens, and crosses the Waterloo Range at M'Mullen's Gap, about 8 miles from Glen Innes; then down Boyd's Gully to the Waterloo Creek, passing through the selections of M'Intyre and Ross, then crossing the Waterloo Creek gets into the valley of the Swanbrook Creek, and follows the valley down to Inverell; or the survey may be made to close somewhere about B.M. 39, a few miles from Inverell on the survey from Inverell to Tenterfield. This route is nearly direct between Glen Innes and Inverell, and passes during its entire length over first-class agricultural land. The valley of the Swanbrook Creek consists of rich alluvial soil, and is capable of sustaining a large population. The the Swanbrook Creek consists of rich alluvial soil, and is capable of sustaining a large population. The only obstacle on the route is the Waterloo Range. A tunnel of from 12 to 15 chains in length would be necessary at M'Mullen's Gap, and by skirting the range on the left of Boyd's Gully, I think the descent to the Waterloo Creek may be made in about 4 miles, with a gradient of 1 in 40. The remainder of the route may be got over with easy gradients and flat curves. The distance from Glen Innes to Inverell by this route would be about 4 or 5 miles less than the distance by the main road. The advantages of this route over the other suggested routes are so manifest that I consider it the only route deserving of serious consideration. I have, &c. A. FRANCIS.

No. 3.

R. L. Murray, Esq., M.P., to The Minister for Works.

Construction of Railway to Inverell via Glen Innes.

Sir,

I have the honor to enclose herewith copy of certain resolutions passed at an influential meeting of the inhabitants of Inverell (the Mayor in the chair), and forwarded to me for presentation.

I trust that the Government will take these resolutions into their consideration, and see its way to do something in the matter part seesion.

I have, &c., R. L. MURRAY. do something in the matter next session.

B.C., 14/4/81.—J.R. Forward to Engineer-in-Chief. B.C., 15/4/81.—Under Secretary for Works. B.C., 29 April, 1881.—J.W., p. W.H.Q. B.C., 14/4/81.—J.R. Railways. J.W., 22/4/81. B.C., 3/5/81.—J.R.

Railway to Inverell.

AT a large and enthusiastic meeting held here (Inverell) on Saturday, the 2nd April, the following resolutions were carried

unanimously:—

1st. That it is desirable in the best interests of the Colony, that a railway should be constructed from the navigable waters of the Clarence District to the westward via Glen Innes, that route being the greatest benefit to the

greatest number.

2nd. That it would be a great national and profitable undertaking to commence forthwith the construction of a railway from Glen Innes to Inverell and westward, thus placing the important town of Inverell and others in the west within access of railway communication on completion of the Great Northern Railway to Glen Innes.

3rd. That this meeting express its strong condemnation of the conduct of the Government in leaving the line to Inverell out of the railway policy.

No. 4.

Telegram from W. J. Fergusson, Esq., M.P., to Minister for Works.

21 April, 1881.

Can one of the railway surveyors survey the line from Glen Innes to Inverell when finished with Grafton W. J. FERGUSSON,

Is there any objection to this being done?—J.L., 22/4/81. The objection. Shall I give instructions to have this done?—J.W., 22/4/81. The Engineer-in-Chief. Yes.—J.L., 22/4/81. Mr. Palmer.—W.H.Q., 28/4/81.

No. 5.

Telegram from R. L. Murray, Esq., M.P., to Minister for Works.

22 April, 1881. WILL you instruct surveyors to survey line from Glen Innes to Inverell before their return from Grafton? R. L. MURRAY,

May be forwarded to Engineer-in-Chief.—Ch. A. G., 24/4/81. See 81/1065. for Works.—W.H.Q., for E.-in-C., 28/4/81. Please return. Inform W. J. Fergu Under Secretary Inform W. J. Fergusson, Esq., M.P., and R. L. Murray, Esq., M.P.—30/4/81. Railways.—J.R., B.C., 30/4/81.

No. 6.

Under Secretary for Works to R. L. Murray, Esq., M.P.

Department of Public Works, Sydney, 30 April, 1881. I am directed to acknowledge the receipt of your telegram of the 22nd instant, and, in reply, to inform you that, in accordance with the request therein contained, the Secretary of Public Works has issued instructions for the carrying out of a trial survey for a railway line between Glen Innes and Inverell. JOHN RAE.

No. 7.

Under Secretary for Works to W. J. Fergusson, Esq., M.P.

Sir. Department of Public Works, Sydney, 30 April, 1881. In reply to your telegram of the 21st instant I am directed to inform you that, in compliance with the request therein contained, the Secretary of Public Works has issued instructions that a trial survey for a line of railway between Glen Innes and Inverell be carried out.

JOHN RAE.

No. 8.

The Engineer-in-Chief to Mr. Palmer.

Department of Public Works, Railway Branch, Engineer's Office, Sydney, 20 October, 1881. There is only one surveyor on the extension from Glen Innes to Inverell, and you say the survey will take five months to complete. Would it be advisable to put another surveyor on this length by appointing Mr. Hutchinson from Armidale, or do you think another surveyor can be spared to assist on this survey from some of the other lines, so that the survey can be completed earlier than stated.

I have instructed Carver and Hoyle to return to Sydney on completing at Tenterfield (about the end of this month). If you require another surveyor to be employed on the Glen Innes and Inverell survey, I think the best plan would be to counter-order Carver's return, and to send him to Inverell to work back to meet Vine, who is working from Glen Innes.—H.P., 20/10/81. The Engineer-in-Chief.

Yes, send Carver on the Inverell line, unless particularly wanted in Sydney, on working sections to Tenterfield. If this should be necessary some one else should be sent in his place.—J.W., 20/10/81. Mr. Palmer. Instructions sent to Mr. Carver.—H,P., 22/10/81.

No. 9.

The Assistant Engineer for Trial Surveys to Mr. Carver.

Mr. Carver

22 October, 1881.

As the trial survey between Glen Innes and Inverell must be completed with the utmost

despatch, I shall require you to take up a portion of the work.

On completing your field-work at Tenterfield, you can hand over all 'plans, books, &c., to Mr. Hoyle, who can bring them down to this office, and be careful that all the detail survey for the working plan, together with the necessary information for the Book of Reference to the end of the permanent staking at Tenterfield, is all shown perfectly clearly in your field books, so that Mr. Hoyle may have no difficulty in completing everything connected with the working plan on his return to this office.

You may then proceed to make a trial survey from a point about 8 miles from Inverell, where the Inverell and Tenterfield Trial Survey crosses the Swanbrook Creek, and, starting at this point, work to

meet Mr. Vine.

He has tracings of plan and section of original trial-line at Swanbrook, which you may procure from him; also copy the report I sent to him of the route of proposed trial survey.

The through plan and section from Glen Innes is urgently required, so you must use every endea-The through plan and section from Gien Times is discussive for the completing the field-work.' vour to join with Mr. Vine as early as possible, and return to this office on completing the field-work.' HERBERT PALMER.

Your plan and section from Swanbrook must, of course, be plotted from right to left, so that when joined to Mr. Vine's the through plan and section, Glen Innes to Inverell, may be from left to right, and you must procure sufficient information as to ownership of land to allow of a book of reference for Parliamentary plan being compiled. H.P., 22/10/81.

No. 10.

Mr. Carver to The Engineer-in-Chief.

Bly Camp, near Tenterfield, 26 October, 1881. I have the honor to acknowledge the receipt of memo. No. 81/1,179, and will carry out the instructions therein contained as soon as I possibly can.

Recent very bad weather here has delayed my present work.

I have, &c., N. P. CARVER.

Mr. Palmer.—W.H.Q., 31/10/81. H.P., 1/11/81.

No. 11.

Mr. A. Vine to The Engineer-in-Chief.

Sir, Railway Survey Camp, Glen Innes, 1 November, 1881. I have the honor to report progress made with trial survey from Glen Innes to Inverell as follows, also progress with permanent work Glen Innes to Tenterfield.

I have been employed making working plan on line Glen Innes to Tenterfield, and completed same up to 358 miles 52 chains $6\frac{1}{2}$ links, forwarded same to Mr. Carver. Travelling and removing camp, Deep-

water to Glen Innes, examining country between Glen Innes and Inverell for trial line.

I have run an experimental line of about $7\frac{1}{2}$ miles from Glen Innes nearing the crossing of the Waterloo Range (M'Millan's Gap), and about $3\frac{1}{2}$ miles of it levelled. This gap will necessitate a good deal of levelling to get the best line through it.

As soon as I have the experimental line run through and falling down into the Waterloo Range,

I will forward a tracing of same to Head Office.

I am, &c. ALFRED VINE.

No. 12.

Mr. Vine to The Engineer-in-Chief.

Sir, Camp, Balaclava, 2 December, 1881. I have the honor to report progress made with trial survey from Glen Innes to Inverell, as follows :

The centre line has been staked out from the junction of permanent trial line at Glen Innes to about 1 mile from the Waterloo Range, a distance of 5 miles 10 76 chains.

I expect to have the experimental line run and levelled over the Waterloo Range in the course of about ten days, down to Wellingrove Creek. This will be the heaviest work throughout the whole length.

As soon as I have the experimental line run over the Waterloo Range and down to Wellingrove

Creek I will forward a conv of same to Head Office.

Creek, I will forward a copy of same to Head Office.

ALFRED VINE.

No. 13.

Mr. Carver to The Engineer-in-Chief.

Camp, Swanbrook Creek, 31 December, 1881. I have the honor to report progress made this month in surveying the trial survey, Glen Innes

to Inverell, as follows:

After completing my survey from Tenterfield and fixing camp, I commenced work on the 5th by a thorough exploration of the country, and after completing 4 miles of necessary creek traverses, I commenced to stake the trial line, and have, with the exception of a little levelling, completed $6\frac{1}{2}$ miles of it, through a very thickly timbered country

After the 23rd of the month, work was a good deal retarded by the loss of chainmen, whose places I have, &c., N. P. CARVER. I have not yet been able to fill up.

No. 14.

No. 14.

Mr. Vine to The Engineer-in-Chief.

Sir, Balaclava, 3 January, 1882.

I have the honor to report progress made with trial survey, Glen Innes to Inverell, as follows: The line is staked, levelled, and surveyed to a distance of 5 miles 10 chains. Experimental line is

being run to a distance of 13 miles 52 chains from Glen Innes.

Here, in the latter part of 4½ miles, occurs a fall of 586 feet from the saddle in Waterloo Range to the crossing of Wellingrove Creek (tracing of plan and section forwarded on 24th instant). This part of the line runs over very rough, stony, and thickly-timbered country. I am now cross-levelling this portion of it, so that the best line may be ascertained at once, as in all probability the construction of this line will depend materially upon the descent from the Waterloo Range to Wellingrove Creek.

' The country from the Wellingrove Creek into the watershed of Swanbrook Creek is very good.

I have, &c.

ALFRED VINE.

No. 15.

Glen Innes Railway Conference to The Secretary for Public Works. To the Honorable the Minister for Public Works.

The Memorial of the undersigned, Members of the Railway Conference, held at Glen Innes, on Friday, 24th March, 1882,—

RESPECTFULLY SHOWETH,-

That your Memorialists were chosen as delegates to attend a Conference, to be held at Glen Innes, for the purpose of considering the question of connecting the Port of Grafton by means of a Railway with the Tableland of New England and the Western Districts of the Colony

Your Memorialists having carefully considered the whole question, and being individually acquainted with the districts interested and their requirements, amongst other things, arrived at the following

resolution:

"That, in the opinion of this Conference, the most suitable line of railway to meet the requirements of the Northern Districts of the Colony would be a line starting from Grafton, passing through Glen Innes and Inverell, and thence in a a westerly direction.

Your Memorialists, therefore, respectfully pray that you will take such steps as may be necessary to ensure the adoption of the line referred to, and the passing of a Vote during the ensuing Session of Parliament for the construction of the first section thereof.

And your Memorialists will, as in duty bound, every pray.

Edwd. Jones (Chairman of the Conference),

Glen Innes. T. Bawden, Grafton. Duncan M'Rae, Glen Innes. Frank Norrie, Grafton. Robert A. Lewis, Glen Innes. John H. Munro, Grafton. J. F. Utz, Glen Innes.

Robert Page. E. W. S. Hayley, Grafton. S. W. Burridge, Glen Innes. Samuel See, Grafton. T. M'Kittrick, Grafton. John Rea, Grafton. Edward Groves, Inverell. J. M'Master, Inverell.

No. 16.

Mr. Chinn to The Engineer-in-Chief.

Sir, Railway Camp, Glen Innes, 2 January, 1883.

I have the honor to report progress made with trial survey from Glen Innes to Inverell. The line has been surveyed and levelled from 323 miles 40 chains 10 links, on line Uralla to Glen Innes (my starting point), to 5 miles 10 chains, being a distance of 5 miles 10 chains, which is the top of the range known as Gallagher's Range.

The first two miles of the line is through flat country, scrubby, but not heavily timbered, the

remaining three miles being mountainous, but will not require very heavy earthworks.

The length between 5 and 12 miles is across the Waterloo Range, which is considered by far the I am, &c., worst country along the line. H. CHINN.

No. 17.

Mr. Chinn to The Engineer-in-Chief.

Camp, Balaclava, Glen Innes, 1 February, 1883. I have the honor to report progress made with trial survey from Glen Innes to Inverell, as Sir,

The line has been surveyed from 0 at Glen Innes to 17 miles 69 chains, being part of the line from

M'Millan's Range to about 1 mile west of the boundary of Newstead and Waterloo Runs.

The line between 7½ miles to 11½ miles, across the Waterloo Range, is through very rough and heavily timbered country, which will necessitate sharp curves and steep gradients, and consequently exceedingly heavy earthworks.

From inspection, I should say the line could be shortened some 3 or 4 miles, and easier grades found by tunnelling through M'Millan's Gap, and thence via Boyd's Gully, to plain, said tunnel not to exceed 20 chains in length.

As yet I have not traversed country between here and Inverell, but will do so on earliest opportunity, the distance being about 25 miles. I am, &c.

H. CHINN. No. 18.

No. 18.

Mr. Chinn to The Engineer-in-Chief.

Sir. Camp, 1 March, 1883. I have the honor to report progress made with trial survey from Glen Innes to Inverell, as follows

The line has been surveyed as far as Swan Vale, being a distance of 22 miles from Glen Innes, but

levelled only to $17\frac{3}{4}$ miles.

The country through which the line traverses between Waterloo and Newstead boundary is similar to the Waterloo Range, being very rough and heavily timbered, and will necessitate steep gradients and sharp curves, and heavy earthworks, and viaducts will be required.

H. CHINN.

No. 19.

Mr. Chinn to The Engineer-in-Chief.

Sir, Camp, Swanvale, 31 March, 1883. I have the honor to report progress made with trial survey from Glen Innes to Inverell, as follows:

The line has been surveyed and levelled from my starting point at Glen Innes to 28 miles 60 chains. The line from about 18½ miles to 28 miles 60 chains follows the valley of the Swanbrook Creek, and crosses same twice within a distance of two miles, and a third time some two miles below Swanbrook. There now remain about 14 miles to complete the survey.

Yours, &c. H. CHINN.

No. 20.

R. L. Murray, Esq., M.P., to The Colonial Secretary.

136 Pitt-street, Sydney, 23 May, 1883. Some time ago, in reply to a question of mine in the House, I was informed that the surveyor employed on the railway survey from Glen Innes to Inverell had been dismissed, that plans of his surveys were being prepared, and that another surveyor would be sent to take his place.

I have now the honor to request that I may be informed what steps are being taken in this matter,

and if a surveyor has yet been sent.

The want of this survey has been the excuse for not placing this line on the loan Estimates for not but T trust such will not be the case any longer. The survey of about 35 miles cannot be such a formidable undertaking.

R. L. MURRAY.

Mr. Murray was informed on 9th instant. See 83/2258.—W.H.Q., 20/6/83. Put by.

No. 21.

Assistant Engineer for Trial Surveys to Mr. Harwood.

It will not be necessary for you to plot the section of the remainder of the trial survey, Glen Innes to Inverell, but may forward your levels, when checked, to be plotted in this office in continuation

of what has already been plotted from Mr. Chinn's books. HERBERT PALMER.

No. 22.

Mr. H. T. Harwood to Engineer-in-Chief.

Inverell, 1 June, 1883. I have the honor to report that I arrived here on the 29th ultimo, having received instructions to complete the trial survey, Glen Innes to Inverell, my camp being now on the road from Uralla.

I have, &c. H.

No. 23.

Mr. Stuart to Engineer-in-Chief.

Inverell, 1 June, 1883. I have the honor to report that I arrived here to take up the trial survey of the Glen Innes and Inverell railway, and hope as soon as my camp arrives from Uralla to commence operations CHARLES McD. STUART

No. 24.

R. L. Murray, Esq., M.P. to the Honorable the Minister for Works.

Requesting particulars re Surveys, Railway Glen Innes to Inverell.

Please send me a reply, as full as possible, to my letter re Surveys on Railway Survey from Glen Innes'to Inverell. Yours, &c.,

R. L. MURRAY.

No. 25.

No. 25.

Engineer-in-Chief to R. L. Murray, Esq., M.P.

9th June, 1883. In reply to your letter addressed to the Honorable the Minister for Works requesting information re the Railway Trial Surveys between Glen Innes and Inverell, I have the honor to inform you, that a re-survey has been made of the original trial survey (the plans and sections of, which were destroyed in the Garden Palace fire) from Glen Innes to Swanbrook.

Two surveyors are now employed between Swanbrook and Inverell, and I expect to have a plan

and section of the through line from Glen Innes to Inverell in about two months time.

I have &c. W. H. QUODLING,

for the Engineer-in-Chief.

No. 26.

Mr. Harwood to Engineer-in-Chief.

Sir,

Railway Survey Camp, near Inverell, 30 June, 1883.

I have the honor to report that in conjunction with Mr. Stuart, I have completed the survey of the trial line "Glen Innes to Inverell," as far as 31 miles 10 chains, and am now working at the Inverell end of the remaining length, of which $3\frac{1}{2}$ miles have been staked and surveyed.

I am, &c.,

HÁMILTON HARWOOD.

No. 27.

Mr. Stuart to Engineer-in-Chief.

Survey Camp, Inverell, 30 June, 1883. I have the honor to report progress with the trial survey from Glen Innes to Inverell as follows

The centre line has been levelled from 23 miles 51 chains to 31 miles 12 chains and traversed from 31 miles 50 chains to 38 miles.

This part of the line runs principally through the country called Swanbrook Plains, and presents no engineering difficulties.

C. McD. STUART.

No. 28.

Assistant Engineer for Trial Surveys to Mr. Stuart.

On the completion of the trial survey from Glen Innes to Inverell you may forward all plans, books, &c. connected with that work to this office.

You may then proceed with your party to Armidale to make the trial survey from that town to Trial Bay. Report by what date you expect to reach Armidale, and I will then forward to that address plans, instructions, &c.

HERBERT PALMER.

No. 29.

The Assistant Engineer for Trial-Surveys to Mr. Harwood.

Mr. Harwood,
On the completion of the Glen Innes and Inverell trial-survey, you may forward to this office all plans, books, &c., connected with the work, and may then proceed with your party to Armidale to make a trial-survey from that mighbourhead to Mill B.

to make a trial-survey from that neighbourhood to Trial Bay. Report by what date you expect to reach Armidale, and I will then forward to that address plans,

instructions, &c.

HERBERT PALMER.

No. 30.

Mr. H. Harwood to The Engineer-in-Chief.

Railway Survey Camp, near Inverell, 16 July, 1883. In reply to memo. 83/259, I beg to inform you that the plan of the trial-survey, Glen Innes Sir, to Inverell, will be completed by the 24th instant, when the books, &c., can be forwarded to your office. Mr. Stuart and I expect to reach Armidale with our camps by the first of next month. I am, &c.

HAMILTON HARWOOD.

No. 31.

Mr. C. M'D. Stuart to The Assistant Engineer for Trial-Surveys.

Railway Survey Camp, Swanbrook Creek, Inverell, 18 July, 1883.

Mr. Harwood and I having completed the field work of this line into Inverell. We are at present working at the plans which we hope to have finished on Tuesday next, when they will be forwarded I am. &c., CHAS. M'D. STUART. with all level books, &c., to the office.

P.S.—We hope to arrive in Armidale about the 1st of August, to take up the survey there

No. 32.

No. 32.

Mr. C. M'D. Stuart to The Engineer-in-Chief for Railways.

Railway Survey Camp, Inverell, 25 July, 1883. Mr. Harwood and I have the honor to forward by this post the plans of this end of the Glen Innes and Inverell trial-survey, with the field and level books belonging to same.

I am, &c.

CHAS. M'D. STUART.

Mr. Palmer.—W.H.Q., 28/7/83.

Received.—H.P., 30/7/83.

E.M.C., 30/7/83.

No. 33.

The Assistant Engineer for Trial Surveys to The Engineer-in-Chief.

The trial-survey from Glen Innes to Inverell has been completed, and the plan and section will be ready next week.

H.P., 24/7/83.

No. 33.

Memorandum by The Secretary for Public Works.

Railway from Glen Innes to Inverell

A large deputation, accompanied by Messrs. Murray, See, Holtermann, Cameron, Fergusson, Levien, Withers, Poole, Purves, Fletcher, M'Kinnon, and H. Clarke, M's.P., waited upon me to-day and urged the construction of the line from Glen Innes to Inverell. They pointed out that the district through which the line would pass was a very fertile one, 90 per cent. of the land being fit for cultivation, and it would be put under crop at once if proper means of carriage for the wheat were given.

The railway would open up a district of one and a quarter million acres. 50,000 acres around Inverell were an untimbered plain, and as the average yield to the acre in the district was 20 bushels of wheat this area would give a total of 1,000,000 hushels per appropriate.

where in the district was 20 bushels of wheat, this area would give a total of 1,000,000 bushels per annum. The land in parts gave as high a return as $43\frac{1}{2}$ bushels per acre, and if the railway were constructed production and settlement would be largely stimulated, and the Colony could be supplied with the breadstuffs it required from this district, obviating the necessity that now existed of sending to Adelaide and other places for flour, &c.

The tin from Inverell last year was 3,000 tons, from Vegetable Creek 4,100 tons, this industry being more valuable than gold, and it was extending almost daily. The proposed line, again, would secure the wool from the clim of 1,200,000 sheep, astimated at 2,000 tons, not assume. The addition to the produce

wool from the clip of 1,200,000 sheep, estimated at 2,000 tons per annum. In addition to the produce sent away, it was estimated the carriage on goods sent up country would yield £20,000. They estimated the line could be made for £250,000, and they felt sure the traffic would pay a handsome interest upon this. It was mentioned the trade of the district was largely transacted with Toowoomba, Queenland.

I informed the deputation that I was pleased to receive them. Theirs was probably the largest and

most representative deputation that I was pleased to receive them. Theirs was probably the largest and most representative deputation that ever waited upon me or any other Minister. It seemed to me the speakers had been fair in the statements they made. The figures presented to me rather surprised me, for although I had known for a long time the district was a rich one, I was not aware it possessed such resources as were brought under my notice. I knew it had rich tin-fields, and the land was rich, and I knew it had rich tin-fields, and the land was rich, and I listened with pleasure to the practical farming experience of Mr. Gilhoney. I attached great importance to the statements made respecting the agricultural interest, and think the yield per acre should convince any one that the district was a very fertile one. I listened with pleasure also to the remarks made by Mr. Graney, respecting the tin industry principally, and thought them particularly fair, because he did not urge the construction of the line on local but on national grounds.

I could not give the deputation any definite promise at present in the matter beyond this, that I would recommend the construction of a railway to Inverell; but I was not prepared to say what particular route would be adopted. It seemed to me, from what I had already gathered that the route from Glan

route would be adopted. It seemed to me, from what I had already gathered that the route from Glen Innes was the correct one, but I was seeking information on the subject with a view of submitting the proposal to my colleagues and eventually to lay the matter before Parliament.

I would not bind myself to any particular route, but would pledge myself to recommend the construction of a line to Inverell.

F.A.W., 27/7/83.

Railways. B.C., 30/7/83.—J.R.

Glen Innes-Inverell Railway. - Facts for the Minister.

1. The construction of the line to Inverell, via Glen Innes, would bring Inverell within 425 miles of Sydney.

2. The line from Glen Innes to Inverell would intersect the richest agricultural portion of that district, and would tap an area extending from a point 10 miles east of Glen Innes to one 30 miles west of Inverell—say about one million acres.

3. 50,000 acres of this land consist of rich untimbered plains, ready for the plough.

4. The average yield of wheat for years past has been twenty bushels to the acre; as all this plain land will be placed under the plough within two years of the advent of the railway, there will be a production of 1,000,000 bushels.

5. The carriage in the above (27,000 tons), at present rates, would yield to the Government a revenue of £37,900.

6. In a very short time, on account of the unlimited quantity of good land, this could be increased three-fold.

7. The production of tin ore in the district is about 3,000 tons annually, the carriage on which would be £8,000.

8. This line would convey the clip of 1,200,000 sheep, say 2,000 tons, which would yield a revenue

9. That this line would connect two great centres 'of population, Glen Innes and Inverell, which

no other line could. 10. That in view of the promise made by former Governments, selectors, farmers, and others, have purchased the land from the Crown, and now eagerly and anxiously pray for the construction of this line to its further development.

Finally, that this line connects Inverell with the Great Northern Line at the nearest possible point.

Any other line would be at least 15 miles longer.

J. W. Moore, Mayor of Inverell. T. H. Marks, J. J. R. Gibson, John Sinclair, Delegates from Inverell. William Gilhome, E. Grainger, G. Buckleton, S. W. Burridge, James Martin, Duncan M'Rae, Delegates from Glen Innes. J. A. M'Intyre, Robert A. Lewis, Alex. Rogers, James H. Graney, Delegate from Vegetable Creek. R. L. Murray, M.P. Wm. J. Fergusson, M.P.

No. 34.

Mr. Surveyor Harwood to The Engineer-in-Chief.

Survey Camp, near Armidale, 31 July, 1883. I have the honor to report that the re-survey of the trial line, Glen Innes to Inverell, has been completed.

The plan of the portion surveyed by Mr. Stuart and myself has been plotted and forwarded to the office, together with the level and field books, &c. I am, &c H.

No. 35.

Mr. Stuart to Engineer-in-Chief.

Railway Survey Camp, near Armidale, 1 August, 1884. I have the honor to report the Trial Survey from Glen Innes to Inverell is completed, and the plans, level-books, &c., forwarded to the office.

The latter portion of the line into Inverell presented no engineering difficulties.

I am, &c. CHAS. M'D. STUART.

No. 36.

Extract from Report of Assistant-Engineer for Trial Surveys to Engineer-in-Chief.

Glen Innes to Inverell.—A line has been surveyed from the station site at Glen Innes, thence direct to Inverell. By adopting this route it is necessary to cross the Waterloo Range, which will add very considerably to the cost of the line. An estimate has been prepared of this extension, which gives a high average cost per mile. Should it be considered advisable to make the point of departure from the Northern Railway about 6 or 7 miles north of Glen Innes, I think a less expensive section might be obtained.

Sydney: Thomas Richards, Government Printer.-1884.

1883-4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY FROM GLEN INNES TO INVERELL.

(PETITION IN FAVOUR OF-INHABITANTS OF GLEN INNES.)

Received by the Legislative Assembly, 18 June, 1884.

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the inhabitants of Glen Innes and surrounding district,-

HUMBLY SHOWETH:-

, That your Petitioners' respectfully urge your Honorable House to consider the necessity and advantage to the Colony of connecting the towns of Glen Innes and Inverell by a line of Railway.

That Glen Innes being the very centre of the celebrated New England District, and surrounded by some of the best agricultural land in the Colony, is the most suitable as well as the nearest—and will prove the most profitable—point to start a line to the rich extensive lands to the west.

That a line going direct west will go right through the heart of this magnificent soil (scarcely an acre of which but what can be used for growing cereals)—will bring the whole of the grand district of Inverell into communication with the Great Northern Line at its nearest point.

That the advantages arising from opening up land capable of supplying the Colony with breadstuffs, as also of being exporters of those commodities which for years we have been importing, must tend to the wealth of the Colony, as well as the particular districts named.

Your Petitioners therefore pray that your Honorable House will be pleased to make provision during the ensuing Session for the construction of a line of Railway from Glen Innes to Inverell.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 1,744 signatures.]

188**3-4**.

LEGISLATIVE ASSEMBLY.

SOUTH WALES.

RAILWAY FROM GLEN INNES TO INVERELL.

(PETITION IN FAVOUR OF-INHABITANTS OF INVERELL.)

Received by the Legislative Assembly, 19 June, 1884.

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled. The humble Petition of the inhabitants of Inverell and surrounding district,

SHOWETH:

That your Petitioners, although residing and settled upon the richest agricultural lands in

That your Petitioners, although residing and settled upon the richest agricultural lands in Australia, studded and fringed as they are with tin-mines of great value, are yet shut out from the markets of the world in consequence of the want of railway communication.

Your Petitioners, relying upon the assurances of former Governments, have placed large areas under cultivation, but the market to this day being merely a local one, the tillers of the soil have been thwarted and disappointed, and this district, so richly endowed by nature, so designed, so capable of supplying the whole of the Australias with wheat, other cereals, wine, and fruit, is allowed to languish and account a position unprofitable to the State and ruinous to itself

and occupy a position unprofitable to the State and ruinous to itself.

That your Petitioners, studying the requirement of the district, and not being unmindful of the greater interests of the Colony, desire to point out that a line of railway from Glen Innes to Inverell would intersect and tap a tract of rich agricultural country extending east and west sixty miles, and north would intersect and tap a tract of rich agricultural country extending east and west sixty miles, and north and south twenty-four miles, or an aggregate of nearly a million acres, and by the further extension of this line westward large tracts of land of the same quality and description would be pierced, and finally the said line would pass into the Gwydir, a district renowned for its great pastoral wealth and resources.

Your Petitioners would further point out that no less than fifty thousand acres of this land consist of rich untimbered plains, ready for the plough, the owners of which are earnestly, eagerly, and impatiently waiting the advent of a railway, when the whole of the land would be immediately brought under cultivation.

under cultivation.

Your Petitioners desire further to state that the average yield of wheat per acre in the Inverell District for a series of years has been no less than twenty bushels (while that of the Colony generally has been fifteen bushels), and it is estimated that at the end of two years the district would export one and a half millions of bushels of wheat, worth three half will be a start of at least fifty thousand. succeeding year the producing capabilities would be increased to the extent of at least fifty thousand

Your Petitioners further state that the line proposed would bring nearly all the tin mines and mining centres of population to within four, seven, ten, or sixteen miles of one or other of the stations on the said line, to which points would be drawn from three thousand to four thousand tons of tin annually, worth from one hundred and eighty thousand pounds to two hundred and forty thousand pounds.

worth from one hundred and eighty thousand pounds to two hundred and forty thousand pounds.

Your Petitioners respectfully urge that the carriage of wheat and tin alone, as shown above, would contribute in a great degree towards making the line asked for highly remunerative, but when to this is added the carriage on wool, wine, maize, and other products of the district, it must be apparent that the said line would yield returns far exceeding those of any other branch line in the Colony.

Your Petitioners therefore pray that your Honorable House will be pleased to make provision during the present session for the construction of a line of railway from Glen Innes to Inverell.

And your Petitioners as in duty bound, will ever your from the construction of a line of railway from Glen Innes to Inverell.

And your Petitioners, as in duty bound, will ever pray, &c.

[Here follow 967 signatures.]

1883.

(THIRD SESSION.)

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

MURRUMBURRAH-BLAYNEY RAILWAY.

(ALTERATION OF ROUTE-PETITION, REPORT, &c.)

Ordered by the Legislative Assembly to be printed, 9 October, 1883.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 13th February, 1883, That there be laid upon the Table of this House,—

- "Copy of the petition (with names attached) recently presented to the
- "Government praying for an alteration in the route of the Murrumburrah-
- "Blayney Railway, at Young, together with a copy of the Engineer-in-
- "Chief for Railways report thereon, with all minutes, correspondence, or
- "other documents relating to the decision arrived at by such petition."

SCHEDULE.

NO	SCHEDULE.		
	James Gordon to Secretary for Public Works, forwarding petition setting forth objections to proposed route of Railway Line through the town of Young. 16 September, 1882	PA	-
2.	Petition above referred to, with minutes thereon. 16 September, 1882	9	2
3.	Under-Secretary for Works to James Gordon, forwarding copy of the Engineer-in-Chief's minute 28 October 1882	, ,	

MURRUMBURRAH-BLAYNEY RAILWAY.

No. 1.

Mr. J. Gordon to The Secretary for Public Works.

Sir,

In pursuance of the provisions of the Act of Council, 22 Victoria No. 19, and in accordance with the terms of the notice under the hand and seal of the Commissioner for Railways, bearing date the 21st August ultimo, which said notice requires that all parties affected by the railway works "Extension—Murrumburrah to Blayney, Part 1," shall set forth in writing, to the said Commissioner, within one month from the publication of the said notice, any well-grounded objections that may appear to them to exist to the making of the said railway or to the erection of the said works, I have the honor, at the request and on behalf of the petitioners whose names are subscribed to the enclosed petition, to forward their said petition, setting forth the objections that appear to them to exist to the making of a portion of the said railway extension, and beg that the matters and objections therein mentioned may receive the consideration of His Excellency the Governor and of the Honorable the Executive Council.

JAMES GORDON.

No. 2.

To the Honorable John Lackey, Esq., Secretary for Public Works.

The petition of the undersigned inhabitants of the town and district of Young,—

RESPECTFULLY SHOWETH:-

That your petitioners, viewing with much concern the route by which it has been determined to bring the extension of the railway between Murrumburrah and Blayney, Part I, into the town of Young, desire to urge on you the following well-grounded objections that appear to exist to the making and

construction of a portion of the said railway.

By a perusal of the plan and book of reference it appears: That the line determined on, and coloured red in the said map or plan, will intersect the main road from Young to Burrowa—M'Leary-street, Zouch-street, the Market-square, Lynch-street, and Main-street (the latter two streets being the chief thoroughfares), Clarke-street, and Hornhill-street, and will occupy sections 28, 29, and the whole of the Market-square, and will have the injurious effect of dividing the town into a third part, it being already divided by the Burrangong Creek, and besides passing through large-areas of valuable private property, for which the owners will have to be compensated, it will destroy an important public building, and completely and permanently block up seven of the streets of the town.

That the resumption for railway purposes by the Government of the Market-square which in a

That the resumption for railway purposes by the Government of the Market-square, which, in a sanitary point of view, is advantageously situated in the centre of the town, will deprive your petitioners of the greatest boon they at present possess, and of a benefit which in a few years will be highly valued and appreciated by the townspeople; moreover, a large amount of public money has been expended in effecting improvements and in fencing in this square.

The closing of the streets abovementioned will materially affect and interrupt the traffic, and will cause great inconvenience to the townspeople, and will work a serious injury to the holders of property through which the said railway line passes, and to persons owning property to the north of and adjacent

Your petitioners regard the proposed resumption and consequent destruction of the Public School buildings and site as a very great and unnecessary sacrifice of public property and money, and respectfully urge that it is undesirable to resume the present site of the Public School for railway purposes, as it is the best available site for the Public School, being both in a central and elevated position.

Your petitioners understand that a trial survey, as shown on the sketch hereunto annexed, marked red, has already been made, which deviates from the line coloured red in the said map or plan (in the Police Office, Young), at a point about one hundred and seven chains on the south-east side of the town of Young, and joins the said line at a similar distance on the north-west side of the said town; and they desire respectfully to urge that the line of the said trial survey is the preferable one, and will be more easily constructed, more advantageously situated, and will not necessitate the expenditure of so large an amount of public money to compensate property owners as the line coloured red hereinbefore mentioned.

amount of public money to compensate property owners as the line coloured red hereinbefore mentioned.

The line suggested by your petitioners will pass through a portion of the town which is thinly populated, and will not in any way hinder or impede the traffic or interfere with the streets of the town, and will pass through land which is unalienated from the Crown; and by a reference to the said trial survey it will be at once seen that equally advantageous sites and positions can be obtained for the construction of the goods-shed, railway works, and station.

Your petitioners therefore earnestly pray that His Excellency the Governor, with the advice of the Executive Council, will deem it expedient to make such an alteration and amendment of the line of railway in question as will meet with the requirements of the public and with the views of your petitioners.

And your petitioners will ever pray, &c.

mind your po	, or or or or		in over play, ac.	•			
Name.	Residence	e.	Occupation.	Name.	Residence		Occupation.
James Gordon	Young		Solicitor.	J. W. Davies	Young		Freeholder
J. N. W. Heely	,,,	•••	Medical Practitioner	N. P. Nielson	,,		Storekeeper
William Sharp	11		Storekeeper	Frank Holland	11		Clerk
Phillip H. Rutlidge	,,	• • •	Auctioneer.	Charles Jennings	,,		Carrier
his				William M'Kay	11		Labourer
Francis x Avery	,,		Labourer	J. H. Tinlam	**	,	Hotelkeeper
mark				J. J. Parry	"		Householder

Name.	Residence.	Occupation.	Name.	Residence.	Occupation.
Joshua Beatson		Farmer	Charles Cabban		Storekeeper
, , , , , , , , , , , , , , , , , , , ,	Morrel	,	John Bidwell	,,	Butcher
James M'Fadden	Young	Executor for E.	Jacob Green	,,	Miner
mi il To 1		M'Evoy, Young	Joseph Jowls	,,	Saddler
Timothy Dealy Thomas Cole	••	Baker Publican	Peter Donohoe Henry Plume	» · · · · · · · · · · · · · · · · · · ·	Storekeeper
John Faggart		Labourer	Alexander Sivell		Watchmaker
William North		Carpenter	E. S. Freestone		Solicitor
David M'Veigh		Cordial Manufacturer	T. Hayes		Freeholder
Thomas O'Brien	,,	Wheelwright	A. Burrows	,,	Saddler
John Hadwick		Householder	R. A. King	,,	"
William Hopwood		Freeholder	James English Peter Bain	,,	Joiner .
Thomas Hopwood John M'Creight	,,	"	W. Matthews	**	Cabinetmaker 6
Henry Stale	,,	Miller	Thomas Freeman		Bootmaker
William Smith		Labourer	W. B. J. Sims		Hotelkeeper
John Kennedy	' ,,	,,	G. Horsley	,,	Labourer
James Woodbridge	5-mile	Hotelkeeper	C. Doring		Miner
J. Kemp			Thomas Burges	" ´	Saddler
Alexander Chant	Young	Blacksmith	B. G. Topham	"	"
J. Richardson John Garnet	" …	Freeholder	George Bye Conrad Stumpf	,,	"
John Baskerville	Voung		Mrs. J. Rige	,,	Householder
James O'Connor	,,	Plasterer ·	J. M. Slatyer	••	Fruiterer
John Punt	,,	Carrier	J. J. Smith		Farmer
Frank O'Connor	,,	Plasterer	W. F. Leeder		Chemist
David Booren	,,	Carpenter	Joseph C. Page		Inspr. of Conditional
William Canfield	,,	Cordial Manufacturer			Pchs.
Joseph Dixon	,,	Labourer	James O'Leary		Produce-dealer
E. S. Flotton	,,	Miner	Frederick Gordon	,,	Auctioneer
J. Hutchinson		Bricklayer	his	•	77
J. O'Brien R. O'Brien	,,		Alex. x Wallace mark	"	Farmer
John Cliff		Shoeing-smith Gardener	his	,	
D. Webster	,,	Tailor	Geo. x Wilder		,,
Hugh Fagan		Draper	mark	,,	77
James Stewart	,,	Storekeeper	Thomas Benson	,,	Gardener
Geo. Bailey	,,	Photographer	Joseph Dixon	,,	Brickmaker
Robert Farrar	"		his		
George Miller		Cobb & Co. (Manager)		,,	"
J. F. Morrison J. H. Powell	15.5	Farmer Bailiff	mark D. M. Veigh, jun	_	Labourer
James Devine	••	01 1	R. P. Mitchell	**	
W. T. Hullana	"	Teacher	W. Gould	,,	Brickmaker
E. Winton	,,	Cammian	James Birch	,,	Carrier
J. F. Ryan	,,	,,	Thomas Scott	,,	Freeholder
James Thompson	,,		Franz Krebs	,,	Farmer
J. W. Brabuer	,,	~ -	W. Hydewordingham	,,	Book-keeper
C. H. Pemberton C. M'Gregor	,,	'TL/I''	T. H. Carey W. Wright	,,	Freeholder Soapboiler
John Wall	' ,,	Butcher	F. A. Brock		Stock and Station Agent
R. Matthew	,,	Miner	E. F. Meares	,,	Bank Accountant
John Scott	,,	Carpenter	J. R. Crane	,,	" Clerk
G. HBople	,,	Bootmaker	Michael Murphy	,,	Carrier
John Cregan	,,		F. C. Foster	37	Farmer
G. Slates	,,		C. Kelly	_	C
H. Falconer Patrick Ryan	Calabam	Town Crier	Carla Marina John Mackenzie	• •	Squatter Grazier
William Chant	Young	Blacksmith	J. D. Mackenzie	» ···	GTWDIOI.
Robert Johnson	,,	Householder	J. A. Bloomley	,,	Book-keeper
Peter Cram	,,	Miller	\mid B. Bennett	,,'	Journalist
Thomas Cram	,,	Builder	E. H. Hurst	,,	Printer
William Fașler		Farmer	C. Caldwell		
Th! I This	Road.	Camandan	H. G. Lovey	Young	
David Black Thomas Withers	-		Matthew Sharp George Beazley		Carpenter Labourer
D. Baldwin	,,		John Ross	,,	Blacksmith
W. Hickey	·	Cabinet-maker	J. Southall	,,	Cabinetmaker
J. G. Davidson	,,	TT : 1 17	J. S. Quail	,,	Freeholder
A. Lee & Co	. ,,		C. S. Quail	,,	,,
John Cashen		Butcher	W. S. Quail	" …	**
Joseph Bain			Thomas Quail		**
Henry Hosie Sun Kum Hang		C . 1	George Quail W. Duncan		"
Arthur Dempsey		TO 1 1 1 1 1	G. A. Sherwin	,,	Professor of Music
William Neill	· ,, ···	T 1	Sarah Johnson		Hotelkeeper
Finlay Peter		Veterinary Surgeon		Road.	-
Sun Quong Tye		Q11	Samuel Flenett	Young	Contractor

Name. Residence	e. Occupation.	Name.	Residence.	Occupation.
William Coape Your George Taylor ,, George Cobbin ,, R. J. Pearson , William Baker ,,	Freeholder Labourer Builder Farmer	Edward x White mark George Johnse John Cologan	, -	Grocer

Railways, B.C., 20/9/82.—J.R.

Engineer-in-Chief, B.C., 25/9/82.—CHAS. A.G.

Report of Engineer-in-Chief.

The plans and sections of the trial line referred to in the petition attached were destroyed by the fire in the Garden Palace. The route now adopted was selected as the one that would do the least damage to the town of Young, and give a more favourable site for a station than could have been procured on the proposed deviation. I think, too, that the route adopted crosses the streets more favourably than would have been the case on the route proposed by the petitioners, and that a smaller number of streets will be closed than if the line had been taken obliquely through the town, as suggested.

Under-Secretary for Works.

Minute of Secretary for Public Works.

Inform.—J.L., 24/10/82.

OTKS.

. No. 3.

The Under-Secretary for Works to Mr. J. Gordon, Young.

Sir, Department of Public Works, Sydney, 28 October, 1883.

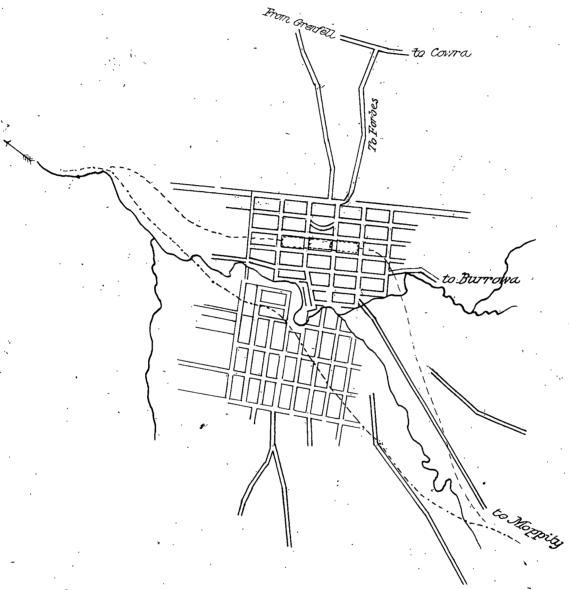
Referring to the petition presented by you on the subject of the line determined upon for the ranway through the town of Young, I am directed to enclose for your information a copy of a report which has been obtained from the Engineer-in-Chief for Railways on this subject.

I have, &c., JOHN RAE.

9/10/82.

[Plan.]

Sydney: Thomas Richards, Government Printer. -1883.



NOTE. Line determined on shown thus ______

(Sig. 128.-)

NEW SOUTH WALES.

GREAT SOUTHERN RAILWAY.

(ALLEGED MISMANAGEMENT ON-LETTERS AND MINUTES.)

Ordered by the Legislative Assembly to be printed, 26 February, 1884.

[Laid upon the Table of the House in accordance with promise made by the Honorable the Secretary for Public Works, in answer to question No. 7 on Votes and Proceedings of 8th February, 1884.]

"Copies of Reports, and Minute by the Commissioner for Railways, in reply to letter "appearing in the Melbourne Argus of the 7th December, 1883, signed "Veritas."

The Argus, Friday, December 7, 1883. AN OVERLAND RAILWAY DANGER.

To the Editor of the Argus. · Sir,

You will perhaps think it strange that a Victorian journal should be asked to expose a public danger in New South Wales, but the fact that the New South Wales newspapers are mostly, if not all, too timid to grapple with it, or too regardless of the public safety, and also that Victorians are deeply interested in the danger, should be sufficient warrant for your interference, particularly as a general feeling prevails that the officers of the Railway Department manage to suppress from public knowledge, if not from the Commissioner for Railways, as many as possible of the accidents and irregularities that occur. Inquiries are reported to take place, but the results of these are generally known only to the Department. It will scarcely be credited that so much irregularity and danger as I am about to detail could be permitted to exist unchecked for months together, on the great trunk line for mails and passengers which connects Sydney and Melbourne, over which one express and one regular mail train travel each of six days of the week, a great deal of which travelling has to be done in the dark, and on a great portion of which line the banks are so heavy and numerous, the gradients so steep, and the curves so sharp, that the utmost care is necessary to prevent accidents. For the last few months the most of the stock and goods Is there any trains running between Picton and Albury have been so irregular in their time, and the engine-drivers, truth in this guards, and firemen have been so exhaustingly worked, that it is almost a miracle no terrible and fatal B.C. 10/12/8 collision has happened ere this. These irregularities, which may be said to be equivalent to demoralization, chas. A. G. are widely known, and have been exposed to a limited extent through the Press; but the Commissioner for Railways, who has the reputation of being the right man in the right place, makes no sign; and it may be his apparent inactivity that induces the belief that he is not made aware of the extent of the danger. The dangers are that the stock and goods traffic is so great that the rolling stock is unequal to 1s this true? it; that trains cannot keep time to within "hours"; that some engines which have been for some time Chas. A. G., 10/12/88. past recommended to be sent in for repairs have not been repaired, and are still running; that one engine—No. 183, I think—has scarcely one true wheel to it, having been injured in the Gunning accident; Mr. Scott will please report engine—No. 183, I think—has scarcely one true wheel to it, having been injured in the Gunning accident; Mr. scott will that there is no time allowed to wash out the engine boilers and to clean the engines as they should be, upon this.—
to keep them in good order; that the men are harassed about and worked beyond endurance almost, to make up for the deficiency of rolling stock; that they have no regular nor nearly sufficient time for work, Mr. Scott.—
sleep, or refreshment, some being worked from 70 to nearly 100 hours per week, as against the standard Chas. A. G., maximum of 55 hours ordered by the Minister for Railways; that some of the fuel they are compelled to use—against which they have constantly protested—has been pronounced by judges to be unfit for its work and that heavy trains are often divided into two portions before heing sent on the worst part of the work, and that heavy trains are often divided into two portions before being sent on the worst part of the road, and that the second division is frequently sent on after the first within a quarter of an hour or so after the departure of the latter, to the imminent danger of both. Two accidents have recently occurred, rather too long one near Gunning, where the second division of a heavy train ran into the first; fortunately, it was not a "Vertias" does passenger train, and also fortunately, no one was seriously injured, the guards alone suffering from the shock; and as the accident occurred near a station, the line was cleared in time to prevent further damage about.—Chas by passing trains. Only a few nights ago a passenger train was divided at the Breadalbane Station, and A. G. the second portion started on the very worst part of the road within eight minutes of the first half. That this state of things should be allowed to exist on a main trunk "single line" of railway, over which so many passengers are constantly being carried, seems to be incomprehensible. Judging from all that is said and the little that is printed of the present Railway management, it looks as if the Department was thoroughly disorganized.

I am, &c., work, and that heavy trains are often divided into two portions before being sent on the worst part of the f tne ___ I am, &c., . VERITAS. thoroughly disorganized. New South Wales, December 3.

The Echo, Saturday, December 15, 1883.

THE TRAFFIC ON THE SOUTHERN RAILWAY LINE.

A FEW days ago (says the Argus) we published a letter from a correspondent in New South Wales, who asserted that the traffic on the Great Southern line between Sydney and Albury is being conducted in a dangerous manner. The substance of his statement is that the rolling stock is unequal to the goods traffic, and that trains consequently keep very irregular time; that engines which are out of repair are kept running; and that to make up for the deficiency of rolling stock the men are required to work nearly double time, and thus become unfit for the proper discharge of their duties. The effect of these influences, our correspondent declares, is to render the traffic unsafe and to produce virtual demoralization in the our correspondent dectares, is to render the trainc unsafe and to produce virtual demoralization in the Department. The statements of our correspondent, which are supported to a large extent by newspapers published at Goulburn and Wagga Wagga, are so circumstantial that we have felt justified in calling attention to them prominently, in the hope that official inquiry will be made. It may be objected that we should concern ourselves with our own affairs and not with those of our neighbours; but since the Albury to Sydney line is daily used by large numbers of Victorian passengers, who make it their regular means of communication with Sydney we are as much interested in the safety of the line as our follows: means of communication with Sydney, we are as much interested in the safety of the line as our fellowcolonists in New South Wales.

Get all the reports together at once, and submit to me not later than the 8/1/84; those officers who have not reported to report by that time.—Chas. A. G., 4/1/84. Urgent.

Report of Locomotive Engineer.

ENGINE 183 was not in the state described, but owing to skidding there were some flat places in the tyres, but nothing to justify any apprehensions as to the safety of running it. No. 183 has run 66,764 miles, and was due for an overhaul, but has been running since without any danger. The goods traffic having increased to an enormous extent, the engines have not on all occasions been able to keep time. As regards the number of hours worked by the drivers and firemen, they have not been excessive in any case. W. SCOTT The Commissioner. 27/12/83.

Have our men been working excessive hours; Traffic Manager, for early report.—D.V., 3/1/84. and have we at any time been short of engine-power on the Southern line lately?-D.K., 4/1/83. Inspector Crawford.

Report of Traffic Inspector.

THE traffic between Harden and Picton has been very heavy for the last three or four months. A large number of special trains and many of the up and down trains were run in two divisions, consequently many of the trains ran late; but as all trains are worked under the staff and ticket regulations, there could be no danger.

The guards were not worked exhaustively. Occasionally, through trains running late, they had longer hours, but nothing near to the extent as attempted to be shown by "Veritas."

On one or two occasions trucks were short of the demand.

Fifteen minutes interval is allowed between all trains on the more dangerous portion of the line,

and between Bargo and Mittagong all trains are worked on the block.

There is no foundation for the statement in reference to a passenger train being divided at A. CRAWFORD, Breadalbane-no such thing took place. 8/1/84. The Manager.

Report of Traffic Manager.

COMMISSIONER to see. The goods trains on the Southern line have not kept good time during the last few months, partly because the traffic has been heavy, but principally because of the bad coal used on the

The want of rolling stock on the Southern lines has been very rare indeed, and it is not true that trains are divided on the worst part of the road, or that a passenger train was divided at Breadalbane; nor is it true that the men have been worked beyond endurance, and I challenge "Veritas" to give a single case wherein a guard has worked 70 (much less 100) hours per week. W. V. READ, Commissioner. (Per D.K.), 8/1/84.

Minute by Commissioner.

There is no foundation for the sensational report made to the Argus, and the statements made should be contradicted in the Herald. No doubt the Victorian people, contrasting their frequent accidents with our immunity from accidents, would like to raise a belief that we are not so exempt from carelessness and neglect as the result seems to show we are, but that we have been more fortunate. The trite saying that "Providence helps those who help themselves" is more applicable, perhaps, to Railway management than it is to any other undertaking; and if the Argus, as the exponent of public opinion in Victoria, would devote their influence to perfecting the management of the Victorian Railways, they would have surer grounds for congratulation upon the result than they have for the strictures which they would have surer grounds for congratulation upon the result than they have for the strictures which they have been pleased to pass upon the management of the Railways of this Colony. CHAS. A. G.

14/1/84.

Minute of Secretary of Public Works:—I am pleased to have report, and concur with Commissioner's minute.—F.A.W., 14/1/84.

1883-4

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAYS.

(MOSS VALE AND BOWRAL STATIONS.)

Ordered by the Legislative Assembly to be printed, 31 October, 1884, A.M.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 10th October, 1884, That there be laid upon the Table of this House, a Return showing,—

- "The quantity of goods (including live stock), inwards and outwards, from
- "Moss Vale and Bowral Stations respectively, since 1st January, 1882,
- "and the amounts paid as freight on same."

RETURN of Outwards and Inwards Traffic, Goods and Live Stock, for Bowral and Moss Vale Stations, for the years 1882, 1883, and for eight months ending 31st August, 1884, respectively.

BOWRAL

	Outwards.																		Ir	wards	-						
Goods.					Live Stock.									ods.			Live Stock.										
	T.	c.	. q.	£	s.	d.	horses	cattle	calves	sheep	pigs	£	: s.	. d.	T.	c. q.	£	s.	d.	horses	cattle	calves	sheep	pigs	£	s.	d
1882	600	12	2 3	635	2	5	62	1,111	278	414	2,165	459	16	2	2,053	7 2	1,822	12	1	19	463	60	1,591	28	188	18	٠.,
1883	1,367	4	13	795	7	3	36	349	199	146	2,157	304	13	10	. 3,280	11 3	2,214	12	0	16	299	106	1,254	79	114	7	1
1884 8 mos	450	17	7 3	384	14	2	3	. 94	129	480	1,295	142	14	1	2,815	7 1	2,042	17	3	17	51	19	304	11	41	18	1
Total	2,418	15	5 1	1,815	3	10	101	1,554	606	1,040	5,617	907	.4	1	8,149	6 2	6,080	1	4	52	813	185	3,149	118	345	3	ĺ

MOSS VALE.

							Or	twards.						1	Inwards.											
Goods.					Live Stock.								Goods.					Live Stock.								
	T.	ċ.	q.	£	8	. d	horses	cattle	calves	sheep	pigs	£	8. d	1.	т.	c. q.	£	s. (1. j	horses	cattle	calves	sheep	pigs	£	8. (
1882	1,704	10	2	2,700)]	11	216	4,614	1,381	10,063	2,112	1,887	4 6	3	3,423	4 1	3,666	10	6	143	744	17	5,236	68	388	7
1883	2,265	19	3	3,189	18	8 6	464	3,531	1,064	12,500	1,139	1,590	3 4	١	3,815	15 1	3,664	13	8	158	706	21	10,557	73	652	0 1
1884 8 mos	1,468	1	1	1,786	4	2	124	3,072	774	7,380	275	1,151	0 6	3	3,642	16 3	2,989	7	7	164	292	6	1,984	125	192	10
Total	5,438	11	2	7,676	. 4	7	804	11,217	3,219	29,943	3,526	4,628	8 4		10,881	16 1	10,320	11	9	465	1,742	44	17,777	266	1,232	18

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[777 copies—Approximate Cost of Printing (labour and material), £2 6s. 4d.]

1883-4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

PENRITH RAILWAY YARDS.

(COST, ACCOMMODATION, &c.)

Ordered by the Legislative Assembly to be printed, 25 March, 1884.

- LAID upon the Table of the House in accordance with promise made by the Secretary for Public Works, in answer to Question No. 9 on Votes and Proceedings No. 2, of the 10th-20tober, 1883,—
 - "(1.) The cost of the Railway yards at Penrith, including earthwork, turn-"tables, and everything in connection with the erection of the yards in "question?
 - "(2.) How many trucks of cattle and sheep have been unloaded at Penrith "Station during the month of September and up to the 5th of the present "month?
 - "(3.) The time it took to unload each consignment of cattle?
 - "(4.) The number of Railway officials employed at each time unloading such cattle; also the number of men employed by the consignee?
 - "(5.) Is it a fact that the main line was blocked for a considerable time in consequence of the defective designs of the above yards?
 - "(6.) Is it also a fact that the only Railway approach for passengers and traffic to Railway Station was blocked up with wild cattle for some time when unloading such cattle?"
- (1.) Question. The cost of the Railway yards at Penrith, including earthwork, turntables, and everything in connection with the erection of the yards in question?

 Answer. The approximate cost of the erection of stock-yards, Penrith, including dockwalls, turntables, earthwork, sidings, &c., was £1,493 5s. 11d.
- (2.) Question. How many trucks of cattle and sheep have been unloaded at Penrith station during the month of September and up to the 5th of the present month?

 Answer. 37 trucks of cattle and 58 trucks of sheep.
- (3.) Question. The time it took to unload each consignment of cattle?

 Answer. It is impossible to say, as the time was not kept, and it would of course depend upon the size of the consignment.
- (4.) Question. The number of Railway officials employed at each time unloading such cattle; also the number of men employed by the consignee?

 Answer. Sometimes two and sometimes four Railway officials were employed. It depended entirely upon how many could be spared at the time. Consignees sometimes employed a similar number, according to the quantity of stock to be unloaded.
- (5.) Question. Is it a fact that the main line was blocked for a considerable time in consequence of the defective designs of the above yards?

 Answer. Yes.
- (6.) Question. Is it also a fact that the only Railway approach for passengers and traffic to Railway Station was blocked up with wild cattle for some time when unloading such cattle?

 Answer. Yes. The yards are being removed to a more eligible site.

NEW SOUTH WALES.

RAILWAY EXTENSION TO WALGETT.

(PETITION AGAINST GOVERNMENT PROPOSAL—CITIZENS OF MAITLAND AND MORPETH.)

Received by the Legislative Assembly, 9 October, 1884.

To the Honorable the Legislative Assembly of the Colony of New South Wales, in Parliament assembled. WE, the citizens of West and East Maitland, Morpeth, and surrounding districts, by the signatures of the Mayors of our respective Municipalities, added hereto by authority of a large and influential public meeting, humbly petition your Honorable House that, when taking into consideration the proposals of the Honorable the Minister of Works for the extension of our national railways, they will recognize the great and lasting injury that will be done the whole of the northern portion of the Colony if the proposal to extend the line from Mudgee to Walgett via Coonamble is sanctioned by Parliament.

Your Petitioners are of opinion that the only extension that will meet the trade and requirements of the Walgett district is by way of Narrabri, Wee Waa, and Pilliga, and that of Coonamble by connection with the Western line at Dubbo; and therefore pray, in the wisdom of your Honorable House, those lines

may be authorized in lieu thereof.

Your Petitioners humbly showeth:—1st. That the valley of Hunter River was almost the first portion of the Colony settled by an enterprising population of agriculturalists and graziers; that its early residents crossed the Liverpool Range, reaching the tablelands of New England, and, pushing westward, extended their explorations to the head waters of the Namoi, and thence to its junction with the Barwon, at Walgett, opening up one of the richest districts of the Colony, the trade to and from which has always been conducted with and through the towns on the Great Northern Railway and the Port of Newcastle. Should the proposed line be sanctioned this trade will be diverted from its usual and proper channel.

Your Petitioners would respectfully bring under the notice of your Honorable House that, whereas Walgett is only 110 miles from Narrabri, the connection with Mudgee would necessitate the construction of 213 miles of railway, the former line being through level country without any engineering difficulties, and therefore inexpensively constructed, whereas the latter line must pass over a mountainous district at great expense, the saving to the Colony in the cost of construction being nearly half a million, after making provision for the line from Dubbo to Coonamble. Should the proposed line be authorized it would come into direct competition with both the Great Northern and Western lines, thereby increasing the working expenditure and reducing the income derived from those lines. The traffic of the whole of the western portion of the Colony would also be concentrated upon the mountain line between Wallerawang

western portion of the Colony would also be concentrated upon the mountain line between waiterawang and Penrith, further entailing a large working expenditure and delay, whereas by the Northern line the traffic would reach the Metropolis by the railway now being constructed from Homebush to Waratah.

3rd. Your Petitioners would press upon the attention of your Honorable House the necessity of connecting, in as direct a manner as possible, the rich plains of the west (which unfortunately are subject to periods of disastrous drought) with the elevated tablelands of New England, which in such seasons are able to graze a large quantity of stock. Had such a railway been available during the past season the Colony would have been saved a heavy loss.

4th Your Petitioners prove that your Honorable House will not senction the proposal of the

4th. Your Petitioners pray that your Honorable House will not sanction the proposal of the Government in this particular, but will authorize the extension from Narrabri to Walgett, for the following reasons:—That it is the most direct and nearest route to the sea-board; that it will require less outlay than any other route, and can be completed in much shorter time; that it will pass through some of the richest land in the Colony; that it will add no burthen to the country, as it will unquestionably yield a return over and above the interest on the capital invested and working expenses; that it will prevent a great injustice being done to the Northern District by diverting its legitimate trade; that it will directly connect the rich lands of the Hunter River adopted from its greater minfull for agricultural numbers. the rich lands of the Hunter River, adapted from its greater rainfall for agricultural purposes, with the rich plains of the west, subject to periods of drought; also the connection of Coonamble with the Western line, at Dubbo, again retaining the trade of that district in its proper and legitimate channel by an expensive line of railway, in lieu of the expensive one proposed from Mudgee.

And your Petitioners will ever pray.

ROBERT HYNDES, Mayor, West Maitland. N. F. RICHARDSON, Mayor, East Maitland. W. BOWES Mayor, Morpeth.

1597 But 1885

WALES. S.O.U.T.H.

RAILWAY EXTENSION TO WALGETT.

(PETITION OF RESIDENTS OF DUBBO, TALBRAGAR, MARTHAGUY, &c.)

Received by the Legislative Assembly, 14 October, 1884.

To the Honorable Members of the Legislative Assembly of New South Wales, in Parliament assembled. The humble Petition of the undersigned residents of Dubbo, Talbragar, Marthaguy, Castlereagh, and other parts of the North-western District,-

HUMBLY AND RESPECTFULLY SHOWETH:

That your Petitioners have learned with surprise of the proposal of the Government to ask authority from your Honorable House to borrow the sum of £1,379,000 for the purpose of constructing a line of railway from Mudgee to Walgett via Coonamble.

That your Petitioners humbly suggest to your Honorable House the desirableness of negativing

1170---

the proposed loan, for the following reasons:—

That the line from Mudgee to Walgett would for the greater part of the first 100 miles go through sterile and rough country, neither fitted for agricultural nor pastoral pursuits, and where it went through good country, as near Gulgong and Cobbora, the land belongs to wealthy proprietors, who have formed in the neighbourhood large estates, which are and will be used, not to support a population, but to rear and

feed sheep and cattle.

That the cost of the line, £1,379,000, shows the unprofitable nature of the country through which the Railway would pass, for 43 miles of the country, from Mudgee to Coonamble, when the line strikes the Castlereagh Plains, and 68 miles to Walgett, the country is a dead level, and a railway could be built for £4,000 a mile, which for 111 miles is £444,000. This would leave the cost of the first 100 miles at the extraordinary sum of £935,000, or £9,350 a mile—nearly equal per mile to that expended on the construction of the unremunerative railway from Wallerawang to Mudgee.

That the extension of the railway from Mudgee to Walgett, instead of assisting to render profitably productive the Mudgee-Wallerawang Railway, will, on account of the wide area of heavy and bad country to be gone through, only intensify the loss to the country, and add another non-paying section to the already unsatisfactory and unremunerative branch from Wallerawang.

That your Petitioners would respectfully ask your Henorable House to reject the proposed Mudgee-Walgett Railway, and adopt instead extensions which, while costing nearly a half million of money less for construction, would not only do the greatest good to the greatest number of taxpayers, but prove an aid to, and not a charge upon, the general revenue. The extensions, the adoption of which your Petitioners respectfully ask, are: From the North-western Railway at Narrabri to Walgett; and from the Western Railway at Dubbo to Coonamble. From Narrabri to Walgett is 110 miles, through a splendid pastoral country, and from Dubbo to Coonamble. From Narrabri to Walgett is 110 miles, through a splendid pastoral country, and from Dubbo to Coonamble, is chiefly level plains, and a railway could be constructed for £4,000 a mile, or putting at the most £4,500 per mile, which would, for 202 miles, be £909,000, or £477,000 less than the sum proposed to be borrowed for the Mudgee-Walgett line.

Your Petitioners would impress upon your Honorable House that of lines from

**2477,000 less than the sum proposed to be porrowed for the Mudgee-waigett line.

Your Petitioners would impress upon your Honorable House that owing to heavy gradients, &c., the cost of working the proposed line from Mudgee will be double that of lines from Dubbo to Coonamble and Narrabri to Walgett. On the level country over which these lines would run locomotives will be able to haul double the freight they would over the first 100 miles of the line from Mudgee to Walgett.

Your Petitioners would particularly point out to your Honorable House that a railway from

Your Petitioners would particularly point out to your Honorable House that a railway from Narrabri to Walgett is the natural connection of the Namoi and Barwon country with the Hunter Valley and the Port of Newcastle. It would also materially assist the remunerativeness of the railway now in course of construction between Homebush and Waratah, and it would at the same time relieve the congested traffic of the Western line pointed out by Ministers but which they inconsistently prepage to congested traffic of the Western line, pointed out by Ministers, but which they inconsistently propose to aggravate by bringing on it the extra traffic of the north-western border country, by the line from Walgett via Mudgee.

Your

Your Petitioners would point out, as a further argument in favour of the lines from Narrabri to Walgett, and Dubbo to Coonamble, that the first named would connect the pastoral districts of the Barwon, Namoi, &c., with the rich agricultural producing Hunter Valley and the cereal growing Liverpool Plains; while the second named would connect the Castlereagh Plains with such producing districts as Dubbo, Wellington, Blayney, Orange, Molong, Caecoar, Bathurst, &c., and thus in time of drought enable the residents of these plains to be readily and cheaply supplied with produce, and their stock to be removed by rail from grassless country to the paddocks in the inside districts.

Your Petitioners, in conclusion, pray your Honorable House to reject the proposal of the Government for a railway from Mudgee to Walgett, and to authorize the construction of lines from Dubbo to Coonamble, and Narrabri to Walgett, because by so doing you will be saving, approximately, the country £500,000, and at the same time be sanctioning railways giving every promise of paying interest, and defeating a line which holds out no reasonable prospect of paying, during the next century, even working expenses, let alone interest on capital invested.

And your Petitioners, as in duty bound, will ever pray, &c.

[Here follow 962 signatures.]

Sydney: Thomas Richards, Government Printer.—1884

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WALES. SOUTH

RAILWAY EXTENSION TO WALGETT.

(PETITION OF INHABITANTS OF NEWCASTLE.)

Received by the Legislative Assembly, 14 October, 1884.

To the Honorable the Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the Inhabitants of Newcastle, in Public Meeting assembled,—

RESPECTFULLY SHOWETH: 1. That your Petitioners observe with surprise and regret that the Government Railway scheme recently laid on the Table of your Honorable House proposes that the much required line of railway from Walgett shall run to Mudgee via Coonamble.

2. That the natural channel for the traffic from Walgett is via Narrabri to Newcastle.

3. That the proposed line to Mudgee runs for the greater part of its length through a barren and difficult country, and will be expensive to construct and maintain, and will have to depend to a considerable extent on the through traffic.

4. That a line from Walgett to Narrabri would be very much shorter and less expensive than that proposed, running as it does over level country where the timber necessary for its construction can be easily obtained, and a very large intermediate traffic may be expected.

5. That the line via Narrabri would involve only half the length of railway construction that would be necessary to connect Walgett with Mudgee, and would be the shortest route to the seaboard, and consequently afford a great saving to squatters and others desirous of shipping their wool and other produce.

6. That a large established trade exists between Walgett and different places on the Great Northern and North-western Railways, and the diversion of this traffic from its natural course by the construction of a railway in another direction would not only be injurious to the parties concerned, but would for all time compel the residents of Walgett and the surrounding districts to purchase their agricultural and other supplies at much higher rates than if the line were taken to Narrabri, besides agricultural and other supplies at much higher rates than if the line were taken to Narrabri, besides involving them in additional expense of haulage in carrying their own produce to the waterside, and creating greater difficulties and expense in moving their stock and obtaining fodder during time of drought.

7. That Coonamble is much nearer to Dubbo than it is to Mudgee, and would be more cheaply drought.

connected with it by railway.

8. That if the suggestions of your Petitioners were adopted, not only would there be a great saving to the country in capital, material, and working expenses, but the public would be better served, and a considerable loss to persons using the line would be avoided.

Your Petitioners therefore humbly pray that your Honorable House will be pleased to take the premises into consideration, and in lieu of authorizing the construction of a line of railway from Walgett to Mudgee, will sanction one from Walgett to Narrabri, and another from Coonamble to Dubbo.

And your Petitioners as in duty bound will ever pray &c.

And your Petitioners, as in duty bound, will ever pray, &c.

On behalf of the citizens of Newcastle, STEWART KEIGHTLEY, Mayor.

Newcastle, 13th October, 1884.

NEW SOUTH WALES.

RAILWAY FROM MUDGEE TO COONAMBLE.

(PETITION IN FAVOUR OF-MAYOR AND ALDERMEN AND OTHERS, OF COONAMBLE.)

Received by the Legislative Assembly, 29 August, 1884.

To the Honorable the Speaker and the Members of the Legislative Assembly of New South Wales.

The Petition of the Mayor and Aldermen of the Borough of Coonamble, and the Residents of the Town and District thereof,—

HUMBLY SHOWETH:-

- 1. That the railway route as now surveyed from Dubbo to Coonamble passes through a large portion of barren and sparsely populated country, and that great injustice would be done to a large number of settlers if that line is adopted in preference to the Mudgee line of communication with Coonamble.
- 2. That owing to Mudgee being one of the largest agricultural districts in the Colony, and the unfavourable seasons the Coonamble district suffers from, the facilities and benefits thousands would receive by being in direct communication with Mudgee would be incalculable.
- 3. That the Mudgee route to Coonamble offers benefits to the inhabitants of this district and the Colony generally, by passing through a large portion of first-class agricultural land not yet appropriated; the railway passing through the districts of Gulgong, Cobbora, Mundooran, Coonabarabran, Gilgandra, Gulargumbone, and other large centres, would benefit a far greater number than the proposed line to Dubbo.
- 4. That Goonamble district, situated as it is between Dubbo and Narrabri, and quantities of wool being often sent via the Northern line from this district, the adoption of the Mudgee line of communication would considerably ease the rolling-stock on the Western and Northern lines, and would not cause the same necessity for duplication of the lines as would most likely be the case if the Dubbo line was adopted.

5. That your Petitioners are in favour of the early extension of the North-western Railway from Mudgee to this district, with a view of its being carried on to the Queensland border; and that such a line running between the Northern and Western ones would open up a large tract of productive country, and must prove for the colonial benefit.

Your Petitioners therefore humbly pray that your Honorable House will be pleased to cause the railway line from Mudgee to Coonamble to be adopted in preference to that from Dubbo.

And your Petitioners, as in duty bound, will ever pray, &c., &c., &c.

[Here follow 386 signatures.]

NEW SOUTH WALES.

RAILWAY FROM ORANGE TO FORBES, VIA CUDAL.

Received by the Legislative Assembly, 5 June, 1884.

To the Honorable the Members of the Legislative Assembly, in Parliament assembled.

The Petition of the Inhabitants of Condobolin and surrounding district,-

HUMBLY SHOWETH :--

That your Petitioners would respectfully urge upon you the necessity of constructing a Railway from Orange direct to Forbes, via Cudal.

- 1st. That situated as at present we are, 150 miles from nearest point of Railway, viz., Orange, we are great sufferers in consequence of the high carriage we are compelled to pay to and from the nearest point of Railway.
 - 2nd. The nearest point of the Southern Railway, viz., Junee, is about 160 miles distant, and the nearest point available on the Western Line, Nyngan, is 185 miles from Condobolin.
- 3rd. Our district, which is a large and well settled one, is in consequence of this want of Railway communication completely isolated.

Your Petitioners, therefore, humbly pray that your Honorable House will give the premises your most favourable consideration, and grant such relief to your Petitioners as is equitable.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 117 signatures.]

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1883-4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY FROM BORENORE VIA CUDAL AND EUGOWRA TO FORBES.

(PETITION IN FAVOUR OF—RESIDENTS OF FORBES.)

Received by the Legislative Assembly, 17 June, 1884.

To the Legislative Assembly of New South Wales, in Parliament assembled.

May it please your Honorable House.

The Petition of the residents in and around the Town and District of Forbes,-

RESPECTFULLY SHOWETH:

That your Petitioners, residing in one of the most important and wealth-producing districts of New South Wales, are still without the advantages of railway communication.

That while main trunk lines of railway and branch railways have already been constructed, or are in course of construction, in the northern, north-western, southern, and south-western portions of the Colony for the last six years, there has been no extension of the true Western line from the town of Orange.

That the delay in railway construction down the rich valley of the Lachlan and across the western plains to the Darling River, connecting those places with the Metropolis of the Colony, has resulted in much loss to your Petitioners, and has materially retarded the progress of several important towns along the route.

That a line from Orange, via Borenore, to Molong is already in course of construction.

That Borenore is much nearer to Forbes than Molong is, and that whereas a line from Molong to Forbes would be longer and pass through inferior and very sparsely-settled country, a line from Borenore by way of Cudal and Eugowra to Forbes would be shorter, the quality of the soil better suited for agriculture, while there is a population of 5 to 1 as compared with the Molong route.

That for these, as well as for other reasons of a national character, your Petitioners pray that, should any resolution at any time come before your Honorable House, in which a line from Borenore via Cudal and Eugowra to Forbes is proposed in lieu of the extension from Molong to Forbes, it may meet with your favourable consideration and support.

And your Petitioners, as in duty bound, will ever pray, &c.

Forwarded on behalf of public meeting.

J. T. DUNN, Chairman.

1883-4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY FROM BORENORE TO FORBES.

CPETITION IN FAVOUR OF, VIA EUGOWRA-CHAIRMAN OF PUBLIC MEETING IN EUGOWRA DISTRICT.)

Received by the Legislative Assembly, 19 June, 1884.

To the Legislative Assembly of New South Wales, in Parliament assembled.

May it please your Honorable House.

The Petition of the residents in and around Eugowra,-

RESPECTFULLY SHOWETH:

That, in the year one thousand eight hundred and eighty-one, a vote was passed by your Honorable House authorizing the expenditure of £705,500 for the construction of a railway from Orange to near Forbes.

That a portion of the work, viz., from Orange to Borenore, 9 miles on the Forbes side of Orange, is now in course of construction, and will shortly be completed.

That your Petitioners own and cultivate large areas of land in the immediate neighbourhood of the proposed line from Orange to Forbes, and that by its speedy construction they would have far greater facilities for disposing of their produce to advantage than they enjoy at present.

That it has come to their knowledge that the Honorable Member for Forbes has given notice of his intention to move in your Honorable House, on the 20th day of June, one thousand eight hundred and eighty-four, that it is desirable that the construction of the said line, from Borenore to Forbes, be proceeded with without delay.

That your Petitioners earnestly pray that the motion of Mr. Stokes may have your favourable consideration and support, and that such extension, from Borenore to Forbes, may be by way of Eugowra, as being in the direct route, and passing through an important district in which there is a large settled population of bona fide agriculturists.

And your Petitioners, as in duty bound, will ever pray, &c.

ARCHIBALD M'MILLAN,

Chairman of Public Meeting, and for the residents of Eugowra District.

NEW SOUTH WALES.

RAILWAY FROM MOLONG TO MANILDRA.

(PETITION IN FAVOUR OF-JAMES A. LISCOMBE.)

Received by the Legislative Assembly, 19 June, 1884.

To the Honorable the Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the undersigned, on behalf of the people of Manildra,—

Humbly Showeth:—

1st. That your Petitioner most respectfully desires to bring under the notice of your Honorable House the necessity of calling for tenders for the further construction of the railway from Molong to Manildra, as sanctioned by Parliament, with the least possible delay.

2nd. That the late Parliament having adopted the line from Orange to near Forbes, via Molong, Manildra, &c., and the first section, Orange to Manildra, sanctioned, a large number of your Petitioners have been induced to settle along this route, on the faith of its being constructed.

3rd. That your Petitioners desire to point out that the whole of the district from Molong to Parkes contains land suitable for agriculture equal to any in the far famed Molong district.

4th. That in regard to population a much larger per-centage of the district of Molong would be benefited by the line of railway as sanctioned being adopted than could be by any divergence of the line.

5th. That your Petitioners feel grieved at the unnecessary delay in the construction of the railway to Manildra, as sanctioned by both Houses of Parliament, through (as we believe) representations which can never be borne out, viz., that a better route can be obtained.

6th. We therefore respectfully desire to urge upon your Honorable House the truth of our Petition, and pray that you will in your wisdom order that tenders for the same be called without delay.

And your Petitioners, as in duty bound, will ever pray.

JAMES A. LISCOMBE, Chairman and Hon. Secretary.

WALES. SOUTH NEW

MOLONG TO MANILDRA. RAILWAY FROM

(PETITION IN FAVOUR OF-CHAIRMAN OF MEETING AT PARKES.)

Received by the Legislative Assembly, 26 June, 1884.

To the Honorable the Members of the Legislative Assembly, in Parliament assembled.

The Petition of the undersigned, on behalf of the inhabitants of Parkes,—

HUMBLY SHOWETH:-

That your Petitioners respectfully desire to bring under your notice the necessity of at once calling for tenders for the construction of the railway west from Molong to Manildra, the same having been approved of and sanctioned by both Houses of Parliament.

That your Petitioners desire to mention the fact that money was voted by the Parliament of 1881 for the construction of the westward extension to Manildra, whereas tenders have been called for a portion of the same only.

That your Petitioners earnestly desire to impress on your Honorable House the importance of at once extending the aforesaid line, thereby opening up railway communication with large and thickly-

once extending the aforesaid line, thereby opening up railway communication with large and thickly-populated districts.

That your Petitioners are desirous of informing you that in the Parkes land district alone there are upwards of 50,000 acres of land enclosed for cultivation, of which over 5,000 acres are under crop, yielding an average this year of 18 bushels of wheat to the acre. The reason that not more of the said enclosed land is under cultivation is that the growers have not had an outlet for their produce; but the whole of the land enclosed being of undoubted richness would be cultivated if the railway was extended to Manildra, as the boundaries of our land district would thus be tapped and an immediate market created, which can only be attained by railway communication.

which can only be attained by railway communication.

That your Petitioners desire to point out that the extension now asked for is distant not more than 14 miles from Molong, is without engineering difficulties, and forms a portion of the westward extension already sanctioned by Parliament.

That your Petitioners would earnestly impress upon you the fact that a large number of selectors have taken up land and built homesteads on the good faith of the railway line being constructed in accordance with the vote by Parliament in 1881.

That your Petitioners would further submit for your consideration the fact that the proposed line would be the means of developing a vast extent of country known to be rich in gold, copper, and other

That your Petitioners respectfully pray you to carefully weigh the premises herein set forth and give them your favourable consideration.

And your Petitioners, as in duty bound, will ever pray.

JOHN WARD, J.P., Chairman of Public Meeting held at Parkes on the 17th day of June, 1884.

1883 4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY FROM ORANGE TO MANILDRA.

(PETITION IN FAVOUR OF-CHAIRMAN AND SECRETARY OF THE GARRA RAILWAY LEAGUE.)

Received by the Legislative Assembly, 19 June, 1884.

To the Honorable the Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the undersigned, on behalf of the people of Garra,—

HUMBLY SHOWETH:-

That your Petitioners desire that tenders for No. 2 section of the further extension of the railway from Orange to Manildra, be invited for the construction of the work without delay, especially as the same has been affirmed by both Houses of Parliament.

2nd. Garra, we desire to impress upon you, is the centre of a large agricultural population, and was visited by your late colleague Mr. G. H. Reid, at the opening of the Public School in August last, and which numbered 70 to 80 pupils on its roll, which we think is ample proof of the settlement and progress of the district, also two well attended churches.

3rd. That the extension of this railway we feel sure will pay a high rate of interest on the capital invested.

4th. That your Petitioners have every confidence in the justice and reasonableness of their claim to have the further extension of this line pushed forward without delay, so as to enable farmers and other settlers a chance of getting their produce conveyed to a suitable market.

5th. That your Petitioners therefore most respectfully pray that no time be lost in inviting tenders for the construction of No. 2 section of railway from Orange to Manildra.

And your Petitioners, as in duty bound, will ever pray.

JOHN RUBIE, Chairman.

JAMES A. LISCOMBE, Hon. Secretary.

Garra Railway League, 17/6/84.

1883-4

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY TO WILCANNIA.

(PETITION IN FAVOUR OF-RESIDENTS OF WILCANNIA.)

Received by the Legislative Assembly, 13 August, 1884.

To the Honorable the Speaker and Members of the Legislative Assembly of the Colony of New South Wales, in Parliament assembled.

The humble Petition of the undersigned residents of Wilcannia and the surrounding district,—
RESPECTFULLY SHOWETH:—

That the town of Wilcannia and the surrounding district are very much in need of a regular and speedy means of communication with the metropolis and other centres of population.

That the only means at present of obtaining supplies of provisions for the said town and district is by the river Darling, which is only navigable at distant and uncertain intervals.

That in times of severe drought, and when the Darling is low, the inhabitants of the said town and district are frequently without the common necessaries of life, and the prices of such articles as can be obtained are increased enormously.

That when the Darling River is unnavigable, graziers are unable to send away their wool, which occasions very great losses. As an instance, the clip of 1883 is still in the sheds, with every prospect of remaining for months, unless heavy rains fall at the head of the said river.

That a very large trade in the export of wool, at least 30,000 bales per annum, and import of all kinds of stores, is carried on between the said town and district and Melbourne and Adelaide.

That the said trade would be in a very great measure if not entirely diverted to Sydney if a Railway were constructed to Wilcannia.

That Wilcannia is the natural emporium for the supply of an immense area of pastoral and mineral country, extending to the north and north-west as far as the Queensland and South Australian boundaries.

That beyond doubt when the country immediately surrounding Wilcannia is thoroughly prospected minerals of great value will be discovered.

That were the said district connected by rail with Sydney, graziers could in times of drought remove their stock to places where feed and water are plentiful, and thus avert the losses which have been so heavy during the last few years.

That your Petitioners are of opinion that the best route for such Railway is from Nyngan to Wilcannia via Cobar, as it lies through an entirely level country, and presents no engineering difficulties of any importance.

Your Petitioners therefore humbly pray that you will be pleased to direct that steps be taken without delay for the construction of a Railway to Wilcannia by the route suggested.

And your Petitioners, as n duty bound, will ever pray.

[Here follow 815 signatures.]

SOUTH WALES.

RAILWAY FROM NYNGAN TO WILCANNIA VIA COBAR.

(PETITION IN FAVOUR OF-RESIDENTS OF COBAR.)

Received by the Legislative Assembly, 27 August, 1884.

To the Honorable the Speakers and Members of the Legislative Assembly, in the Colony of New South Wales, in Parliament assembled.

The humble Petition of the undersigned Residents of Cobar and district,-

RESPECTFULLY SHOWETH:

That your Petitioners are desirous of having railway communication, and, in support of their request, urge the favourable consideration of this Honorable House to a few facts embodied in this Petition.

That it is suggested by your Petitioners the most urgent line for railway communication in the Colony deserving immediate consideration would be a branch line from Nyngan to Wilcannia via Cobar.

That the distance from Nyngan to Cobar is 81 miles, and from Cobar to Wilcannia 130 miles.

That as a line of railway is proposed from Hay, via Menindie, to Silverton, which, if constructed, would probably be preventative to the line from Nyngan via Cobar to Wilcannia, your Petitioners respectfully appeal to this Honorable House for a due consideration of their rights; and having that in view, beg to set out certain facts showing the advantages of constructing a line of railway as requested by your Petitioners; at the same time there is no intention of raising a voice against a railway from Hay to Silverton, via Menindie, except that your Petitioners consider, if only one line is intended, that the one via Cobar has much better claim for railway extension than the other.

That Hay to Menindie is about equal distance with Nyngan to Wilcannia, via Cobar; the latter line is entirely free from engineering difficulties, the country being slightly undulating and having a complete absence of anything approaching a hill, with no rivers nor creeks, and plenty of ballast for railway purposes. That from Hay to Silverton, via Menindie, would require to pass through a quantity of flooded country, and necessarily entail an enormous expense for the construction of such a line in comparison with the one suggested by your Petitioners, and that the last-mentioned line would pass large pastoral districts of good character, and would strike the river Darling at such a point as would command the greatest facility for competing with the river Darling trade. greatest facility for competing with the river Darling trade.

That Cobar is situated directly in a line with Wilcannia for railway communication, and it alone, your Petitioners consider, is entitled to a railway, inasmuch as its sources are of very great importance, which a glance at a few figures mentioned herein will show. The town itself has a population of about 3,000 inhabitants, and it is supported by a copper-mine known as the Great Cobar Mine, which perhaps might be justly called the richest in the world, yielding no less than 3,000 tons of copper smally called. might be justly called the richest in the world, yielding no less than 3,000 tons of copper annually, equal to £165,000 in value, and the carriage on which to Nyngan at the present time would be equal to £18,000, and a like amount is paid by the same Company for return loading, equalling a total of £36,000, for carriage per annum.

That over 70,000 tons of wood have been consumed during the last year for smelting purposes by the mine, and that in a short while from now the wood will be becoming scarce, and as a consequence coal will have to be adopted in lieu of same; and with the present number of furnaces used for smelting, it is estimated 30,000 tons of coal would be consumed annually, and that it would no doubt cause the development of a coal-mine, which is considered to be in existence near Dubbo, and only requires a market, which Cobar would afford, if railway communication were extended, and would also be the means of opening up the Mount Brown Gold-fields, lying north of Wilcannia.

That a railway being once at Wilcannia, the whole of the wool now despatched from that district to Melbourne and Adelaide would in a short time head its way to Sydney, owing to the river Darling being so often unnavigable, and would also secure a great portion of Queensland and South Australian trade. The wool clip for 1883 is lying in the sheds, the graziers being unable to despatch same, owing to the river being unnavigable.

That Cobar district depastures over 1,500,000 sheep, the product from which amounted to 14,450 bales of wool last year. The holdings are not half stocked, owing to the difficulty in obtaining goods, and wire, and other articles requisite, which is occasioned through there being no cheap means of transit.

That Nymagee Copper-mine is so situated that a railway via Cobar would confer a great benefit to the mining industry carried on there, which is now almost equal to Cobar.

That Silverton is at present held by large speculators of Victoria and South Australia, and there is nothing to prove its permanency.

That, finally, your Petitioners respectfully impress upon this Honorable House the fairness of their claim, and beg to say that the line for which they ask railway communication is the more direct, would prove the most remunerative, would cost less, would benefit a greater number of inhabitants, and open up better country than any line of railway to any other portion of the river Darling. And your Petitioners rest fully assured that incontrovertible facts as the above are all that is needed to guide this Honorable House to a compliance herewith.

And your Petitioners respectfully pray that the objects of the above Petition may meet with your approval, and the requests herein contained granted.

And, as in duty bound, will ever pray, &c., &c.

[Here follow 251 signatures.]

NEW SOUTH WALES.

RAILWAY TO SILVERTON.

(PETITION IN FAVOUR OF-RESIDENTS OF MENINDIE.)

Received by the Legislative Assembly, 17 September, 1884.

To the Honorable the Speaker and Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned Residents of the town and neighbourhood of Menindie,—HUMBLY SHOWETH:—

That your Petitioners, being impressed with the importance to the Colony at large of the opening up of the district between Sydney and the Silver-mines in the Barrier Ranges by means of a railway, beg to approach your Honorable House, urging the necessity of such railway being undertaken with the least possible delay.

That your Petitioners, having in view the great outlay a railway would entail, are of opinion that the route from Hay, via Menindie to Silverton, being the shortest and presenting the fewest engineering difficulties, is the one that ought to be adopted.

That the advantages accruing to the Colony by the adoption of this route would be incalculable, inasmuch as it would run through one of the largest and best meat and wool producing districts in Australia, the produce of which in live stock and wool, besides untold quantities of silver and other ores, would find its way to Sydney instead of, as at present, to Melbourne and Adelaide.

That the adoption of other longer routes suggested to your Honorable House would give the sister Colony of South Australia an undue advantage, the terminus of her north-eastern line being distant from Silverton only about 200 miles, and that line extended to the border would naturally attract the traffic of this district, the difference of carriage occasioned by the longer route rendering trade with Sydney impossible.

That your Petitioners could urge many other reasons for the adoption of the route indicated, but think those stated sufficient for the consideration of your Honorable House.

Your Petitioners therefore pray that your Honorable House will take the premises into your most serious consideration, and grant the prayer of their Petition.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 40 signature.]

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NEW SOUTH WALES.

RAILWAY TO FISH RIVER CAVES.

(PETITION IN FAVOUR OF—RESIDENTS OF OBERON AND OTHERS.)

Received by the Legislative Assembly, 16 January, 1884.

To the Honorable the Speaker and the Members of the Parliament of New South Wales, in Parliament assembled.

The Petition of the undersigned Residents of Oberon, Gingkin, Abercrombie, Bathurst, Little-River, Burraga, Swatchfield, Shooter's Hill, and Sydney and its Suburbs,—

RESPECTFULLY SHOWETH:

That there is in the district surrounding Oberon a large area of good agricultural land, several thousand acres of which have not yet been alienated. The land is well adapted for the cultivation of wheat, barley, oats, rye, tobacco, and potatoes. The district [also abounds in minerals. There are forests of as fine blackbutt and mountain ash timber in the district as there are in the Colony. There is also abundance of limestone. Many of your Petitioners suffer loss through having no good way of transit to market, as they cannot cultivate as much as they would, and every year hundreds of tons of straw are wasted. There is also every year large numbers of visitors to the Fish River Caves, and the numbers increase every year.

Your Petitioners therefore respectfully pray that a light line of Railway may be made from Tarana to the Fish River Caves, via Oberon.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 3,037 signatures.]

NEW SOUTH WALES.

SOUTHERN & SOUTH-WESTERN RAILWAYS.

(PETITION AGAINST INEFFICIENT WORKING OF-RESIDENTS OF WAGGA WAGGA.)

Received by the Legislative Assembly, 20 February, 1884.

To the Honorable the Speaker and Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The humble Petition of the undersigned residents and inhabitants of the District of Wagga Wagga,-

HUMBLY SHOWETH:

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- 1. That it has day by day become more apparent that the present arrangements for the effective working of railways on the Southern and South-western Lines are inefficient and not conducive to the public convenience or welfare.
 - 2. That to show that this is so the following facts are quoted:—
 - 1st. That when the railway was opened as far as North Wagga Wagga, only about 2 miles from the Murrumbidgee, now known as Bomen, very great expense was incurred by the Department in erecting engine-sheds, goods-sheds, turn-tables, homes for railway employés, and particularly in procuring a water supply for the use of the engines.
 - 2nd. That when the extension across the Murrumbidgee River to South Wagga Wagga was opened, again very great expense was incurred in the erection of engine-sheds, goods-sheds, turn-tables, and cottages for employés. This latter expense is estimated by people who are well able to judge at a little over eight thousand pounds (£8,000).
 - 3rd. That this expense was gone to because it was found expedient to remove the engines from North Wagga Wagga, where, although but 2 miles from the river, it was found impossible to procure a full and proper supply of water for locomotive purposes.
 - 4th. That arrangements were made at South Wagga Wagga by the erection of pumping machinery and tanks, whereby a constant supply from the Murrumbidgee River was obtained, and that the cost of construction of such works was considerable.
 - 5th. That lately the whole of the locomotive plant has been removed from South Wagga Wagga to Junee Junction, and therefore the costly buildings and plant, at Bomen and South Wagga Wagga now lie empty, and by reason of disuse are falling into disrepair, buildings and plant, too, which cost the country, at the very lowest, approximately, twelve thousand pounds (£12,000).
 - 6th. That without any warning whatever, without any reason being given, the whole of the staff and engines were by one stroke of the departmental pen, removed to Junes Junction, a place which was never intended by the engineers who constructed the line as a head locomotive station, because they were aware, and Mr. Whitton still asserts, that on account of its natural disadvantages, and by reason of there being no permanent water there, Junes Junction is unfitted for such a station, and the costly appliances erected by the Government at Bomen and South Wagga Wagga, at the expense of the Colony, rendered
- 3. That to still further point to the necessity for an inquiry into the abuses said to have arisen from this removal of the locomotive staff to Junee Junction, the following facts are quoted:
 - 1st. That the most essential element for the proper working of locomotives, and therefore of the railway lines, is entirely wanting at Junee Junction—that element is water. Bore after bore has been put down by the Government, and yet no water has been reached sufficient in quantity to meet the demands of the Locomotive Department, and experts affirm that the formation of the country at and around Junee Junction precludes any probability that water will ever be obtained there by sinking. water will ever be obtained there by sinking.
 - 2nd. That owing to this entire absence of water at Junee Junction, the Colony is put to great expense, because all the water used at that place has to be drawn either from Wagga Wagga (a distance of 22 miles), Narrandera (a distance of 61 miles), or Yass (a distance of 100 miles).

3rd.

- 3rd. That from the places named in section 2, over thirty thousand gallons (30,000) of water are drawn to Junee Junction weekly at an approximate cost to the Colony of not less than four thousand pounds (£4,000) yearly.
- 4th. That owing to there being no water in sufficient quantity at Junee Junction to wash out the boilers, the nearest places being Narrandera (61 miles), Wagga Wagga (22 miles), and Harden (59 miles), the engines stationed at Junee Junction are becoming deteriorated in value, for the water which is used being mainly drawn from Hammond's dam, purchased at great cost by the Government, a mere surface drainage water, now rapidly drying up, is necessarily very muddy; and the fact that there is insufficient water to wash out the boilers at Junee Junction, combined with the fact that it is impossible to get a supply of water nearer than the places abovenamed for washing-out purposes, leads to a condition of the boilers which means absolute deterioration, loss of power, and liability to accident.
- 5th. Owing to the want of a full supply of water, which at all times it is now impossible to obtain, engines are unable to perform their work, and as a consequence trains run late, much to the inconvenience of travellers. This inefficiency of trainage power, too, must some day lead to a deplorable accident, the dread of which must militate against the use of the railways to the travelling public.
- 4. That again, to show that there is no necessity for bolstering up Junee Junction at so much loss to the Colony, it is affirmed that by making the stages shorter, that is, from Harden to Narrandera, from Narrandera to Hay, from Harden to Wagga Wagga, and from Wagga Wagga to Albury, the haulage of coals over the distance from Wagga Wagga to Albury, and from Narrandera to Hay, would be unnecessary, and thereby a great saving would be made to the State. That on these short stages Lithgow coal could be used, whereas to enable the engines to travel the long stages it is necessary to have coal carried all the way from Newcastle.
- 5. That your Petitioners deem that they have laid sufficient facts before your Honorable House to warrant it in granting the prayer of their petition.

Your Petitioners therefore humbly pray that your Honorable House may be pleased to appoint a Select Committee to inquire into the beforementioned matters, with power to call for persons and papers.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 489 Signatures.]

Sydney: Thomas Richards, Government Printer.—1884

LEGISLATIVE ASSEMBLY.

WALES. NEW SOUTH

RAILWAY BRIDGE OVER THE MURRUMBIDGEE RI

(PETITION AGAINST-RESIDENTS OF WAGGA WAGGA, HAY, AND NARRANDERA.)

Received by the Legislative Assembly, 19 February, 1884.

To the Honorable the Speaker and Members of the Legislative Assembly of New South Wales.

This, the Petition of residents in and around Wagga, Hay, and Narandera, in the Colony aforesaid:-

HUMBLY SHOWETH:

That, notwithstanding the repeated representations of your Petitioners to the Railway Department upon the subject, it is intended to erect the railway bridge over the Murrumbidgee River, upon the Narandera Jerilderie line, at a height of only 22 feet above summer level.

That if such course be persisted in, the navigation of the river will be stopped when the stream is moderately high, and available as a valuable water-highway; in addition to this the extremely low level proposed will endanger the safety of the structure.

That certified statements from residents have been forwarded to the Department to the effect that the river has, upon more than one occasion, within the memory of such residents, reached a height of 25 feet above summer level.

That the bridge could, at comparatively slight cost, be raised 10 feet above the proposed height, whereby the traffic would not only be uninterrupted but the security of the structure ensured.

That the suggestion by the Hon. the Minister for Works, that the funnels of the steamers plying the river be hinged, could not be effectively carried out. The shallowness of the watercourse in many places necessitates the use of boats of extremely light draught, the cargo being stacked high above the deck line—in many cases within a short distance of the top of the funnel. Again, the sharp turns in the river render it necessary to erect the wheel house at a considerable elevation. river render it necessary to erect the wheel-house at a considerable elevation.

Your Petitioners pray that your Honorable House will not permit a large and valuable river trade to be interfered with, but will cause an inquiry to be made into the circumstances of the case.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 231 signatures.]

1883.

(THIRD SESSION.)

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY TO DENILIQUIN.

(PETITION IN FAVOUR OF-RESIDENTS OF DENILIQUIN.)

Received by the Legislative Assembly, 16 October, 1883.

To the Honorable the Speaker and Members of the Legislative Assembly of the Colony of New South Wales, in Parliament assembled.

The Petition of the undersigned Residents and Property-holders of the Town and District of Deniliquin, in the Colony of New South Wales,—

RESPECTFULLY SHOWETH:--

- 1. That the proposed line of Railway about to be constructed from Narrandera to Jerilderie will terminate at a point distant about 44 miles only in a direct line from the town of Deniliquin, and your Petitioners are desirous that the line may be carried to, and Deniliquin made the terminus of, that extension.
- 2. That Deniliquin is, and from its geographical position must always continue to be, the chief town in the rich and fertile district of Southern Riverina.
- 3. That the population of the district of which Deniliquin is the centre of trade numbers upwards of 7,000 souls.
 - 4. That the town of Deniliquin proper contains at present a population of upwards of 3,000 persons.
- 5. That the town has been incorporated as a municipality for the last fifteen years, and contains at present ratable property to the value of £250,000, with 8 miles of made streets.
- 6. That no less a number than 1,250,000 sheep (besides large numbers of horned cattle and horses) are depastured in the immediate district, returning an annual produce in wool of 30,000 bales, valued at upwards of £600,000.
- 7. That the revenue received during the last five years at the Customs-house in Deniliquin on goods imported from Victoria is shown by the returns to amount to £110,000, the entries showing a steady annual increase in number and value.
- 8. That during the last ten years upwards of £2,000,000 sterling have been received by the Government from the land revenue alone in this district, and all other sources of revenue have contributed proportionately large sums to the Treasury.
- 9. That the whole of the land in the district is admirably adapted for the growth of cereals and other crops, increasingly large areas being annually brought under cultivation, and the average yield proving about 20 bushels of wheat to the acre.
- 10. That your Petitioners would respectfully point out that there are no made Government roads (properly so-called) in the district, owing to the absence of suitable material, the work of the Roads Department being confined to clearing the track and forming the road with earth without metal or other road-making material, and as a consequence in wet weather traffic is almost suspended.
- 11. That roads properly constructed with burnt clay (the only substitute for stone, and of which the streets of the town are composed), on the Macadam principle, cost upwards of £3,000 per mile, or a little more than the cost of laying down a line of Railway.
 - 12. That the whole length of the line from Jerilderie to Deniliquin will not exceed 44 miles.
- 13. That the country to be traversed consists of plains and open box country perfectly level throughout. There are no creeks to be crossed, or bridges or viaducts to be made, and the whole work is totally devoid of engineering difficulty.
- 14. That your Petitioners are informed and verily believe that abundance of suitable material, both timber and ballast, can be obtained within easy distance of the proposed line, and that the Railway can be constructed between the two points at a cheaper rate per mile than any line yet constructed in the Colony, and at a cost below what would be required for the formation of an ordinary macadamised road.

15. That your Petitioners and the residents of the district generally have no sympathy with the protective policy of the neighbouring Colony of Victoria, with which they have been compelled to trade by reason only of the isolated position they are in with regard to the metropolitan city of their own

16. That your Petitioners and the residents of this district generally feel the burden of Victorian taxation, and especially the poorer classes, who, in buying their commodities out of bond in Victoria, pay as well the heavy taxes imposed by that Colony as the import dues of New South Wales; and, on the other hand, the Victorian border duties, especially the stock tax and the tax on wheat of £2 per ton, detract

greatly from the profits of their produce.

17. That your Petitioners, in order to reap the benefits of free trade, are anxious to open up trade intercourse with Sydney, even at present it being found more profitable to both storekeeper and consumer to purchase several important lines of merchandise in Sydney, bringing them by shipboard to Melbourne and through Victoria in bond to Deniliquin, than to buy in the Victorian market; and the only obstacle in the way of the whole of the large and important trade of this district being carried on with Sydney is the great delay and expense attending the delivery of goods at their destination, it being by no means an unknown circumstance for trade bills to have matured before the arrival of the goods for which they were given.

18. That the construction of a line from Jerilderie to Deniliquin will open up a large and fertile district on either side, besides attracting the Balranald, Moulamein, and Lower Edward River trade, and by placing this large district in direct communication with the metropolis, while developing its natural wealth, will not only benefit the residents of the district but also establish on a lasting basis trade with Sydney, and the freights earned will yield good returns on the small outlay required for the completion of the work.

Your Petitioners therefore humbly pray that your Honorable House, upon consideration of the matter above set forth, will recognize the justice of your Petitioners' claim to a direct Railway communication with Sydney, and that you will cause such steps to be taken for the speedy construction of the line from Jerilderie to Deniliquin as to vou in your wisdom may seem fit.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 340 signatures.]

1883-4:

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

RAILWAY FROM JERILDERIE TO DENILIQUIN.

(PETITION-DENILIQUIN AND JERILDERIE RAILWAY EXTENSION LEAGUE.)

Received by the Legislative Assembly, 2 September, 1884.

To the Honorable the Speaker and Members of the Legislative Assembly of the Colony of New South. Wales, in Parliament assembled.

The Petition of the undersigned Members of the Executive Committee appointed by the Deniliquin and Jerilderie Railway Extension League,—

RESPECTFULLY SHOWETH:

- 1. That, as a consequence of the early completion of the railway from Narrandera to Jerilderie, the town of Deniliquin and intervening district will continue to be placed at as serious a disadvantage as hitherto unless the line be continued to the latter town and direct communication established with Sydney.
- 2. That residents and others, travelling overland to Sydney via Hay, have now to make a detour of 80 miles by coach at night to reach the main line of railway, and that if Jerilderie be made the terminus of the extension nearing completion there will still be a distance exceeding 60 miles to be traversed in this manner.
- 3. That the opening of the line to Jerilderie will result in an extensive trade in passengers and merchandise between Deniliquin and Sydney. This, in the absence of a railway, will necessitate the formation of a traffic road, the cost of which, where road metal has to be made from burned clay, will equal that of a light line of railway. Your Petitioners respectfully submit that the only way the progress and prosperity of the rich flat plains of this district can be developed is by introducing a type of railway that will afford safety and security at a minimum of cost.
- 4. That the importance of the district of Deniliquin, from population, prosperity in stock and land, returns from Customs, land, and other sources, entitle it to be linked on to a main line of railway. If excluded from this privilege, its inhabitants are placed at a serious disadvantage socially and commercially.
- 5. That your Petitioners would respectfully point out that the line in question presents no engineering difficulties to contend with. The intervening country between Jerilderie and Deniliquin is perfectly flat, a few inexpensive culverts sufficing to carry the line through. A trial survey, taken some years ago, made its length about forty-four (44) miles. The outlay required for an extension of the character indicated would be exceedingly limited, and the return in the way of interest would no doubt be ample.
- 6. That your Petitioners respectfully desire to call attention to a petition presented to your Honorable House in the month of October, 1883, from the residents and property-holders of the town and district of Deniliquin, praying for the concession now referred to, and setting forth in detail many reasons to induce your Honorable House to favour the views of your Petitioners. The statements therein made still hold good.

Your Petitioners therefore humbly pray that your Honorable House will give the making of this line its favourable consideration; and that in any system of national railway extension that may come to be discussed, a line from Jerilderie to Deniliquin shall be included.

And your Petitioners, as in duty bound, will ever pray.

[Here follow 14 signatures.]

1883-

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

MIDALE AND GLEN INNES RAILWAY CONTRACTOR.

(PETITION COMPLAINING OF-RESIDENTS OF ARMIDALE.)

Received by the Legislative Assembly, 22 July, 1884.

To the Honorable the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of the undersigned residents of the City of Armidale,-

HUMBLY SHOWETH:

That the extension of the Great Northern Railway line between Armidale and Glen Innes is sufficiently constructed to permit the Contractor, David Proudfoot, Esquire, to run trains between the abovementioned places, although we are informed and believe the said extension will not be completed and handed over to the Government of this Colony and opened for traffic for some months to come.

The said David Proudfoot is, and has been for some time past, constantly and regularly running trains between Armidale and Glen Innes upon the said railway line, and carrying passengers and goods between the said places by means thereof for hire, to the great detriment and loss of your Petitioners and the inhabitants generally of Armidale aforesaid.

Your Petitioners are informed and believe that it has been represented to the Railway Department and the Government of the Colony that carriage by teams between Armidale and Glen Innes aforesaid could not be obtained, and that therefore it would greatly convenience the public to allow the said David Proudfoot to carry goods and passengers as aforesaid, but your Petitioners are well aware that such is not the case, and that such carriage by teams is plentiful and easily procurable.

Your Petitioners are further informed and believe that the moneys received by the said David

Proudfoot for such passenger and goods traffic as aforesaid are divided between the said David Proudfoot and a large number of forwarding agents, and a large firm of mail contractors, who are thereby deriving large profits at the expense of the general public of Armidale aforesaid and the surrounding districts.

Should the said David Proudfoot be allowed to continue the said traffic until the formal opening of

the said extension for public traffic, your Petitioners will sustain very great loss and hardship, and the

carrying trade of Armidale and the surrounding districts will be utterly ruined.

Your Petitioners therefore humbly pray that your Honorable Assembly will cause steps to be taken to prevent the said David Proudfoot from continuing and prosecuting the said traffic, and that your Petitioners may be afforded such further relief as to your Honorable Assembly may seem fit.

And your Petitioners will ever pray, &c. Dated this fourteenth day of June, A.D. 1884.

(Here follow 126 signatures.)

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

CATHERINE BUTTERLY.

(PETITION OF.)

Received by the Legislative Assembly, 2 October, 1884.

To the Honorable the Speaker and the Members of the Legislative Assembly of the Colony of New South Wales, in Parliament assembled.

The humble Petition of Catherine Butterly, of Sydney, in the Colony of New South Wales, widow,—

HUMBLY SHOWETH:-

- 1. That your Petitioner's late son, Stephen Butterly, deceased, was an employé in the New South Wales Government Railways in the year 1882, and was employed at Blayney, on the Great Western line, in the capacity of railway platform porter.
- 2. That your Petitioner's said deceased son, by his earnings as such employé, was the only support of your Petitioner and her daughter.
- 3. That in the exercise of his duties as such employé the said deceased had occasionally to assist at shunting and other railway work.
- 4. That on the morning of Monday, the twentieth November, 1882, upon the arrival at Blayney aforesaid of the daily morning train from Bathurst, the deceased, with several other men at the Blayney Station, was required to detach some waggons or trucks from the said train.
- 5. That during shunting, and whilst being engaged in coupling one of the waggons, the said deceased, in trying to get out of the way of some approaching trucks, got jammed between the buffers of the waggons he had been endeavouring to couple, and was so seriously injured that he died almost immediately.
- 6. That your Petitioner's said deceased son was a young man of steady habits and quiet disposition, and respected by all his fellow employés, zealous in his work, and anxious to acquire the knowledge requisite to enable him to rise in his vocation the better to enable him to support his mother, your Petitioner; and that the lamentable accident which caused his untimely death, and left your Petitioner in almost destitute circumstances, could not in the remotest way be attributed to any want of care, diligence, or forethought on his part.

Your Petitioner therefore humbly prays that your Honorable House will kindly take the foregoing statement into your favourable consideration, and be pleased to take such steps as will recompense in some measure the irreparable loss sustained by her through the death of her only son whilst in the execution of his duty, who was her only support.

And your Petitioner, as in duty bound, will ever pray.

 $\begin{array}{c} \text{her} \\ \text{CATHERINE} \times \text{BUTTERLY}. \end{array}$

Witness-N. MELVILLE, 1/10/84.

mark 503, Cleveland-street; Darlington.

1883-4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

GOVERNMENT TRAMWAYS.

(REGULATIONS AND INSTRUCTIONS FOR CONDUCT OF TRAFFIC)

Ordered by the Legislative Assembly to be printed, 25 March, 1884.

[Laid upon the Table of the Legislative Assembly in accordance with promise made by the Secretary for Public Works, in answer to Question No 3 of the 25th March, 1884]

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GENERAL REGULATIONS.

THE following Code of Rules and Regulations made by the Commissioner for Railways, by virtue of the powers and authorities vested in him by the Government Railways Act, 1858, and Tramways Extension Act of 1880, having been approved by His Excellency the Governor and Executive Council, are hereby adopted for the guidance and instruction of the officers and men in the service of the Commissioner, and all former Rules and Regulations inconsistent with the same are hereby cancelled.

Every person in the service of the Commissioner shall be provided with a copy of these Regulations. He is strictly enjoined to read the whole, and make himself thoroughly acquainted with them, as no plea of ignorance of any Rule will be allowed as an extenuation of a fault, but will be considered rather as an aggrävation.

> Signed by the Commissioner, and sealed with his common Seal, at Sydney, the 22nd day of January, 1884.

CHAS. A. GOODCHAP, (L.S.)

Commissioner for Railways.

In the presence of—

D. VERNON,

Secretary.

RULES AND REGULATIONS.

SECTION 1.

Instructions and Rules of General Application.

Instructions and Rules of General Application.

1. Every employé shall devote himself exclusively to the service, whether his duties are specified or not, with zeal and fidelity; he shall attend at such hours as may be prescribed, and consider himself on duty when on the Tramway line or premises, although it may not be his regular time of attendance; keep the head of his department informed of his address, giving due notice of any change in the same; obey promptly all instructions he may receive from the officers under whose immediate control he is and persons placed in authority over him, and repair to any part of the Tramway whither he may be ordered; he shall conform to all the by-laws and regulations of the department, as well as use his best exertions to enforce obedience to the by-laws by passengers and others, and not suffer anything to be done whereby the department may suffer loss or damage; and he shall constantly bear in mind that his first and most important duty is to provide for the safety of the public.

2. He shall conduct himself with courtesy and respect, and be prompt, attentive, civil, and obliging while at the same time firm, to the passengers, poor as well as rich, under all circumstances; he shall never give an abrupt reply, but make respectful answers to every inquiry, and give his name without hesitation to persons requiring to know it, taking care that his manner is not such as to cause offence. Should this order be carefully attended to, the Commissioner will always support his employés and protect them from insult, whereas violent conduct or offensive language, no matter whether provoked or not, will be looked upon as a proof of incompetency.

will be looked upon as a proof of incompetency.

3. The slightest insobriety in any official or smoking when on duty on the Tramway line, premises, cars, or engines, will be followed by immediate suspension and subsequent fine or dismissal.

4. No employé is allowed to trade either directly or indirectly without the special permission in

writing of the Commissioner.

- 5. Any servant using improper language or entering into any altercation with the public or his fellow-servants, whatever provocation may be given; absenting himself without leave; being guilty of disobedience of orders, negligence, or other misconduct; or being incompetent; will be liable to immediate
- 6. Every servant is to come on duty clean and neat in his person and dress; if provided with uniform, he must appear in it in proper order.
 7. The acceptance of any fee, gift, or gratuity is strictly forbidden under any pretence whatever,

under pain of fine or dismissal.

8. No employé is allowed to convert to his own use any article the property of the Government, and the fact of the article appearing to be waste or useless will not form any excuse for its private appropriation. Every servant will be expected to inform his superior officer *immediately* of any property which he may observe exposed and liable to loss or waste, and to deliver up to him any property he may

9. All conductors, or others holding situations of trust, or who may have to render accounts of any kind or collect moneys, will be required to find security for their honesty and faithfulness, of such kind and in such manner as the Commissioner may require.

10. The pay of all officers and servants will be stopped from the moment of their being suspended, and the pay will not be allowed except in the event of entire acquittal of the charge for which the person was suspended.

was suspended.

The Commissioner reserves the right to deduct from the pay any fine imposed for neglect of duty, and no officer or servant must during suspension enter upon any part of the Tramway premises, or

perform any duties thereof.

11. No officer or servant (unless temporarily employed) will be allowed to leave the service without giving fourteen days' previous notice in writing of his intention to do so under the pain of forfeiting any salary or wages which may be due. He will also be held liable for any loss, damage, inconvenience, or expense which may be occasioned by his leaving without giving such notice. The Commissioner reserves the right of dismissing any employé without previous notice, but such a summary course will not be adopted in the case of any servant who has been faithful, honest, and zealous in the performance of his duties.

12. No servant on leaving the service will be paid any money due to him until he shall have delivered in his books, returns, tools, and other property of the Government; and if any such article shall have been improperly used or damaged a deduction from any pay due to the man will be made sufficient to cover the damage or supply a new article; or if the pay due be insufficient for that purpose,

he will be liable to make good the same.

13. At the head office of each branch a book shall be kept by the officer in charge in which all minor faults or irregularities of subordinate officers or servants shall be inserted at the time the offence is discovered, and the entry shall be notified to the offender; and general charges made against any subordinate officer or servant will not be entertained unless so recorded.

14. Certificates of good conduct may be issued only by the head of the department (and with the consent of the Commissioner) if he sees fit, but no such certificates will be granted under the following

conditions:

1st. If the man for whom the certificate is required shall have been frequently guilty of misconduct, although of a light nature, or has been found incompetent for his duty.

2nd. If he shall have been guilty of any misconduct of a serious nature, or have been dismissed

or discharged under strong suspicions of dishonesty.

3rd. If he shall have quitted the service without having given due notice of his intention to do so, or without giving up books, tools, &c., the property of the Government.

15. Any servant being unable through sickness or just cause to attend to his duties must send notice in writing to his immediate superior officer in time for him to provide for the performance of his duties; in case of sickness he must produce a certificate from a properly qualified medical man; but if the sickness be not of a sufficiently serious character to need the service of a doctor, and the absence only extends over one day, leave of absence for that period may be granted by applicant's immediate superior officer. Employés not observing this rule will be treated as absent without leave.

16. Officers or servants of the Department are not to take legal proceedings on behalf of the Commissioner, nor show any document or book to persons not connected with the Department; nor deal with any communication on a subject for which they have no precedent, or with doubtful questions, nor to communicate directly or indirectly with the public Press, or any person or persons, without first obtain-

ing the Commissioner's instructions.

17. On the change of duties between the day and night staff all circumstances which may have occurred out of the ordinary course must be communicated to the man coming on duty as relief, and

before he takes charge.

18. No person employed in any capacity shall give up charge to any other person whose duty it may be to relieve him, unless the person being relieved shall be satisfied of the perfect sobriety of the person whose duty it may be to relieve him. And if any person gives up his charge to anyone who may be in a state of intoxication, both the person relieved and relieving will be held responsible, and punished

accordingly.

19. Each servant is required to make himself thoroughly acquainted with all rules furnished him, and especially those which may in any way apply to himself; to obey them and use his best exertions to

carry them into effect. He is also to obey and carry out all general orders and instructions issued to him, and he must keep a copy of the rules, to be obtained by application to his immediate superior officer, constantly with him while on duty.

20. Each servant is required to report to his superior officer every instance of damage, derangement, or irregularity, or violation of these rules (or other instructions) of any kind whatsoever that may come under his notice, if possible on the same day, but on no account later than the morning following such occurrence. Messages and reports are at all times to be made in writing. Every notice or communication is to be acknowledged in writing.

21. Every officer is responsible for each person under his control, keeping the proper records, books, accounts, and returns, applicable to his duties. Any officer or servant failing to report an occurrence or matter that ought to be reported will incur the same responsibility as if he had been the

person in fault.

22. All men receiving daily wages will only be paid for the time they are actually at work.

23. Every person who may consider himself aggrieved has the right to appeal to the Commissioner for Railways, which he must do by letter, through his immediate superior, who will transmit it in the usual course.

SECTION II.

Instructions to Drivers and Firemen.

24. Every driver must be with his engine thirty minutes previous to his time of leaving the shed to start with the tram fixed for him; he will be responsible for having his engine in order, and a proper supply of tools, &c., and must be ready to start at least ten minutes before the time appointed for starting.

25. The fireman must be with his engine one hour previous to his time for starting from the shed;

he must have steam up, the water-tank filled, and a proper supply of fuel, oil, &c., with all necessary tools, destination flags, lamps, &c.; he must be ready to start ten minutes before the appointed time, and will be at all times under the control of the driver.

26. Every driver while on duty must have a copy of the time-bill for the current period and a

copy of this book of rules on his person.

- 27. Before starting with any tram the driver must see that it is properly coupled; after that time and until the end of the journey he will receive his orders from the conductor in all matters affecting the starting, stopping, or movements of the tram.
- 28. Great caution must be used in placing the engine against the tram, which must be done without moving the carriages, in order to guard against injury to any passenger who may be stepping into or getting out of a carriage at the time. Flying shunts are strictly forbidden.

The driver must be careful always to start and stop steadily, and without jerking the tram.

- 29. At sunset, when it is getting dark, and before it is dark, the driver must see that his lamps are lighted and kept burning brightly.
- 30. In all cases when approaching streets, intersections, going over points and crossings, round curves, and through crowded thoroughares, driver must observe the utmost caution; going at slow speed, at all times keeping a sharp look-out, and exercising the greatest watchfulness, in order to prevent accidents or injury to the public.
- 31. The fireman must, when the tram is on its journey, stand in the front of the engine, and manifest the same caution as the driver to prevent accidents; also give timely notice to him and the public in all cases of danger.
- 32. The driver must be careful to draw up at once on overtaking or meeting a restive horse, and pass the same slowly; if the horse attempts to shy he must come to a dead stop.
- 33. He must not run round curves, or through points, or over crossings at a greater speed than 3 miles per hour, and must not under any circumstances exceed 10 miles per hour. Where pointsmen are not stationed drivers must satisfy themselves that facing-points are in proper position before passing
- .34. At the intersections of streets where the trams are timed to stop the drivers must not attempt to cross each other until all passengers requiring to leave or enter have done so; and at no period of the journey must they pass each other at a greater speed than 4 miles per hour.
- 35. The driver and fireman only are to be upon the engine, and no other person whatever is to be allowed to travel upon it, unless by a special pass, which shall be issued by the Commissioner, Engineer, or Traffic Superintendent.

36. Drivers and firemen are strictly forbidden to smoke while on duty.

37. All drivers and firemen will be liable to instant dismissal for the slightest instance of insobriety, and to fine or dismissal for disobedience of orders, negligence, or other misconduct, as well as to punishment as the law directs.

38. Every driver and fireman must produce a certificate from the Medical Board of his physical

fitness to perform the duties required of him.

39. Drivers on arrival at the shed are to enter in a book kept for that purpose the state of their engines, so that any defect may be at once remedied.

40. Each driver will be held responsible for the safe condition and running of his engine, and

must in any case of repairs being required report the same immediately to his foreman.

41. Drivers must use engine whistle in cases of danger, and at authorized times and places only.
42. No driver of a tram or engine must approach nearer than 50 (fifty) yards to any other tram or

engine in front of him.

- 43. Any driver noticing any person or persons in charge of any vehicle across the track must, if time permits, warn them by a shrill whistle, and if he perceives no notice taken of his warning, apply his brake, and if necessary reverse his engine, so as to stop his tram in the shortest possible time; if such person or vehicle should come on the track too near to admit of the whistle being sounded, the fireman, whose duty it is to be always in the front of the engine when running, will give instant warning to the driver and such persons, and the driver will apply the brake, &c., as before, and do his utmost to avert an accident.
- 44. If any person or persons should come on the track, take no notice of any warnings given, and cause the tram to be stopped in the opinion of driver, fireman, or conductor, "wilfully," the name and address of such person or persons must be taken; should they refuse to give it, and no one is present that can do so, they must be given in charge or taken to the nearest police station to obtain same, and the circumstances reported in writing as soon as possible to be placed before the Commissioner, with a view to their prosecution if he so decides.

45. Trams travelling in opposite directions must not overlap each other at stopping-places, but

drivers must see that a space of at least 50 (fifty) feet is preserved between their motors.

46. Drivers and firemen of Railway Trams must be especially cautious passing George-street and Belmore, as pedestrians, seeing them approaching, may take it for granted that they will pull up at such

usual stopping-places.

47. In Elizabeth-street, when drivers are compelled to slow on account of a tram in front they must do so as far as possible from the stopping-place, and must avoid creeping up dead slow to the tram already on the stopping-place, as it leads passengers to suppose they can get out in safety. Once the cars are at a stand, drivers must not move without the conductor's signal, especially when only a few yards

from a stopping-place.
48. When drivers have sounded a danger signal, under Rule 43, they must not trust too much to vehicles getting immediately out of their way, but had better slow at once and make certain of the road

being clear, even at the risk of being behind time.

49. Drivers will be held strictly responsible for their firemen being in their proper places while en route.

SECTION III.

Signals.

50. The greatest possible care must be exercised by the driver, fireman, and conductor of each tram in keeping a careful and particular look-out for signals. Every signal must be immediately acted upon by the driver, whether seen by himself or notified to him by the fireman, conductor, or by any person observing a signal being given. Day

DAY SIGNALS.

51. The danger signal to stop.—A red flag, or, in its absence, both arms of the person signalling

52. Caution to slacken speed.—A green flag, or, in its absence, one arm of the person signalling being held up.

NIGHT SIGNALS.

53. The danger signal to stop.—A red light, or any light moved up and down.
54. Caution to slacken speed.—A green light, or any light moved slowly from right to left.
55. Any unusual signal, or the arm waved violently, denotes danger, and the necessity of stopping immediately.

.56. Signals by driver's whistle day or night-

One sharp beat of whistle to be given in acknowledgment of caution or danger signal; in reply to conductor's signal to stop when running; before starting after standing at terminus or loop; and for conductor to release hand-brakes, if applied, when running.

Three sharp beats of whistle, for conductor to put hand-brakes on, or assistant engine to stop.

Four sharp beats of whistle, for an advance or rear tram to stop.

One prolonged and one sharp beat of whistle, assistant engine to stop and reverse.

57. One long whistle from the conductor will be signal for driver to stop, and two short whistles a signal to start.

SECTION IV.

Instructions to Conductors.

58. Every conductor must be able to read and write, and produce a medical certificate as to his physical fitness, knowledge of colours, &c.

59. Every conductor must be at his appointed place of starting fifteen minutes before his tram leaves, that he may see that the carriages are clean and free from dust, and in every respect in good order.

60. No tram is to be started before the time stated in the Tables, and before giving the signal to

start the conductor must ascertain that all cars are properly and securely coupled, and that no one is getting on or off the car.

Every exertion must be used for the expeditious dispatch of cars at their appointed time, and for

insuring the punctuality of the traffic.

61. Conductors must call the name of each stopping-place plainly at least 40 feet before reaching it, and see also that all parties entering or leaving have done so before signalling the driver to proceed.

62. Conductors are not allowed to converse with their passengers, or with employes, except to

give information, and that in as few words as possible, and in a respectful manner.

They must in all cases discharge their passengers with as much dispatch as possible, and allow no passenger to enter or leave the cars while in motion.

Dogs must not be allowed in the cars.

63. In the event of any passenger being drunk or disorderly to the annoyance of others, the conductor must use all gentle means to stop the nuisance; these failing, he must for the safety and convenience of all, exercise his authority and remove such person from the car. No person in a state of intoxication must be admitted into the cars.

64. The conductor is responsible for the due placing of the various lamps on the cars, and for seeing that they are lighted at sunset and kept burning brightly.

65. Conductors must report daily to their superior officer, upon forms provided for the purpose, any instance of a driver travelling too quickly through points or over crossings, or faster than permitted by these rules; any indication of defect in road; any instance of engine or car getting off the road, or receiving any strain or injury; any defectiveness in brakes; any instance of cars shunted violently or observed to run unsteadily; any delays, neglect, or other irregularity or deviation from the requirements of these rules.

66. The conductor will see that the By-laws are complied with, and whenever they are violated report

the fact to his superior officer.

- 67. Immediately a passenger enters a car the conductor will politely request his or her fare or ticket, the receipt of which he will acknowledge by ringing his cash- or ticket-register bell, as the case may require. Public notices will be placed in every car requesting passengers to see that when they pay their fares they are so acknowledged, and any conductor neglecting to comply with this rule will render himself liable to dismissal.
- 68. A conductor on the first collection of fares should pay particular attention to his passengers so that in his subsequent collection he may be able to identify those who have previously paid him, and in all cases of doubt he must politely inquire if the fares have been paid.

 69. The conductor must not allow smoking, except in the compartments provided for that purpose.

70. Conductors must in all cases take in and discharge their passengers on the outside of the track next the pavement.

71. In case of accident, detention, or other necessity, the conductor may demand assistance from

any Tramway servant either by day or night.

72. During a journey, and when not engaged collecting fares, the conductor in charge must stand at the rear of his tram so as to command at a glance a view of the whole of it. When pulling up at, or starting from, stopping-places he must especially be on the alert to warn pedestrians passing behind his

tram, should a motor be approaching on the opposite line.

73. The conductor must not sound his whistle inside the cars. If compelled to give a signal while on the footboard, he must turn his back to the side of the car before doing so.

74. Whenever a driver gives a signal of danger ahead, the conductor must pay immediate attention, with a view of doing all he can to avert the possibility of an accident, and being able to give as full particulars afterwards as possible should an accident take place.

75. While it is desirable that the conductors and drivers should work in complete harmony, the conductor must distinctly understand that he is in charge and will be held strictly responsible for the

conductor must distinctly understand that he is in charge, and will be held strictly responsible for the

proper working of his tram.

76. Conductors must bear in mind that it is the passengers' right to ask questions concerning the routes, fares, &c., and all such inquiries must be answered in a cheerful, accommodating spirit. The exercise of a little intelligent tact and forbearance with passengers will tend to save complaints and consequent trouble of writing reports in explanation thereof, and render the conductors' duties generally easy and pleásant.

77. Conductors shall, in all cases, at once examine, in the presence of a witness, any bag, purse, &c., found in the cars. If such lost property be found by a passenger, the conductor should open the same and request the finder to witness the contents, as well as give his name and address for further reference if necessary. In the event of the conductors themselves finding any unlocked bag or purse, they should draw the attention of a passenger, or the nearest official, to the contents, to be called upon as a witness

in case of dispute,

78. General.—As cases will constantly occur on the streets that cannot be foreseen or provided for by any special rules, both conductors and drivers are expected to use their best skill and judgment in such emergencies, always bearing in mind that too much importance cannot be attached to the safety of the public.

SECTION V.

Instructions to Pointsmen and Signalmen.

- 79. Every pointsman or signalman must be in attendance at his post during the required hours of duty, and he must never leave the points or signals of which he has charge during those hours or until he is relieved.
- 80. He must not allow any person to frequent his box or cabin, which, as well as the ground adjacent, must be kept clean and neat.

81. Facing-points are always to be steadied, should they be hand-lever points, by the hand of the

pointsman when trams are passing over them.

82. Great care must be taken not to allow the points to fall back until every vehicle in the tram

has cleared them.

83. Before a pointsman goes off duty he must take care to inform the person relieving him what tram is due, so that the relieving pointsman may know if the trams are running out of their regular order. The relieving pointsman is to satisfy himself of the points, &c., being in good working order before the other pointsman goes off duty.

84. Men in charge of points and crossings must examine them carefully, and clean and oil them every morning, and must frequently from time to time ascertain that they are in perfect order, and not injured by the passage of trams; and must especially examine the rod connecting the points, and all screw nuts, cotters, &c., trying the points occasionally by moving them to and fro.

85. Each person whose duty it is to give signals must see that he is provided with the necessary flags and lamp by his superior officer, and must keep them ready for immediate use.

SECTION VI.

PERMANENT WAY.

Instructions to Gangers.

86. Every ganger must inspect his portion of the Tramway every morning before the first tram starts, whether the weather be wet or dry, also before leaving his duty in the evening.

87. Every ganger shall examine at those times all the points and crossings, and see that they are kept clean, well oiled, in good working order, and safe in every respect; that the rails are in gauge, in perfect line and level, all fastenings tightened, and the joints in proper order.

88. Any ganger who neglects so to examine the roads, points, or crossings, &c., or fails to inform his immediate superior officer of any defects in his length, will be immediately dismissed.

89. All tools, implements, &c., required for the repairs of the line must be kept in good order, and the ganger will be held responsible for their safety.

Regulations for working Single Lines by Train Staff and Ticket.

90. Train staff or ticket to be carried.—A train staff or train staff ticket must be carried with each

tram or engine, and without this staff or ticket no tram or engine must be allowed to travel on the line.

91. No tram to leave unless staff is at the station.—No tram or engine must be permitted to leave any staff station, unless the staff for that portion of the line over which it is to travel is then at the station.

92. Staff.—The person in charge of the staff for the time being is the sole person authorized to start a tram or engine.

93. When staff is to be given to engine-driver.—When a tram or engine is ready to start from a staff station, and no second tram or engine is intended to follow before the staff will be required for a tram in the opposite direction, it is the duty of the person in charge of the staff to give it to the engine-

tram in the opposite direction, it is the duty of the person in charge of the staff to give it to the engine-driver, who will then hang it on the hook provided for that purpose on the engine.

94 When tickets are to be given to engine-driver.—If other trams or engines are intended to follow in succession before the staff can be returned, a ticket must be given by the person in charge of the staff to the engine-driver of the first tram or engine, the staff for the section being shown to him, and so on with any other tram or engine, except the last, the staff itself being given to the engine-driver of the last tram or engine; as directed in Regulation 93. After the staff has been sent away, no other tram or engine must, under any circumstances, leave the staff station to follow in the same direction until the staff for that section has been returned.

95. Engine-driver not to start until he has received the staff or ticket.—No engine-driver with a tram or light engine must leave a staff station until he has received the proper staff or ticket for that

a tram or light engine must leave a staff station until he has received the proper staff or ticket for that section of the line over which he is about to travel, and he must not take the staff or ticket from any

other than the person in charge of the staff for the time being.

Signal.—After receiving the staff or ticket he must not start until the proper signal has been given by the conductor.

Staff

Staff or ticket to be given up.—On arriving at the station to which the staff or ticket extends, such staff or ticket must immediately be given up to the person appointed to receive it, to be dealt with

as the latter may be instructed by the Superintendent of the line.

96. Conductor to see staff before starting.—No conductor must signal his driver to start from any staff station without having first seen that the staff for that portion of the line over which he is to

travel is then at the station.

97. Penalty for engine-driver leaving without staff or ticket.—An engine-driver will render himself liable to dismissal if, under any circumstances, he leaves a staff station without the staff or ticket for the section over which he is about to run; or, if he leaves without a ticket, without having also seen the proper staff.

98. Staff.—Each staff has engraved or marked on it the name of the staff station at each end of

the section to which only it applies.

99. Person in charge to be careful in issue and receipt of tickets.—The person in charge of the station for the time being will be held strictly responsible for due care being taken in the issue and receipt of tickets, and he must see that no one but himself can obtain access to his ticket-book.

100. Not to take staff or ticket beyond proper station.—Engine-drivers must be extremely

careful not to take the staff or ticket beyond the station at which it ought to be left.

101. Engine carrying staff, disabled.—In the event of an engine which carries the staff breaking down between two stations, the fireman must take the staff to the staff station in the direction whence assistance can be obtained or is expected, in order that the staff may be at the station on arrival of the

Engine carrying ticket, disabled.—Should the engine that fails be in possession of a ticket instead of the staff, assistance must only come from the station at which the staff has been left. But if assistance can be more readily obtained at a station other than that where the staff is, immediate steps must be

taken to have the staff transferred to the other end of the section.

102. When line is blocked.—Should the accident be of such a nature as to block the road, and the traffic is likely to be stopped for any considerable time, special arrangements must be made for working the trams to and from the point of obstruction on each side. The Train Staff Regulations must be carried out on that side where the staff is at the moment of the accident, and, on the other side, the traffic must be conducted by a pilotman, to be appointed by an order in writing, and the person in charge

of each end of the section worked by the pilotman must have a copy of such order.

103. When line is clear after being blocked.—When the line is again clear no tram or engine must be allowed to pass the point of obstruction without the staff and the pilotman. The pilotman must accompany the tram or engine carrying the staff to the staff terminal, when the traffic will be again conducted according to the Train Staff Regulations.

104. Staff stations shown in Working Time-tables or Appendices.—The Working Time-tables or Appendices, issued for the guidance of the servants, will contain the necessary information from time to time as to the places which are appointed staff stations.

NOTICE.

Drivers will receive instructions from the conductors as to passing and stopping places when the cars are so loaded as not to admit of other passengers entering. Should they receive such instructions, they must in every case slow down and give signal by whistle prior to any crossing to be so passed, and use every possible precaution to prevent accidents of any kind.

Posted in Running Sheds, in April, 1883.

GEO. J. HENDY, Running Foreman.

GOVERNMENT TRAMWAYS.

Locomotive Superintendent's Office, Randwick, 22 February, 1884. Memorandum.—When passing over crossings, &c., all drivers must slow down and conform with the like speed which an omnibus would be expected to travel at.

Please note and instruct all drivers, in the form of a General Order, that the Commissioner has decided, "if he can get to learn of an authenticated and identified case where a driver has transgressed the rule re slowing down of speed and sounding the whistle while in the act of passing over crossings, whether with free motors or with motors attached to cars; he will consider it a duty due to the claims of the public for protection to dismiss the offender.'

Drivers must understand that this will be strictly enforced.

GEORGE DOWNE.

1883-4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

CAMPBELLTOWN AND CAMDEN TRAMWAY.

(COST AND OTHER PARTICULARS.)

Ordered by the Legislative Assembly to be printed, 16 September, 1884.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 1st May, 1884, That there be laid upon the Table of this House a Return showing, in reference to the Campbelltown and Camden Tramway,—

- "(1.) The length of the line and total expenditure on same, distinguishing
- "between land resumptions, construction, and rolling stock; also the present
- "approximate amount of depreciation in capital value through wear and "tear.
- "(2.) The gross receipts for each year, or part of year, since opening for
- "traffic, separating 'passenger' from 'goods'; the total working expenses ${}^{\prime\prime}$
- "for the same periods, distinguishing between interest payable on capital
- "expended, cost of maintenance, and wages.
- "(3.) The net receipts and actual rates of interest returned on the capital "expenditure for the same periods.
- "(4.) The carrying capacity for passengers and goods per train, and the "approximate average number, and amount actually carried each way.
- "(5.) The proportionate rates for carriage, as compared with Railway rates "for similar distances."

(Mr. Copeland.)

CAMPBELLTOWN AND CAMDEN TRAMWAY.

(1.) Question. The (a) length of the line and (b) total expenditure on same, distinguishing between land resumptions, construction, and rolling stock; also the (c) present approximate amount of depreciation in capital value, through wear and tear?

Answer. (a) The length of line-7 miles 33 chains.

(b) The total expenditure—

Land resumption £2,089

Construction 33,245

Rolling stock 5,623

£40,957

(c) Nil.—The line, rolling stock, &c., are kept in effective order—the amount expended for this service out of Working Expenses Votes has been, for 1882, £245; for 1883, £395.

(2.) Question. The gross receipts for each year, or part of year, since opening for traffic, separating "passenger" from "goods"; the total working expenses for the same periods, distinguishing between interest payable on capital expended, cost of maintenance, and wages?

Answer. Gross earnings, 1882—passenger, £1,288; goods, £865; total, £2,153.

"	1883	,,	1,7	37	,, 1,493	,,	3,230.
					1882.		1883.
Working expe	enses	:			£2,720		£5,686
Includes rene	wals				245		395
Maintenance			• • •		462		$1,\!259$
Compensation	for perso	nal inji	ury		416		$2,\!161$
Total wages p	aid ⁻	•••	•••		$1,\!821$		$2,\!886$

Note.—The line was open for 91 months only in the year 1882.

(3.) Question. The net receipts and actual rates of interest returned on the capital expenditure for the same periods?

Answer. Nil.

(4.) Quéstion. The carrying capacity for passengers and goods per train, and the approximate average number and amount actually carried each way?

Answer.	Accommo	odation fo	r 1st cla	ss pass	engers,	each trip		•••		12
			2nd		_	**	•••	•••	•••	28
	Average	number of	f 1st cla	ss pass	engers	carried daily	•••	•••		7
	. ,,		•	,,		each trip	• • •			$1\frac{1}{6}$
	"		$ m ^{"}_{2nd}$	"		carried daily		•••		50
	**		11	11		each trip		•••		$8\frac{1}{3}$
	Number	of loaded	trucks e	ngine c	an take	without car	•••	'		3
				U		with car		• • •	•••	1
	Average	number o	f loaded	trucks	inward	ls daily		•••	• • •	$\frac{3\frac{1}{4}}{7\frac{1}{4}}$ $\left\{ 10\frac{1}{2} \right\}$
	, ,,		"	,,	outwar	ds daily ssengers, 17s.		•••	•••	$7\frac{1}{4}$) 102
	Average	earnings :	per crip,	goods	ади раз	ssengers, 17s.	ou.			

(5.) Question. The proportionate rates for carriage as compared with Railway rates for similar distances?

		A.]	3	Mi	sc.	1	st	2r	ıd	31	d	41	th
Answer. For similar distances the Rail way rates are per ton The Camden Tramway rate are per ton	3	d. 0		-	l		l						l	d. 0 6

1883-4

LEGISLATIVE ASSEMBLY.

SOUTH WALES.

TRAMWAY REPAIRING SHOPS.

(NUMBER OF MEN EMPLOYED, COST, &c.)

Ordered by the Legislative Assembly to be printed, 26 August, 1884.

Questions.

- 4. Mr. Poole to ask The Secretary for Public Works,—

 (1.) Will he say how many men of each class are employed on the day-shift at the Tramway Repairing Shops at Randwick and Pitt-street, exclusive of drivers and firemen?

 (2.) The same with respect to the men employed on the night-shift at both places?

 (3.) The amount of money required to pay the men above described fortnightly, taking the average for the past six months?

Answers.

1 & 2.

Class.	No. of Men on Day-shift.	No. of Men on Night-shift.	Class.	No. of Men on Day-shift.	No. of Men on Night-shift.
Foremen Fitters—Engine Blacksmiths Strikers Car-fitters Turners Machinists Pattern-makers Boiler-makers Plumbers and coppersmiths Tinsmiths Brass-finishers Brass-moulders	2 36 13 16 5 15 9 1 9 4 5 2	2 27 1 3 1 1 	Carriage-builders Carpenters Painters Improver Apprentices Boys Car-examiner Car-lifters Stationary Engine-drivers. Labourers Watchman Time-keepers	5 10 1 4 2 1 8 2 59	 1 15 1

Total, 278 men.

3. £1,435 per fortnight.

1883. (THIRD SESSION.)

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

TRAMCARS.

(COST, CARRYING CAPACITY, AND COST OF REPAIRS.)

Ordered by the Legislative Assembly to be printed, 9 October, 1883.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 16th February, 1883, That there be laid upon the Table of this House, a Return showing,—

- "(1.) The cost of the different descriptions of Tramcars.
- "(2.) The number of passengers each class of Car is supposed to carry.
- "(3.) The Weight of each description of Car.
- "(4.) The average cost of repairs per annum for each class of Car.
- "(5.) What number of each description of Car is considered a fair load for

"a Motor to haul."

(Mr. Sydney Smith.)

TRAMCARS.

STATEMENT showing the Cost of the different descriptions of the above; the number of Passengers each is supposed to carry; the Weight and average Cost of Repairs for each class per annum; and the number of Cars considered a fair load for a Motor to haul.

Class.	Descriptio	on of Car.		Cost.	Carrying Capacity.	Weight	t	Average Cost of Repairs to each Car for 3 months.	Nu	mber of Ca	rs a fair loa Motor.	d for one
		_	,	each.	Number of Passengers.	Tons. c	wt.	s for the age.	(2 for		of 11-inc	h cylinders.
A	Double-decked, Bogies.	two four-	wheel	£439	90	6	5	of repairs for quarter of the a fair average.	$\begin{cases} 1 \\ 1 \\ 2 \end{cases}$	do. do. do.	10 9 11	do. do. do.
A ¹	Do.	do.	•••	£675	90	. 7	3	0 0, 4	$egin{cases} 1 \ 1 \ 2 \end{cases}$	do. do. do.	10 9 11	do. do. do.
A ²	Do.	do.	•••	£595	90	7	5	as the cost of til the last qui not show a fa	$\begin{cases} 1 \\ 1 \end{cases}$	do. do. do.	10 9 11	do. do. do.
A³	Do.	six wheels	s	£490	. 60	, 4	12	given, as rate unt would r	$\left\{egin{array}{c} 2 \\ 1 \\ 1 \\ 2 \end{array}\right.$	do. do. do.	10 9 11	do. do. do.
A ⁴	Do.	four whee	ls	£490	60	4	12		$\left\{ egin{array}{c} 2 \\ 1 \end{array} ight.$	do. do. do.	10 . 9 11	do. do. do.
\mathbf{A}^{5}	Do.	do.		£480	60	4	12	accurately it kept sepa iree months	$\left\{ egin{array}{c} 2 \\ 2 \\ 1 \\ \end{array} ight.$	do. do. do.	10 9 11	do. do. do.
A6	Do.	do.	·	£485	60	. 4	12	cannot be Car was not cost for th	$\begin{cases} 2 \\ 2 \\ 1 \end{cases}$	do. do. do.	10 9 11	do. do. do.
В	Single deck, four-wheel Bo	box-pattern, ogies.	two	£773	56	6	0	on can of Car the cos	$\begin{cases} 2 \\ 1 \\ 1 \end{cases}$	do. do	10 9	do. , do. . do.
ġι	Do. do	o. do.		£675.	. 56	6	.0	s information c each class of C year, and the	$\begin{cases} 2 \\ 1 \\ 1 \end{cases}$	do. do. do.	11 10 9	do. do.
C	, Do. open	sides do.	•••	£400	70	5	0	This information each class of '	$egin{cases} 2 \ 1 \ 1 \end{cases}$	do. do. do.	, 11 10 9	do. do. do.
					· .			🛱				

Sydney: Thomas Richards, Government Printer.—1883

1883.

(THIRD SESSION.)

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

TRAMWAYS.

(REVENUE AND EXPENDITURE, NUMBER OF MOTORS, &c.)

Ordered by the Legislative Assembly to be printed, 9 October, 1883.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 6th February, 1883, That there be laid upon the Table of this House, a Return showing,—

- "(1.) The total amount expended in construction of Tramways, specifying each section separately.
- "(2.) The revenue and expenditure of each section of the Tramway lines, "distinguishing the expenditure for permanent-way, locomotive, and general "charges for the past year.
- "(3.) The total amount of discount allowed to vendors of Tram tickets for "the past twelve months.
- "(4.) The number of Tramway motors in running order, and number under repair.
- "(5.) The amounts paid by the Government for the resumption of private "property along the several lines of Tramways."

(Mr. Sydney Smith.)

TRAMWAYS.

RETURN to an Order of the Legislative Assembly, on the motion of Mr. S. Smith, for certain information relative to Construction and Working of Government Tramways.

Question	Redfern to Bridge- street.	Liverpool- street to Randwick and Coogee.	Darlinghurst to Waverley and Woollahra.	Crown-street to Cleve- land-street.	Railway Station to Glebe Point and Forest Lodge.	Devonshire- street Junction to Botany.	Newtown Road Junc- tion to Marrickville.	Campbell- town to Camden.	Rolling stock, machinery, workshops, trial surveys, &c.	Total.
	£	£	£	£	£	£	£	£	£	£
No. 1.		1	Total an	ount expen	ded in cons	truction.		•		•
	41,665	66,443	37,332	6,511	38,827	71,262	30,160	29,515	136,430	458,145
No. 2.			Tot	al earnings	of each sect	ion.				
Receipts	23,651	22,323	33,226	10,498	8,539	18,819	9,146	2,153		
			Total expe	enditure for	working ea	ch section.				
Locomotive	7,565	10,539	13,492	6,436	6,519	10,808	5,351	1,189		•••••
Permanent-way	17,769 ·	5,943	4,381	506	480	. 1,146	1,581	707		*******
Traffic	2,846	3,965	5,075	2,420	2,453	4,065	2,012	794		*******
General	263	366	469	224	226	375	186	30		• • • • • • • • • • • • • • • • • • • •
						·				
	28,443	20,813	23,417	. 9,586	9,678	16,394	9,130	2,720		•••••
			,							

No. 3.—Total amount of discount allowed to vendors of Tram Tickets, £1,809 14s. 3d.

No. 5.—Amounts actually paid for resumption of private property to 31st December, 1882:—

Redfern to Bridge-street		 •••		 	 £2,636
Liverpool-street to Randwick,	&c.	 		 	 5,183
Glebe Point and Forest Lodge		 •••	•••	 	 1,600
Campbelltown to Camden		 		 •••	 354

No. 4.—Number of Motors in running order, 34 to 39; number under repair, 5 to 10.

1883-4.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

COMBINED MOTOR AND

(BALDWIN COMPANY'S CERTIFICATE OF MR. DOWNE'S PATENT.)

Ordered by the Legislative Assembly to be printed, 16 May, 1884.

RETURN to an Order of the Honorable the Legislative Assembly of New South Wales, dated 1st May, 1884, That there be laid upon the Table of this House,-"A copy of the Baldwin Company's certificate of the performance under "steam of Mr. Downe's new Patent Combined Motor and Car."

Messrs. Burnham, Parry, Williams, & Co., to The Commissioner for Railways. Dear Sir; Philadelphia, 15 September, 1883.

We are pleased to advise you of the shipment of the Compound Motor and Car on the 30th ultimo, with a view to its shipment from San Francisco by the Pacific Mail Steam-ship "City of New

York," which carries this letter. On August 22 we sent you a telegram, as per enclosed copy, announcing the satisfactory performance of the car and its shipment by this vessel.

During its trial the motor worked efficiently and satisfactorily, and we believe fulfilled all our expectations concerning it. It is the best plan of eight-wheeled steam-car which has ever come within our notice, and contains many important features of construction which have never before been used in such a machine. As it is, however, the working out of an entirely new design, there must necessarily be found a machine. As it is, however, the working out of an entirely new design, there must necessarily be found many points susceptible of improvement, and these points will be demonstrated by its service on your lines. Its comparative economy of fuel will also be shown. While during its trial here it indicated that its consumption of fuel would be small, the conditions are so removed from those under which it will work on your lines that we must consider this one of the points which must be left for time and further experience to decide. Much credit is due to Mr. Downe for the diligence and attention which he has shown to every detail during its construction. He has devoted his time to it exclusively, and much praise is due to his skill and intelligence as a designer. No new idea in the construction of locomotive and kindred machinery has remained uninvestigated, and any credit which may be due for the merits of the design we take pleasure in rendering to him. We hope soon to hear good accounts of the performance of the car on your lines. of the car on your lines. .

We remain, &c.,

BURNHAM, PARRY, WILLIAMS, & CO.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

COMBINED TRAMWAY MOTOR AND CAR.

(COST AND OTHER PARTICULARS.)

Ordered by the Legislative Assembly to be printed, 16 September, 1884.

LAID upon the Table of the House in accordance with promise made by the Honorable the Secretary for Public Works, in answer to Question No. 1, in Votes and Proceedings No. 154, of the 4th September, 1884.

- "(2.) What has been the cost of each, including repairs, improvements, "&c., to 1st August, 1884?
- "(3.) How many and how often have each broken down in traffic?"

(2.) Question.—What has been the cost of each, including repairs, improvements, &c., to 1st August, 1884?

Answer.

Nos.	Particulars.	Engine cost.	Car cost.	Total cost.
Engine 70, Car 100, combined.	Labour and material, building motor Making drawings and tracings Do patterns Royalty on Joy's valve gear Bill of J. G. Brill & Co., for car 1 screw trolly 1 set driving springs Labour and material on trial trips Freight, Philadelphia to 'Frisco Do 'Frisco to Sydney Insurance, 'Frisco to Sydney Cartage, Sydney	142 19 8 80 19 10 10 6 7 545 5 0 19 12 7 2 1 4 62 12 11 301 0 0 434 14 0	£ s. d.	£ s. d
	Cost of erection of motor and car Cost of improvements Cost of repairs, &c.	174 6 4	,	
	Total cost, Motor and Car	•••		3,066 14 7
Engine 71, Car 101.	Cost of motor as per invoice Freight Insurance, 'Frisco to Sydney Cartage Cost of erection Cost of improvements Cost of repairs, &c.	1 2 9 66 16 10		
-	Cost of car and fittings, complete		651 8 9 -3 15 2	1,442 7 4 655 3 11
-	Total cost, Motor and Car	` .		2,097 11 3

Nos.	Particulars.	Engiue cost.	Car cost.	Total cost.
Engine 72, Car 102.	Cost of motor as per invoice. Freight Insurance, 'Frisco to Sydney Cartage Cost of erection Cost of improvements Cost of repairs, &c.	£ s. d. 1,150 0 0 165 9 7 17 0 10 1 2 10 68 1 11 6 19 5 31 0 5	£ s. d.	£ s. d
	Cost of car and fittings, complete		650 4 8 4 2 8	1,439 15 654 7
	Total cost, Motor and Car	***************************************		2,094 2
Iotor 73, Car 103	Cost of motor as per invoice Freight Insurance, 'Frisco to Sydney Cartage Cost of erection Cost of improvements Cost of repairs	1,150 0 0 165 19 7 17 0 10 1 2 9 77 11 1 6 19 5 .35.11 1	-	1,454 4
	Cost of car and fittings, complete		649 5 5 1 18 3	651 3
	Total cost, Motor and Car	,		2,105 8
Iotor 74, Car 104	Cost of motor as per-invoice Freight-and lighterage, New York Insurance, New York to Sydney Freight, New York to Sydney Cartage, Sydney Wharfage, Sydney Cost of erection (not completed) Cost of improvements Cost of repairs	1,150 0 0 11 7 0 18 12 0 56 13 11 4 2 1 1 1 9 14 15 5 6 19 5		
:	Cost of car and fittings complete			1,263 11
	Total cost, Motor and Car			1,914 1
Iotor 75, Car 105	Cost of motor as per invoice. Freight Insurance, 'Frisco to Sydney 'Cartage Cost of erection Cost of repairs 'Gost of improvements	1,150 0 0 165 19 7 17 0 10 1 2 9 76 5 10 9 0 11 6 19 5		1,01# 1
	Cost of car and fittings complete	***************************************	648 6 7	1,426 °9 -6486
	Total cost,: Motor and Car	**************		2;074 15

•	RECAPITULATION.	£ .s. /d.
Motor 70 and Car	100, cost	3,066 14 7
,, 71 ,,	101, ,,	.2,097 11 3
,, 72. ,,	102, ,,	2,094 2 4
,, 73 ,,	103, ,,	.2,105 .8 5
,, 74 ,,	104, ,,	1,914 1 5
,, 75 ,,	105, ,,	2,074.15 11
	Grand Total	13,352, 13 11

(3.) Question.—How many, and how often, have each broken down in traffic?

Answer.

	Motor Numbers.					Car Numbers.			Total.
	70	71	72	73	75	100	101 •	.103	10641.
Failures due to defective valves Do defects in brake apparatus of Motor Do train rod brasses working loose Do Car-brake getting out of order Do miscellaneous causes	3 2 	4	1 2 1	2 1	1	3	 1 	1 1	8 3 2 5 4

Particulars re failures by Combined Motor and Car, to 18th August, 1884.

		.>				
Date and time.	Place where failure occurred.	No. of E or C causing i	Car	Nature of failure.	Extent of delay or time combined, not running.	Remarks.
May 7th, ⋈ 8.23 a.m.	Bridge-street Yard.	Motor	70	Diaphragm of brake burst	Not running from 8.23 to 10.13 a.m.	Repaired in two hours, at a cost of 25s.
May 9th, 12.45 p.m.	Between Red- fern and Bridge-st.	Car	100	Connecting rod of Car- brake gave way.	1.5 p.m. trip to Railway Station not run; then re- sumed work.	Cost of repairs trifling; Car lost one run only.
May 13th, 8.50 a.m.	Elizabeth-st., near Bel-	Motor	72	Sector-spring down from reversing lever; slot-hole	Two trips not run while fitters effected repairs at	Cost of repairs trifling.
May 14th, 3.30 p.m.	more Park. Between Rail- way and	Car	100	not large enough. Beam of Car-brake failed	Redfern. Not running from 4.30 till 7.45 p.m.	do do
May 15th, 6.30'p.m.	Bridge-st. do	Motor	72	Big end of main rod brasses getting loose.	Did not run the 6.43 and 7.2 p.m. trips to Railway in consequence.	Nuts of big end slackened back, had to be screwed on tighter with spanner.
May 19th, 7.5 a.m.	do	Car	100	. Car-brake failed	Did not run the 7.5 a.m. trip to Railway; repairs effected and resumed runing.	Very trifling.
June 14th, 10.30 a.m.	Bridge-street Yard.	Motor	70	Brake-shoe of Engine broke in two places.	Delayed 9 or 10 minutes	do
July 16th, 4.40 p.m.	Elizabeth-st., near Liver-	do	70	Failure of bolts connecting the bracket and hook for coupling Car and Engine.	Not running one trip	do . ,
July 26th, 6 p.m.	pool-st. Railway Sta- tion, Red- fern.	đo	73	Left valve spindle bent	Not running after 6 p.m., taken to Randwick for repairs.	Cost of straightening about 20s., but cause of bending was due to weakness of part.
July 30th, 7.47 a.m.	Bridge-street Yard.	Car	101	Car-brake failed	Detained ten minutes in Bridge-st. Yard.	Very trifling.
Aug. 1st, 12.10 p.m.			71	Right-hand valve spindle bent.		Due to weakness of part; cost of straightening about 20s.
Aug. 3rd, 2.15 p.m.	Bridge-street Yard.	- do	71	do do	do do	do do
Aug. 4th, 5.20 p.m.	Railway Sta- tion, Red-	do	73	Left-hand valve spindle bent.	do do	do do .
Aug. 4th, 5.55 p.m.	fern. Elizabeth-st., at Market- street.	do	75	do do	10 minutes delay to general traffic; Engine stopped running for the day, and	
-				` .	taken to Randwick for repairs.	
Aug. 5th, 10 a.m.	Between - Bridge-st. & Redfern.	do	73	Right-hand spring gave way.	Stopped running, and taken to Randwick for repairs.	Cost of a new spring about £3.
Aug. 5th, 10.13 a.m.	do	do	72	Left-hand main rod brasses working loose.	11.8 a.m. trips.	ner; cost, 2s.
Aug. 6th, 7 p.m.	do	do	72	Valves blowing steam through badly; unable to keep fire and steam in Engine.	and one trip lost; com-	Bad workmanship; repairs paid for by manufacturers.
Aug. 9th. 8 a.m.	Elizabeth-st., near Market-		70	Brake-shoe broke in tug	One trip lost	Very trifling.
Aug. 14th, 7.25 p.m.	street. Railway Sta-	do	71	Right-hand valve spindle bent.	Stopped running, and taken to Randwick for repairs.	Cost of straightening about 20s.
Aug. 16th, 8 p.m.	do do	do	70:	Stud in left steam way pipe joint stripped its thread; had been blowing badly all day.		No real delay, driver re- ported defect on termina- tion of day's work, and it was remedied before next morning.
Aug. 16th, 8.15 a.m.	do	do	71	bent, and portion of link-		
Aug. 18th, 9.30 a.m.	Bridge-street Yard.	Car	103	motion broken. Car-brake failed	Did not run 9.27 and 10.5 a m. trips; repairs being effected at Bridge-st. Yard.	

Note.—There is nothing exceptional in the above mishaps attributable to the Engines, interruptions through slight mishaps being inseparable from the conditions of street traffic, and common to all steam Motors; the Baldwin Motors having had to come in no less than 343 times during the first six months of the current year, in consequence of slight failures.

(THIRD SESSION.)

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

ADVERTISING ON TRAM-CARS.

(COPY OF AGREEMENT.)

Ordered by the Legislative Assembly to be printed, 12 October, 1883.

[Laid upon the Table of the House in accordance with promise made by the Secretary for Public Works, in answer to Question No. 3 on Votes and Proceedings, No. 3, of the 11th October, 1883.]

* Copy of Agreement made with the Tramways Advertising Company for the right of advertising on Tram-cars:—

in the year of our Lord one thousand eight Memorandum of Agreement made the day of in the year of our Lord one thousand eight hundred and eighty-three, between the Commissioner for Railways, a corporate sole created by the Act of Council passed in the twenty-second year of the reign of Her Majesty Queen Victoria, number nineteen, intituled, "An Act to make more effectual provision for the construction by the Government of Railways in the Colony of New South Wales, and for the regulation of the same," of the one part, and the Tramways Advertising Company (Limited), of Sydney aforesaid, registered under the provisions of "The Companies Act," of the other part: Whereas the Commissioner for Railways has agreed to grant to the said Tramways Advertising Company the right of posting advertisements in all tram-cars on the lines of tramway in Sydney and suburbs, from the first day of August, one thousand eight hundred and eighty-three, until the thirty-first day of July, which will be in the year of our Lord one thousand eight hundred and eighty-four. day of MEMORANDUM of Agreement made the first day of July, which will be in the year of our Lord one thousand eight hundred and eighty-four, upon and subject to the terms and conditions hereinafter mentioned, in consideration of the said Tramways Advertising Company paying to the Commissioner for Railways and his successors a rental or payment for the right so granted at and after the rate of five hundred pounds per annum, by equal quarterly payments of one hundred and twenty-five pounds each, in advance, on the first days of the months of August, November, February, and May in each and every year during the continuance of this agreement, the first of such payments to be made on or before the first day of August, one thousand eight hundred and eightythree: And whereas the said agreement was to a certain extent based upon a letter from one George Atkinson, of date twentieth April, one thousand eight hundred and eighty-three, in which he made an offer to pay for the right to advertise in all the tram-cars and tram-stations in Sydney and suburbs, but the Commissioner for Railways aforesaid declined to entertain any offer in which the right to place advertisements in tram-stations should be included, and the agreement between the said parties hereto therefore was and is limited to placing advertisements in tram-cars only, as herein is mentioned: And whereas the said Tramways Advertising Company have also agreed to execute a Warrant of Attorney to the said Commissioner for Railways to secure payment of the sum of three hundred pounds, and to enter into a bond in the penal sum of three hundred pounds, with two sureties, for the due performance and observance of this agreement on the part of the said Tramways Advertising Company: Now these present witness that, in consideration of the premises, and of the payment to be made as hereinafter mentioned, and of the said Tramways Advertising Company observing all and every the stipulations herein contained, the Commissioner for Railways aforesaid, for himself and his successors, doth hereby give and grant to the said Tramways Advertising Company, and its successors and assigns, full right and authority to cause advertisements to be affixed and posted in all the tram-cars upon all the Government lines of tramway in Sydney and suburbs, in the said Colony, from the first day of August, in the year of our Lord one thousand eight hundred and eighty-three, until the thirty-first day of July, in the year of our Lord one thousand eight hundred and eighty-four, according to the terms, conditions, and stipulations herein contained. And that, in consideration of the premises and of the grant by the Commissioner for Railways to the said Tramways in consideration of the premises, and of the grant by the Commissioner for Railways to the said Tramways Advertising Company of the said right and authority to advertise as aforesaid, the said Tramways Advertising Company, hereinafter styled "The said Company," for itself, its successors, and assigns, doth hereby covenant, promise, and agree with and to the Commissioner for Railways and his successors: That

That the said Company shall and will, during the continuance of this agreement, well and truly pay to the Commissioner for Railways aforesaid, and his successors, a rent or payment for the said right to advertise, after the rate of five hundred pounds per annum, by equal quarterly payments in advance of one hundred and twenty-five pounds each, on the first days of each and every the months of August, November, February, and May in each and every year during the continuance of this agreement, the first of such payments to be made on or before the first day of August, in the year of our Lord one thousand eight hundred and eighty-three:

That the said Company shall and will conduct and manage the right of advertising as aforesaid under and subject to, and in all things in accordance with, the stipulations hereinafter mentioned—that is

to say:

That the said Company and their servants shall be subject to the Tramway By-laws and regulations made or to be made for the good government of the officers and servants of the Commissioner for Railways:

That the said Company shall not nor will accept advertisements for any longer period than for one

year, nor for any time exceeding the day fixed for the termination of this contract:

That the said Company shall at all times give a printed receipt for the moneys received by them or their agents or servants for advertisements intended to be affixed in and upon the said tram-cars, which said printed receipts shall be taken to be the proper vouchers entitling the person named therein to the right of publishing the advertisement therein mentioned for the period therein named for such advertising, such period not to exceed one year, or to extend the day fixed for the termination of the contract hereinbefore mentioned:

That the said Company shall and will supply and provide proper frames for all advertisements required to be posted in the tram-cars under this agreement, and in such positions as may be indicated by the Superintendent of Rolling Stock; and that the said Company shall and will provide for the approval of the Commissioner for Railways aforesaid, and furnish similar boards and frames, and affix the same to the tram-cars, under the superintendence and subject to the approval of the Superintendent of Rolling Stock aforesaid, such advertising frames to be of such size and design and painted such colour or colours as the Commissioner for Railways shall direct, and be well made and finished with a neat moulding round the edges; that no advertisements shall be required to be posted otherwise than in such frames; that the said Company shall, on the termination of this agreement, remove all advertisements at its own expense; and that any damage which may be done to the Commissioner's property in posting or removing advertisements, or in carrying on the advertising business under this agreement, shall, upon the request of the Commissioner, be forthwith made good by the said Company by and at its own cost and expense. And further, the Commissioner for Railways, or his authorized agent, may seize and sell so much of the advertising plant as he may deem necessary to realize the amount of damage done; the value of such damage shall in all cases be fixed by the Engineer for Tramways for the time being. That such-advertisements may be removed from place to place within the tram-cars by the Commissioner for Railways or such Superintendent of Rolling Stock as aforesaid, in such way as may then to the Commissioner for Railways or such Superintendent of Rolling Stock as aforesaid appear necessary to meet the requirements or convenience of the Tramway Department:

That the Commissioner for Railways and the Superintendent of Rolling Stock shall have the right of rejecting any advertisement which the Commissioner for Railways or such Superintendent of Rolling Stock as aforesaid shall consider ought not to be posted or exhibited in the said tram-cars or any of them; and no advertisement will be posted, or, if already posted, will be allowed to remain posted, if disapproved of

by the Commissioner for Railways or such Superintendent of Rolling Stock as aforesaid:

That the Commissioner for Railways reserves to himself, and shall at all times during the continuance of this agreement have, the right of affixing in all or any of the said tram-cars all or any notices or other publications by himself or any of his officers affecting the said tramways or any or all tramway or tramways in the said Colony, or the use, working, or management thereof, or affecting persons using the said tramway or tramways, and also all, every, and any notices on the part of the Government of the said Colony, or of any public department of the Government of the said Colony, without payment to the said

Company for so doing:

That the said Company shall not, without the sanction of the Commissioner for Railways being previously had and obtained in writing, assign or sublet their interest in the right of posting advertisements hereby granted, and if the said Company shall assign, sublet, or otherwise part with its interest in the said right of posting advertisements hereunder, this present contract shall be deemed to be broken on the part of the said Company and shall henceforth and thereupon cease, and the amount of the penal sum mentioned in the said bond shall be forfeited to the Commissioner for Railways, and shall be recovered and retained by him as for liquidated damages: Provided always and these presents are upon the express condition that if default shall be made in any one or more of the said quarterly payments of rent when and as the same shall become payable, and if the same shall remain unpaid for the period of seven days after the same shall become due (in advance) as aforesaid, or if the said Company shall fail to observe, perform, and keep all and every of the covenants, conditions, and agreements which on its part are to be observed and performed and kept, it shall be lawful for the Commissioner for Railways, without notice, to take possession of the whole of the advertisements in all or any of the said tram-cars, and to manage and carry on the business of advertising therein as herein provided for in such manner as may appear to him advisable; and all costs and expenses incurred in the management, together with all sums due under the contract, shall be paid on demand by the said Company, and in default of the same being so paid on demand by the said Company, shall be chargeable against and upon the amount secured by and under the said bond as ascertained and liquidated damages. And it is hereby further declared and agreed between the said parties hereto that whenever the term "Commissioner" is used in this agreement it shall be understood to mean the Commissioner for Railways for the time being or any one or more of

In witness whereof, &c., &c.

1883-4

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

TRAMWAY CONDUCTORS.

(DISMISSAL OF.)

Ordered by the Legislative Assembly to be printed, 16 July, 1884.

RETURN to an *Order* of the Honorable the Legislative Assembly of New South Wales, dated 11th June, 1884, That there be laid upon the Table of this House,—

- "Copies of all letters, minutes, and other documents connected with the
- "case of the Tramway Conductors who were dismissed without any reason
- "being assigned, together with all notes of proceedings taken at the
- "inquiry held by the Secretary for Public Works into the matter referred
- "to; also copies of any reports made by Mr. Detective O'Brien upon which
- "the action of the Department was taken."

(Mr. Cameron.)

	SCHEDULE.	•
NO		PAGE.
1.	Papers respecting Mr. D. A. O'Brien	2
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· 3.	Papers respecting Mr. C. W. Willson	10
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6.	Reports re habits and characters of above Tram Conductors	19
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8.	Minute of Commissioner for Railways approving of dismissal	20
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10.	Report from Traffic Inspector re Inquiry	20
	Minutes of Secretary for Public Works re Inquiry into dismissal of Conductors	

[802 copies—Approximate Cost of Printing (labour and material), £17 1s. 0d.]

TRAMWAY CONDUCTORS.

No. 1.

D. A. O'Brien's Case.

Minute of Superintendent of Tramways.

From information received I personally called upon Assistant Conductor O'Brien to produce the watch supplied to him by this Department, but this he was not able to do.

In answer to questions he first said it was gone to be repaired, then that it was at home, and eventually that he had tried to catch a Waverley tram one night and it was stolen from him, and that he

had given information to the police.

On making inquiries I find that he went to the Central Police Office on 24th February at 8.25 p.m., and made a statement to the effect that he had lost or had stolen from his person on the 22nd February. between the hours of 10 and 12 p.m., in King-street, a silver open-face lever watch, marked tram No. 132 on case, with brass guard attached; value in all, £6 10s.; can be indentified; no person suspected.

I have suspended him and recommend that his services be dispensed with. I have detained his

pay-order; the amount due to him up to date is £6 15s.

Will the Commissioner please approve of his dismissal, and that the value of watch may be deducted from pay due to him (O'Brien); or would the Commissioner wish other action to be taken in the matter. Commissioner. J.R., 17/5/83.

Minutes of Commissioner for Railways.

WHAT has been O'Brien's reputation in the Department?

Without any dishonest intention the man may have simply been afraid to report the loss, and

perhaps expected to recover it before it was missed.

The Superintendent, however, probably knows something of the case. He should see me personally. If there be no suspicious circumstances beyond the man's prevarication I should be disposed to ask him for further information or explanation. Сн. A.G., 19/5/83.

Mr. Tyrer explained to me that O'Brien has borne a good character, that he attributed his not reporting the loss of watch to indisposition to face the consequences, &c.

Let the value of the watch be deducted from the man's wages, and he may be reinstated. Сн. А. G., 28/5/83.

Mr. Roberts.

Mr. J. Willmott to The Superintendent of Tramways.

Sir. Tramway Office, 18 June, 1883. I regret having made an error as staffman on the Waverley line on yesterday, the 17th instant. I was staffman at the Ocean-street loop, when the 1.43 p.m. down tram arrived, I gave him a ticket instead of staff, and when the 2.18 p.m. arrived I gave him the staff. The 2.5 p.m. left Waverley without (See Rules 84 and 85.)

Hoping you will give my case your favourable consideration,

I am, &c. JAMES WILLMOTT.

- 84. Conductor to see staff before starting.—No conductor must signal his driver to start from any staff station without having first seen that the staff for that portion of the line over which he is to travel is then at the station.
- 85. Penalty for engine-driver leaving without staff or ticket.—An engine-driver will render himself liable to dismissal if, under any circumstances, he leaves a staff station without the staff or ticket for the section over which he is about to run; or, if he leaves with a ticket, without having also seen the proper

Conductor O'Brien to The Superintendent of Tramways.

Tramway Office, 18 June, 1883. I beg to report being in charge of the 1.15 p.m. down tram, Bridge-street to Waverley, on Sunday, the 17th instant, the staffman, James Willmott, being in charge.

In leaving Waverley I was in error in not seeing staff or my authority for the right of the road. (See Rules 84 and 85.)

In coming round the corner at Vernon-street we saw the 2.18 p.m. tram approaching with the staff, and when within 50 yards of each other, pulled up; the 2.18 p.m. reversed and went back on the loop. We then received the staff for Ocean-street loop, causing a delay of about 4 minutes.

Hoping you will give my case your favourable consideration, I am, &c., D. A. O'BRIEN.

Forwarded for Commissioner to see. This might have been a serious accident, but as it was nothing did occur beyond the two trams coming within 40 yards of each other. The man, Willmott, gave a ticket to the tram leaving Ocean-street at 1 43 p.m., instead of the two staffs. This tram left Waverley without first seeing staff, the next tram going to Waverley at 2.18 from Ocean-street took staff, men leaving Waverley are to blame, they knowing the rules well re staff and ticket. Staffman Staffman Willmott is also to blame; but had the men leaving Waverley without first seeing the staff paid even a little attention to their rules this would not have occurred. The conductor has had a book of rules, also been working staff and ticket stations for ten months; he was instructed by myself over and over again re never leaving without seeing staff. The driver is also one of the oldest hands, and been working these stations for many months. I have suspended both men in my Branch. (See Rules 84, 85.)—J.R., 18/6/83. Commissioner.

I find that on previous occasions of a similar character we have disrated the conductor who has left a staff station without first seeing the staff to that of car-cleaner or flagman. I must therefore recommend that O'Brien be reduced to car-cleaner for three months, and 6d. a day taken off his pay. In the case of James Willmott I recommend that he be reinstated, with a fine of three days' pay. The

driver will be dealt with by Secretary.—J.R., 24/6/83.

O'Brien, after the expiration of this term of three months car-cleaning must work up again as assistant guard. Recommendation in his case approved. Fine Willmott one day's pay.—D.V., pro Com-

missioner, 25/6/83.

D. A. O'Brien.—Extract from M.P., 84-1,434 (Commissioner's Minute):—"Services to be dispensed see No. 8. with by a week's notice."

EVIDENCE.

Frank O'Brien, traffic inspector, states:—I have known this man for some years; he was a 'bus driver, but left through drink; he was summoned and fined for using obscene language to a transit officer; out of pity for him as a married man I got him re-employed, but he could not resist drink; I have seen him on duty in that nervous state he could not ring off his fares properly.

Mr. Felton, Government Watchmaker, states: -That O'Brien went to his shop and told him he had been robbed of his Government watch while sitting drunk in a gutter.

James Willmott, point-cleaner, states: -That he has seen O'Brien under the influence of drink while on duty at Bridge-street; he has also repeatedly seen him, when on duty at Waverley, leave his tram and go into a hotel.

T. Jones, revenue inspector, states:—I was in Melbourne on my holidays; O'Brien had also been there, absent without leave; he was known as an employee of the New South Wales Government Tramways, and left without paying his hotel bill.

J. Roberts, Superintendent, states: -O'Brien-is addicted to drink and not fit to be trusted to collect revenue; he has been suspended and recommended for discharge, through losing his Government watch when drunk and making fase statements to Mr. Tyrer as to the watch; he has been repeatedly absent without leave, on one occasion fourteen days, another nine days (see time-keeper's report); he was reduced from conductor to car-cleaner for three months, and 6d. a day taken off his pay for a serious breach of the Staff regulations.

Registered Reports.

17th May, 1883.—False statement made to Mr. Tyrer, and other papers re lost Government watch. 15th June, 1883.—Serious breach of Staff regulations, reports, &c., connected therewith.

F.O'B.

Mr. J. Willmott to The Superintendent of Tramways.

Bridge-street Yard, 18 May, 1884. I beg to report that while I was in the yard shunting I have noticed O'Brien the worse of drink, also when conducting on the cars at Waverley. I have noticed him leave his tram at Waverley terminus and go to the public-house. On one occasion I said, "Well Dan, it's very dry." He replied "I had no small change," and laughed.

D. A. O'BRIEN.

Suspended on 18th June for leaving staff station without staff.

Disrated on 25th June for three months as car-cleaner.

Absent 9 days. Pay-sheet ending 19th July, 1883.

1 day. , 30th August, 1883. " 1 day.

", 1½", ", 13th September, 1883.

Reinstated as conductor, 25th September, 1883.

Holidays commenced 2nd November, ending on the 9th instant (viz., 8 days). Resumed work, 24th November.

Absent 14 days over holidays granted.

Pay-sheet ending 28th February, 1884.

13th March, 1884. 4th April, 1884.

Dismissed, 5th April, 1884.

J. S. MUIR,

Time-keeper, 16/5/84.

JAMES WILLMOTT.

O'Brien:-Frequently drunk; on one occasion lost his watch; absent from duty on a plea of being sick; anything but attentive to passengers; misses ringing fares; passing passengers free; altogether unfit for the position.—J.R.

Minute of Secretary for Public Works.

D. A. O'BRIEN.

I READ the statement of offences recorded against O'Brien and drew his attention to them, pointing out that although his offences were all attributable to his giving way to drink, and nothing dishonest was charged against him, still his history proved him to be units for the duties he had to perform.

O'Brien did not attempt to deny his faults, but wished to lighten them in regard to his nervousness

by stating that he was constitutionally nervous and that, as regards entering a hotel at Waverley there was no accommodation provided, and he had of necessity to go into the hotel.

F.A.W.

No. 2.

Charles Gilberthorpe.

Memorandum from Mrs. Keogh.

46, Gipps-street.

THE last tram from Randwick. Got in at Moore Park; tram did not stop at Liverpool-street. Told the guard I wished to alight there. Signalman made the remark tram did not stop. A gentleman got out and I followed; fell and hurt my knee.

The conductor for report.—J.W.T. (pro Superintendent).—Mr. Muir.

Report to Office:—Last tram from Randwick on 13th December. Lady got in at Moore Park; asked her where she wished to get out, and I understood her to say Bathurst-street. There being no one about I gave the signal to go on just after the driver had slackened speed, whereupon the woman jumped out. She seemed not to have hurt herself, so I allowed the tram to go on. The gentleman that got out was a driver from the sheds. Lady seemed under the influence of drink.—C. GILBERTHORPE, 2/1/83.

I recommend that this conductor be fined a week's pay. These are the complaints that cause all

the trouble,—not stopping at streets, and rushing past appointed places on time-table.—J.R., 4/1/83. Commissioner. Fine him a day's pay.—D.V., 9/1/83.

Mr. J. McGann to The Superintendent of Tramworks, Randwick.

49 Bathurst-street, Sydney, 29 January, 1883. Sir,

I write to inform you that during the last two months, while travelling by tram from Sydney to Randwick while on duty, I have been subjected to threats and insults such as I can no longer endure

without complaining.

The person whose conduct I now complain of is a ticket collector, who, on the first occasion asked me for my ticket, when I told him that I was in the Government service and I travelled to and from work free of expense; he then, in a loud tone, expressed his disbelief in my statement, and insinuated that I was travelling as a rogue and an imposter; this charge brought all eyes on me, and I felt it very

On the second occasion he again asked me for my ticket. I then told him that I had already explained to him who and what I am. He then said, "You must get out of this and ride up stairs; that is your place." This order was given in a loud tone in the presence of the passengers, and when there was plenty of room in the car I was riding in.

On the third occasion he again asked me for my ticket. I then showed him a pass that I had just received, and expressed a hope that that would in future satisfy him; but it did not, for on Saturday evening last, the 27th January, when I entered the 5 50 p.m. tram from Randwick, he again demanded my ticket, when I again showed him my pass, but that would not satisfy him, for he loudly declared in the presence of all the passengers that if I did not leave the car and go up stairs that he would stop the tram and drag me out. And now, fearing violence and a breach of the peace at his hands, I claim the presence of the Department. the protection of the Department.

I may add that I am always well clothed, sober, and in all ways respectable, and that I never

ride in the cars when there is room upstairs and the weather will permit; and that on Saturday last when he threatened to drag me out there were only two persons riding in the car with me, and that it was a

In conclusion I will venture to remark that the power given to such men as the one I now complain of, to stop a tram and drag a respectable man out without just cause, is a dangerous one and

should at once be withdrawn, as the same end could be obtained by milder and better means.

If ticket collectors are empowered to act in this manner it would be well that they had something to show it, for I would rather pay my fare and give up my pass than be subjected to such violence which has so often brought me under the gaze of the public, and which has given me such pain.

On the Saturday here mentioned I handed the said ticket collector a pencil and paper and requested him to write his name thereon, but instead of his doing so he jeeringly commenced to write my own name on the paper, and after being requested several times to write his name he positively refused to do I am unable at present to furnish his name.

Hoping that you see cause to forward this to the head of his Department,

I remain, &c., JAMES McGANN, Night Watchman,

Randwick.

Since writing this letter I have learned that his name is Gilberthorpe.—J.M.

I inquired of Conductor Gilberthorpe what it was before perusing all the contents of this complaint. If it is as stated by Night Watchman McGann, the conductor, when the pass was shown, acted indiscreetly. McGann is a particularly quiet inoffensive man, and always clean, respectable, and respectful at all times, and I will add, from what I have seen of the conductor, it is unlike his general conduct. Perhaps his explanation will show some reason for his conduct.—Geo. Downe, 1/2/83.

Mr. Roberts. Conductor Gilberthorpe to report at once should he be the conductor in question.--J.R., 8/2/83.

Mr. C. Gilberthorpe to The Superintendent of Tramways.

9 February, 1883 The report laid against me by James McGann, most of it is untrue. The first time I saw the The report laid against me by James McGann, most of it is untrue. The first time I saw the man he told me that he was the night watchman at Randwick, which I found out to be true. Since, this man always attained a seat inside the car, whether full or empty. On one or two occasions he has kept his seat below when others who had paid their fare had to stand. About two weeks ago I spoke to him about it, telling him that all workmen who had passes travelled outside. When I told him that he said, "How dare you speak like that to me?—ride outside I will not." I asked him for his name (to inform Mr. Downe of his conduct), which he refused me. I afterwards told the night foreman about him; he told me never to mind him this time, for he was very crotchety when his dignity was touched. I therefore took no further notice of it. took no further notice of it.

I may state that I did not say I would stop tram or pull him out.

I have asked him several times to show his pass, for, as he was sitting alongside Randwick passengers, and they not knowing who he was, I went up and demanded his pass, which he did not like at any time.

C. GILBERTHORPE.

Send on for Mr. Downe to see. I wish Mr. Downe would instruct all his men to show their passes, asked for or not by the conductor.—J.R., 11/2/83. Mr. Downe.

Seen.—The men shall be instructed to show their passes. McGann states positively there was plenty of room in the car, and that the conductor's statement is only made to screen his action.—GEo. Downe, 13/2/83. Mr. Roberts.

There appears to be fault on both sides. I shall have conductor cautioned. You have done same to your man re showing ticket.—J.R., 16/2/83. Mr. Downe. Seen.—G.D., 24/2/83.

Mr. J. Daley to The Superintendent of Tramways.

382, Crown-street, Surry Hills, 20 February, 1883. I desire to bring under your notice what might have been a very serious, if not fatal, accident, Sir,

which occurred to my wife and children yesterday.

My wife and two children proceeded in the morning to Coogee, and on returning in the evening by the car which reached Oxford and Crown Streets at about 5 10 p.m., my wife got out immediately the car stopped, with the youngest child in her arms, then turned to assist my boy (about 5 years old) out, when the car started without any warning. My wife pulled the boy out, but in so doing got her arm bruised against the car. My wife can only guess as to the time car stopped at Oxford street. She says the conductor, so far as she can say with any certainty, was on the other side of car; she does not think she heard his whistle sound. The consequences may be more serious than I can at present say, as my wife heing just now in a delicate state of health may yet suffer from the fright. I may mention that my wife, being just now in a delicate state of health, may yet suffer from the fright. I may mention that I have noticed similar carelessness when travelling myself,—you are scarcely allowed time to get off the I take this means, rather than rushing into print, of endeavouring to put a stop to a practice which I am, &c., JOSEPH DALEY. must, sooner or later, end fatally.

My wife emphatically declares that nothing will induce her to ride in one of the cars again.

Let me know who the conductor was. I have issued orders about giving time to enter and alight **–J**.R., **21**/2/83.

Find out who had the 4.43 p.m., February 19th, 1883, from Randwick.—J.W.T., 21/2/83.

Conductor C. Gilberthorpe had charge of 4.43 p.m.—J. H. Jones. Mr. Tyrer.

A complaint is made that when the 4.43 p.m. up tram stopped at Crown-street junction you did not allow a sufficient time for a lady and two children to alight; that when she went to assist her son (about 5 years of age) to alight the cars were started without any warning. Report at once.—J.W.T. (pro Superintendent), 22/2/83. Conductor Gilberthorpe.

The complaint made against me I am quite ignorant of a pathing has becaused decimal.

The complaint made against me I am quite ignorant of; nothing has happened during the week to my knowledge.—C. Gilberthorpe, 25/2/83. Superintendent.

Report herewith. Conductor Gilberthorpe denies all knowledge of this accident.—J.R., 27/2/83. Commissioner.

The Traffic Foreman to The Superintendent of Tramways.

Bridge-street Yards, 1 March, 1883. I have to report to you about Conductor Gilberthorpe's conduct when I informed him that he was to go on the Waterloo line. He said he would not go. I said there was one of two things for him to do, either to go to Waterloo or go home. He said that he would go for a week. for a we. Yours, &c., G. GAMGEE, Traffic

Traffic Foreman.

I have seen Gilberthorpe, and he wished to make the foreman a liar direct. and I recommend that Gilberthorpe be fined a day's pay.—J.R., 2/3/83. Secretary. I believe Gamgee,

On the 6:30 Waterloo tram a man by name R. Hargrave was making a noise on top of car; I spoke to him asking him to keep quiet, which he refused by still keeping up the noise. I then told him he must get off the car, which he refused also. I caught hold of him to put him off. He said "I'm b—if you will," and caught hold of my throat, tearing my shirt-collar and coat. With the assistance of two conductors we got him down stairs on the ground; he then tried to bite and kick us, and we put him in a car to take him to the watch-house. In the car he used some very bad language. He said, "You b——, if I get six months for this I shall mark you," and many other words. While we were taking him over to the station he called one of the conductors who were helping me "a b—— fat bastard."—18/3/83.

I got up to Redfern Court-house this morning, the 19th, at about 7 or 8 minutes past 10 o'clock. The case had been called just before I got there and man discharged.—C. Gilberthorpe, 19/3/83.

This

This is the first I have heard of this case. Does Mr. Harper know anything of it?—J.R., 19/3/83. The only information I had of the matter was from Conductor Moxam, who told me last night that a man had been given into custody at the Redfern Station for refusing to pay his fare. I attended at the Redfern Court this morning, and as there was no Tramway official present, and no such charge on the sheet, I was in the act of leaving when Conductor Gilberthorpe came up, the charge against Hargrave for obscene language and assault having been dismissed for want of a prosecutor.—G. G. HARPER, 19/3/83.

Forwarded for the Commissioner's information. Gilberthorpe gave the man in charge and then pleased himself as to the result. When I informed him this morning as to what action he should have taken he simply told me that he had overslept himself. The man was discharged, there being no appearance of plaintiff. Gilberthorpe appears to be above his duty, and I must make this young man know his place. What would Secretary advise under the circumstances?—J.R., 19/3/83. Secretary.

When did he leave work on the previous night?—D.V., 21/3/83. Mr. Roberts, B.C.

Gilberthorpe left work on the Sunday evening at 7.30. Yesterday he came to the office and stated the man could be found if we chose to prosecute. The style Gilberthorpe gave this message to Mr. Collagoration.

Gilberthorpe left work on the Sunday evening at 7.30. Yesterday he came to the office and stated in could be found if we chose to prosecute. The style Gilberthorpe gave this message to Mr. Colls the man could be found if we chose to prosecute. was something above his position.—J.R., 23/3/83. Secretary.

When was he due on the day he missed attending Court?—D.V., 27/3/83. Mr. I At 2 p.m. Left work at 7 30 the evening he gave man in charge.—J.R., 28/3/83. Mr. Roberts, B.C.

Note this gross piece of indifference against this man, and let him understand that it will militate against him.—D.V., 30/3/83. Mr. Roberts, B.C. Have done so.—J.R., 31/3/83.

On the 7.35 p.m. down arriving at M'Evoy-street last night you uncoupled your cars from motor, and after motor had shunted you allowed them to run down to loop (a distance of about 200 yards). Report at once why this was done, and how many passengers you had on board.—J.W.T. (pro Superintendent), 23/8/83. Conductor Gilberthorpe.

In answer to the report, sent to me on the 25th instant, asking why I shunted at M'Evoy-street, I beg leave to state that the shunt was done to save time and allow the driver all time possible to attend to his motor, as it was not in a fit condition to run without being well looked after. Had no passengers on tram on arriving at M'Evoy-street.—C. GILBERTHORPE. Superintendent.

Murray and Lambert to state what length of time tram had at Waterloo.—J.W.T., 29/8/83. Gilberthorpe had 19 minutes, being 5 minutes before time after shunting.—W.C.M.,

Gilberthorpe should not do the like of this. He cut off his cars some 200 yards and then ran them down the road. He had plenty of time, and might have caused some serious accident. He should be fined two days' pay.—J.R., 30/8/83. Commissioner.

When the nature of the case is made clear, and one can understand what the man is to be fined for, I will say if approved or not.—D.V. Mr. Roberts, B.C., 4/9/83.—G.B.

The case is this: Gilberthorpe allowed the motor to be cut off some 250 yards from the Waterloo stopping place, and ran the cars down without the engine. Had there been an accident, see the conse-There was no necessity for this, and had the brake given way there would have been a nice mess. 9/83. Secretary. Fine approved.—D.V. -J.R., 6/9/83. Secretary.

Mr. C. Gilberthorpe to The Superintendent of Tramways.

Sir, I beg leave to appeal against the fine imposed on me for shunting at M'Evoy-street on the 22nd August last.

I may state in reference to the shunting that it has been practised since Botany line opened, to shunt at bottom points, cutting off between M'Evoy-street and the Toll-house. This shunt is necessary at times to prevent the Waterloo from delaying the Botany tram as they arrive at Waterloo almost

together on some trips. The shunt on the 22nd was done to give the Botany a clear road and also for a greater purpose in that of allowing my driver to work at his motor, to prevent running to the sheds, as it was in a bad condition, thus preventing a delay of traffic which otherwise could not have been avoided

C. GILBERTHORPE.

Let Mr. Hobart have all papers. I do not see the necessity of what this man states.—J.R., 3. Mr. Hobart, for immediate report.—J.W.T., 24/9/83. 20/9/83.

I do not see any reason for Conductor Gilberthorpe resorting to this dangerous mode of shunting. According to Murray and Lambert's report he had ample time to shunt the usual way before the arrival of the Botany tram. On inquiry, I find that it has not been the practice to shunt in this manner, and that of the Botany tram. On inquiry, I find that it has not been the practice to shunt in this manner, and that Gilberthorpe is the only conductor that has done so. His excuse of endeavouring to gain time for his driver is very trivial, as 19 minutes would be sufficient time to make any repairs to a motor that a driver could possibly make while on the road. - A. C. Hobart, 24/9/83.

I do not see any extenuating circumstances in this case, and cannot recommend that his appeal be granted, re fine imposed.—J.W.T. (pro Superintendent.) Commissioner.

Please state at once from whom you received instructions re ringing for fares paid for carriage of newspapers to Botany and the nature of instructions given.—J.W.T. (pro Superintendent), 12/9/83. Conductor Gilberthorpe.

I am called upon to state from whom I received instructions re ringing for newspapers to Botany, and the nature of instructions given. I beg leave to state that I heard the instructions read to the Superintendent (by the time-keeper in Bridge-street yards) from the minute-book. The instructions, so far as I can remember, were that the charge of three pence (3d.) a parcel should be paid for carriage of such (magning newspapers) on the transverse and the conductor should registry the said three same such (meaning newspapers) on the tramways, and the conductor should register the said three pence (3d:) on receiving the same.—C. Gilberthorpe, 14/9/83. Superintendent.

Mr. A. T. Colls to The Superintendent of Tramways.

Sir, Sydney, 12 September, 1883. In reply to your inquiries regarding Conductor Gilberthorpe, I beg to state that on coming to the office one morning about three months ago he called my attention to some money he had collected for newspapers, and wanted me to take it to the office. I said, "No; if you have not signed any order regarding it, you see Mr. Primrose at once, and he will inform you what is to be done with the cash." He came and saw Mr. Primrose, and rang it off before him.

I have, &c., ALFRED T. COLLS.

What instructions did Mr. Primrose give Gilberthorpe? Please say.—J.R., 13/9/83. Mr. Primrose. I remember Gilberthorpe asking me about this money. I told him instructions were issued to conductors to ring all money received for papers on the cash-bell. He had a small sum in his hand, which he said he had received that morning. He then rang the amount off before me.—A.P., 14/9/80. Superintendent.

Mr. J. M. Melly to The Superintendent of Tramways.

Waterloo, 26 September, 1883. I beg to bring under your notice the gross negligence of the tram-guard on the 7.20 a.m. tram to Botany on Wednesday, 26th September. I was waiting at Hayes' Road for this tram, but it dashed past me and did not stop as usual. The guard was on the motor talking to the driver. This guard makes it his business to inquire of the people where they intend getting off the tram, and then he only stops for them, never waiting to pick up passengers. I would not write, only this sort of negligence is of frequent occurrence, and when a man waits for a tram and it goes along and leaves him, it is very provoking. I have, &c. JOHN M. MELLY.

Mrs. C. Melly to Tram Inspector, or to those it may concern.

Botany Bay, 14 November, 1883.

I CERTIFY that I saw the tram-guard in the motor with his back to my son, John M. Melly, who was standing in the middle of the street at Hayes' Road. He did not notice him, or did not stop the tram to take him and Provent the later with the Potential Research to the later with the Potential Research to the later with the Potential Research to the later with the Potential Research to the later with the later with the Potential Research to the later with the later wi take him up. By not stopping he had to walk to Botany on the day mentioned in my son's letter. It was about 8 o'clock when he passed by in the morning.

Yours, &c., CHARLOTTE MELLY.

Name of conductor of 7.20 a.m. Botany down on the 26th September?-J.W.T., 1/10/83. Gilberthorpe, 4/10/83.

Memo. to Conductor Gilberthorpe:—You are reported as having been on the motor talking to driver while same was running the 7.20 a.m. trip to Botany on the 26th September, and that you did not stop to pick up on that trip at Hayes' Road. Report as to why this took place?—J.W.T. (pro Superintendent), 4/10/83.

In answer to memo, sent to me requesting report stating reasons why I was on motor while running the 7.20 a.m. trip to Botany on the 26th September last, and why I did not pick up passengers at Hayes' Road,—in reference to my being on motor it is false, for as we have very few passengers on that trip I always avail the opportunity to have my breakfast (en route to Botany), standing on end of first car, and placing breakfast on seat or stairs. As to not stopping, the tram was pulled up to a very slow pace, and my not seeing any one about but a workman, who was leaning with his arms on the railings on the other side of road, and who did not move even after my stopping, I started ahead again.—C. GILBERTHORFE.

The 7:39 p.m. from Botany did not stop at Macintosh-street on 3rd instant. Name of conductor? J.W.T., 5/10/83. Mr. Scholey. Charles Gilberthorpe. Conductor Gilberthorpe for immediate report. -J.W.T., 7/10/83.

Conductor Gilberthorpe to The Superintendent of Tramways.

Sir. Sydney, October, 1883. In reference to memo. sent to me, requesting a report why I did not stop at Macintoshstreet on the 3rd instant, 7.39 p.m. trip from Botany, I beg leave to state that on the night mentioned I had a strange driver, who did not know the stopping-places. We passed Macintosh-street some 30 yards, when I blew my whistle for him to stop, which he did, one passenger leaving the tram, and in no other I have, &c., C. GILBERTHORPE. way causing any inconvenience to passengers.

Assistant Conductor Clement to The Superintendent of Tramways.

I most respectfully beg to report on the 3.39 tram from Botany, on the 20th instant, Conductor Charles Gilberthorpe left the Botany Terminus without the staff. As soon as I discovered the mistake I followed with No. 54 motor-W. Whitelaw, driver-and brought the other train through to Botany

> W. CLEMENT Assistant Conductor

This is another instance of Gilberthorpe's carelessness. staff being left behind, it caused delay and work to the traffic. Place with papers, and make out with list of other complaints.—J.R., 22/10/83.

Although there was no actual danger, the

Conductor Gilberthorpe to The Superintendent of Tramways.

Sir,

I have to report an occurrence on the 3.39 p.m. trip from Botany on the 20th October. A special was sent out behind us on the 2.20 p.m. trip from Bridge-street to lay out at Botany until 5.39 p.m. Special arrived about 10 minutes before we started. I started to time, thinking we carried the staff, as I always placed strict confidence in my driver (Bruno Bronsch), but on nearing Gardener's-lane loop I found out it was behind. At the same time we noticed a light engine coming up with it, arriving in time to deliver it up to down tram, therefore causing no delay to traffic. I report this matter at once, thinking it my duty to do so.

C. GILBERTHORPE.

Minute of Commissioner for Railways.

MOTOR 52 leaving Bridge-street about 1.25 to-day. Some boys were observed jumping on to the cars when they were in rapid motion; observed by the unreproved by the conductor. Superintendent for report.

CH.A.G.,
28/12/83.

Who was conductor? Ask for report.—J.R., 29/12/83. Gilberthorpe, for report.—J.W.T., 31/12/83

Conductor Gilberthorpe to The Superintendent of Tramways.

In answer to report re boys jumping on cars, I beg leave to state to the best of my knowledge neither boy nor boys, or any passenger, got on or off the 1.20 p.m. Botany trip from Bridge-street, while same was in motion. As I had the working of both cars to myself on that trip such a thing might happen on one side of tram while I was on the other. Had I noticed anyone entering tram while in motion I should have taken name or names, and forwarded same to office.

C. GILBERTHORPE,

3/1/84.

Conductor's report herewith. He states he did not see anything of the kind occur.—J.R., 5/1/84. Commissioner.

Minute of Commissioner for Railways.

Ir was the Minister who brought this case under my attention, and it came under his own personal observation; he is under the impression that the conductor must have seen the boys jump on the car. Please make further inquiry.

Сн.А.G., 10/1/84.

Mr. Roberts, B.C.

Send for Conductor Gilberthorpe to see me.—J.R., 12/1/84. I have seen this man, and he asserts he never saw anything of the kind occur. I questioned him closely.—J.R., 15/1/84. Commissioner. I have a very poor opinion of this conductor.—D.V., 17/1/84.

Minute of Commissioner for Railways.

From the Minister's observation it seems almost impossible that the conductor did not see the lads getting on to the car.

CH.A.G.,

19/1/84.

Minute of Secretary for Public Works.

SEEN. I am not sure where the tram was going, but I am certain as to its number, and conductor must be very short-sighted if he did not see the boys.

F.A. W.,

Mr. Roberts, B.C.

21/1/84.

Gilberthorpe still states he did not see the lads. There is a good deal he should see but will not. I have cautioned him.—J.R., 23/1/84. Commissioner.

The Superintendent of Tramways to The Commissioner for Railways.

Tramway Traffic Branch, 4 February, 1884.

Recommendation for increase of wages or salaries.

I RECOMMEND that the wages of Charles Gilberthorpe, conductor, be increased from 8s. 6d. per diem to 9s. per diem from 26th January, 1884, in accordance with the cassification.

Before recommending this man's application for a rise I would like the Secretary to see the list of complaints against him, and state if I will be justified in keeping his increase back for some time; of course the man has had some fines inflicted upon him.

J. ROBERTS.

Must stand over for a time. Re-submit end of April.—D. VERNON.

TRAMWAY

TRAMWAY Office.—History of Charles Gilberthorpe.

M.P. No.					
Commissioner.	Branch.	Date.	Particulars of Appointments, Transfers, Increases of Pay, Offences, &c.		
81-1138 81-3498 82-1282 83- 688	81- 559 81-1543 82- 628 83- 697	19 May, 1881 15 November, 1881 1 April, 1882 26 January, 1883			
			OFFENCES AND FINES.		
82- 247 83- 82 83-1402	82- 113 83- 17 83- 588 83- 905 83-1397	28 December, 1882 29 January, 1883 20 February, 1883	 Fined one day's pay for missing first trip. Overslept himself. Fined one day's pay for not stopping at Liverpool street. Cautioned for his rude behaviour to James M'Gann. Cautioned for not allowing Mrs. Daly time to alight from car. Cautioned for neglecting to attend Court after having given a man in charge. Secretary says this is to militate against his future advancement. 		
83-4784	83-4183 83-4519	22 August, 1883 14 September, 1883	Fined two days' pay for shunting cars at M'Evoy-street. Cautioned for neglecting to ring for carriage of newspapers.		

EXTRACT from Commissioner's Minute Paper, 84-1,434:—"Charles Gilberthorpe, tramway conductor. See No. 8. Services dispensed with on a week's notice.—Ch.A.G., 29/3/84."

Mr. C. Gilberthorpe to The Commissioner for Railways.

Darlinghurst, 22 April, 1884. I am advised by Messrs. Fletcher and Fremlin, M.'sL.A., through the Superintendent, to apply for an interview in reference to my recent dismissal from the Service (Tramway). I have received no cause as to the said dismissal; therefore I beg for an interview. Trusting you will grant this my earnest approach for invition appeal for justice, I remain, &c. CHARLES GILBERTHORPE.

Mr. C. Gilberthorpe to The Commissioner for Railways.

Sir, Darlinghurst, 28 April, 1884. I am unable to get a letter from C. Newton Bros. & Co., ten years having passed since my being employed there. I send a letter enclosed from Farmer & Co. in its place. Have sent letters from all other masters. Hoping my statement with my letters will meet with your approval, I am, &c., C. GILBERTHORPE.

P.S.—Can also obtain letters from some influential men of the City.

Minute of Commissioner for Railways.

Seen. No vacancy, and services not required.—Chas. A.G., 29/4/84.

GILBERTHORPE.

Frank O'Brien, traffic inspector, states :- I have noticed Gilberthorpe not ringing off his fares properly on several occasions, and seen him miss collecting fares through gossiping with passengers, especially females, and generally careless on duty; since his discharge he applied to the Commissioner for employment, stating that, among others, he could get a reference from C. Newton & Co., but which he failed do do (see Commissioner's memo. attached, A); about a fortnight ago Mr. Superintendent Roberts and I met Mr. C. Newton, who told us he would not give him a reference.

Lambert and Murray, revenue inspectors, state:—On the 24th August, Gilberthorpe, contrary to orders, cut off his cars at M'Evoy-street, risking accident, and was fined two days' pay. On 24th August, 1883, left his tram while at Waterloo, and was absent 20 minutes with a woman. On 10th September, 1883, took his bag on suspicion (see Cavanagh's evidence) of keeping newspaper fare; it afterwards turned out he had noticed us.

W. M. Cavanagh, conductor, on three occasions saw Gilberthorpe take money for newspapers and not ring his indicator, and reported to Mr. Roberts. (See attached report herewith, B.)

J. Roberts, Superintendent, corroborates Inspector O'Brien as to Mr. Newton's statement, that no man in the Department had been more often reported than Gilberthorpe for breaches of the Rules, and that he has good reasons to doubt his honesty with regard to newspapers and other fares.

Registered Reports.

17th January, 1882.—Fined a day's pay through not going on duty in time. Tram missed a trip waiting a conductor.

28th December, 1882.—Fined a day's pay. Not stopping for passengers at Liverpool-street.
29th January, 1883.—Cautioned. Rude to passengers. Mr. M'Gann.
20th February, 1883.—Cautioned. Not giving Mrs. Daly and children time to alight.

20th February, 1883.—Cautioned. Not giving Mrs. Daly and children time to alight.

1 March, 1883.—Cautioned. Refusing to obey lawful orders from Foreman Gamgee.

18 , , Cautioned. Not attending Court after giving a man in charge. Secretary ordered

this to militate against future advancement.

22nd August, 1883.—Fined two days' pay for shunting cars in the wrong place, thus risking accident. 24th September, 1883.—Cautioned for not ringing for newspaper fares under very suspicious circumstances.

948-B

3rd November.—Cautioned. Riding on motor gossiping with driver, and not stopping to pick up passengers waiting at Hayes' Road. (Mrs. Melly's complaint.)

A number of other complaints were made, but found doubtful, and the benefit given to the accused.

F.O'B.

Re Charles Gilberthorpe.

20/5/84.

CONDUCTOR C. Gilberthorpe cut off cars at M'Evoy-street, 22nd August, 1883.

Left his train, and was away with a woman for 20 minutes at Waterloo terminus, 24th August, 883

Took his bag on suspicion of appropriating paper money. He saw us leave the office previously, 10th September, 1883.

To Superintendent Roberts.

Returned.

W. C. MURRAY, WILLIAM LAMBERT, Revenue Inspectors.

(A.)

Minute of Commissioner for Railways.

GILBERTHORPE has sent me in the enclosed testimonials, but the one I specially asked for, viz., from Chris topher Newton & Co., he has not furnished.—CH.A.G., 25/4/84.

(B.)

Memo. from Conductor Cavanagh to Inspector O'Brien.

In reference to what I know concerning Conductor Gilberthorpe, I was early-morning man at Bridge-street, and on three occasions I saw Gilberthorpe and Redman take money for papers given to them to be delivered by them at Botany and Waverley, between three and four shillings each, and not ring for it. I told Mr. Roberts, and he told the detectives, and on the following morning Redman was caught and dismissed for it. When the detectives took Gilberthorpe's bag he had rung off the money.

A. M. CAVANAGH,

Conductor.

GILBERTHORPE.

2 days' absent. Pay-sheet ending 3rd January, 1884.

1 ,, 5th April, 1884.

Dismissed 6th April, 1884.

J. S. MUIR, 16/5/84.

Minute of Secretary for Public Works.

I READ the list of offences recorded against Gilberthorpe to him, and asked what he had to say. He denied that he was in any way dishonest or lax in the performance of his duties, and explained that the reported incorrect record of fares was due in cases to defects in the instrument. Mr. Superintendent Roberts acknowledged that often the contents of the conductors' bags did not agree with the register recorded by the instrument. In regard to the cutting off of cars at M Evoy-street, Gilberthorpe states he did this to meet the convenience of the Department. His train was running late and the motor was out of order; he cut off the cars in order to give the driver an opportunity of remedying matters, and his action enabled the train to keep time on the return journey. He complains that his endeavours in this particular were met by a two days' fine. He states the reason he did not ring for newspaper fares was on account of the peculiar circumstances. In one case (referred to) 1s. 6d. was given to him with a bundle of papers for Botany, but before he had time to ask about it the person went away. He had, when opportunity offered, brought the matter under attention, and, in the presence of Mr. Primrose, rung off the amount on his register. In regard to the removal of Mr. Hawke, he denied being rough in his treatment. Hawke was drunk and he removed him from the car as quietly as he could. After the man was removed he walked away direct to the Police Court and did not complain till some minutes afterwards of the injury to his arm. I informed Gilberthorpe that there could be no doubt the charge was well founded; I knew Mr. Hawke personally, and had a vivid recollection of the rough treatment to which he was subjected at the time.

Gilberthorpe stated that his chief reason for asking for the inquiry was to know definitely why he had been dismissed, as at present he had no knowledge and was without a recommendation so that he could not obtain employment elsewhere. I informed him that the offences bore against him and the other conductors dismissed were more for breaches of the rules, carelessness, &c., than for dishonesty, and I would see if I could notify it through the press so that their characters might in some measure be restored.

F.A.W.

No. 3.

Charles W. Willson.

On August 24th, 1883, at about 11:10 a.m., at the Show Ground, Moore Park, I picked up a £5-note in a tram-car. I called the guard (his name is Charles Willson), and suggested to him to call the passengers back before they got through the gate and try and find the owner of the note. The guard said no, it would not do; it would be better to leave the note at the Lost Property Office, and said he would leave it there.

F. W. SUTTOR, Varnville, Minto.

Conductor C. W. Willson, for immediate report.—J.R., 5/9/83.

Conductor

Conductor Willson to The Superintendent of Tramways.

I was in charge of a tram running to and from the Show Ground, on the 24th August, the 10·50 from Bridge-street. A gentleman gave me a £5-note at the Show Ground. I saw him pick it up in the car; I was standing a few yards from the car. He held the note out to me, saying, "Here, Guard, some one has dropped a £5-note; I think it was that elderly gentleman gone on in front; call out and ask who dropped it." I said, "No, sir, that would not do, as any one could claim it; I will wait until the owner asks for it, and if not I will leave it at the office." The gentleman said, "All right," and went into the Show Ground. A few minutes afterwards a gentleman came to me and said, "You have a £5-note which belongs to me." I said, "How is that?" He said, "I lost it, and a gentleman picked it up and gave it to you." I said, "Well, give me a proper description of the note and you shall have it." He did so accurately, and I handed him the note. Had he come a minute later we should have started from the Show Ground, and then I would have left it at the Lost Property Office. As he demanded the note, and said he was the owner, and gave a right description of it, I felt I was duty bound to give up possession of the note, as I have done in many other cases where people have left valuables in the car and came to me before I reached the office, giving a description of the goods lost. But in this case there is a third person. Mr. Suttor handed the note to me to give to the owner and I did so. Mr. Suttor now asks the question: "How does he know the right owner got it?" I can satisfy him no further than that on my own convictions the man who lost the £5-note was the man who received it from me. In the first place he gave a full description of it; secondly, his appearance was enough to convince me he was the right owner; in the third place he was a bit excited, as a person would be who lost anything of value, and I regret to state in my hurry I forgot to ask the gentleman his name and address, which, I confess, was very foolish on my pa

$\lceil Enclosure. \rceil$

PERSONAL.

FIVE POUNDS.—The gentleman who lost a £5-note in tram-car, and received same back at Show Ground, please send address to 70 Arthur-street, Surry Hills.

WILL the gentleman who received a £5-note at Show Ground on 24th August oblige by sending his address to 70 Arthur-street, Surry Hills, as the person who gave it up to him must satisfy the gentleman that found it the right owner received the note.

Send paper to Mr. Suttor, and ask him to return the same with any remarks he may have to make. —J.R., 12/9/83.

Reply from Mr. Suttor and Mr. Hayter attached. - J.W.T., 1/10/83. The Superintendent.

F. W. Suttor, Esq., to The Superintendent of Tramways.

Dear Sir,

I am in receipt of your letter of the 14th instant, also Conductor Willson's statement in reference to the £5-note which I gave him on the 24th ultimo.

The statement, so far as it relates to what the

The statement, so far as it relates to what took place between the conductor and myself, is substantially correct, except that I do not think he said anything about giving it to the owner if he asked for it, but he would leave it at the Property Office. As to the rest of the statement I cannot say anything, but this I may say, that a person I know, who lives near Camden, saw and heard what took place between Wilson and myself, and possibly he may have mentioned the matter inside the Show Ground, and perhaps sent the gentleman back to get the money. I will communicate with him and let you know result.

I am, &c.,

F. W. SUTTOR.

F. W. Suttor, Esq., to The Superintendent of Tramways.

Dear Sir,

The accompanying note is from the person referred to in my letter of the 19th instant as having heard what took place between the conductor and myself concerning the £5-note.

I am, &c., F. W. SUTTOR.

[Enclosure.]

Mr. J. Hayter to Mr. F. W. Suttor.

Dear Sir,

I remembered you giving the guard the £5-note on the opening day of the Show. I never heard any one inquiring about it, nor did I mention it to any one down there.

Camden, 21 September, 1883.

I am, &c.,

Willson asks me to keep these papers until he sees Mr. Suttor, and states that he will do so in a few days. —J.R., -2/10/83.

F. W. Suttor, Esq., to The Superintendent of Tramways.

Varnnville, 19 October, 1883. Dear Sir, Some little time ago I received a note from Conductor Willson, wishing to see me when in

Sydney, to explain the matter of the £5-note.

I saw him last Tuesday afternoon, and from the explanation he then gave me of the affair I am inclined to think he is innocent of anything beyond the indiscretion of neglecting to get some acknowledgment from the person to whom he says he gave the money; and I am induced to take this view of the case from the description he gave me of the man he says he gave the note to, which agrees very well with my own recollection of the person who sat near me, and whom I considered most likely to have lost it. For my own part I do not wish you to take any extreme measures with regard to Willson, as I now very Yours, &c., F. W. SUTTOR. much doubt his having appropriated the money.

Chas. W. Willson, Tramway Conductor.

EXTRACT from M.P., 84-1,434 (27/3/84):—"Services dispensed with by a week's notice.—Approved. CHAS. A.G."

W. Hezlet, Esq., to The Commissioner for Railways.

ar Sir, Melrose, Woollahra, 24 April, 1884. I write this at the solicitations of some of the ladies of Woollahra, on behalf of Tram Guard My dear Sir, Willson, under suspension. I have noticed his conduct and politeness to ladies with children, and I always

observed him strictly sober. I knew nothing of him before seeing him on the tram, and think you should be put in possession of any good qualities the guards may have. My lady friends are moved on his behalf Yours, &c., W. HEZLET. in consequence of his being a married man. And beg to remain

Mr. Roberts, B.C., 25/4/84.—G.B. The Department is better without this man's services, and I could not hear of his re-instatement.—J.R., 25/4/84. Commissioner. Inform.—G.B.

The Commissioner for Railways to W. Hezlet, Esq.

Sir,

Department of Public Works, Railway Branch, Sydney, 1 May, 1884.

I have the honor to acknowledge the receipt of your letter of the 24th ultimo, stating that you have been desired by a number of ladies of Woollahra to intercede on behalf of Tram Guard Willson, whose services were recently dispensed with, and in reply have to inform you that I am unable, under the report received, to approve of Willson's re-employment.

I have, &c. CHÁS. A. GOODCHAP, Commissioner for Railways.

EVIDENCE—(No. 5)—WILLSON.

Lambert and Murray, revenue inspectors, state that on 7th July, 1883, they saw Willson take a cash fare at Regent-street, give change, but not register it till he got to the other end of the car and saw them noticing him. They have known him to carry females in his car who paid no fare.

Wigg and Jones, revenue inspectors, have often seen Willson carry women who paid no fares; a often did so on the different lines he was working; they have repeatedly seen him talking with these women and neglect to go round for fares, and passengers leave the cars without paying; they were instructed to hand over a gold watch to Mr. Murdoch, solicitor, which it was alleged Willson had -, but which she could not get back.

Mr. Felton states Willson gave him a gold watch to repair, stating it was his wife's. (This watch is said to have been given by Willson's order to Miss --'s solicitor, to save a prosecution for its recovery.)

J. Wilmott, points-cleaner, has often travelled up and down with Willson; has had fares handed to him by passengers alighting from the cars which Willson had, while gossiping with women, neglected to collect; on the 22nd March, 1884, saw him take a cash fare which he did not register, and afterwards put

J. T. Campbell, foreman car-cleaner, corroborates Willmott, Lambert, and Murray, both as to seeing him keep cash fares, that passengers had handed him fares Willson neglected to collect.

J. Roberts, Superintendent, states that on 24th August, 1883, Mr. F. W. Suttor picked up a £5-note in a Moore Park car and handed it to Willson, who did not report the matter till seventeen days after when called upon to do so. He then told Mr. Suttor it was the property of the Government, and that he would hand it over, but failed to do so; neither did he tell Mr. Suttor that at the time it was found he had handed it over to the supposed owner, as he afterwards to Mr. Roberts. Willson has been many times reported for neglecting his duty re collecting fares, and I have fair grounds for doubting his honesty.

Registered Papers.

A NUMBER of papers relating to a £5-note found in his car by Mr. Suttor, which Willson stated that he had handed to a strange man without asking a name or address, which circumstance he failed to report till called upon seventeen days after.—F.O.B.

CONDUCTOR Willson was suspected of not registering his fares, and on the 7th July, 1883, was seen by us to take a cash fare at Regent-street, give change, and not register it till he saw us after he had nearly reached the other end of the car.

WILLIAM LAMBERT. reached the other end of the car. M. C. MURRAY,

Revenue Inspectors.

Mr. J. Wilmott to The Superintendent of Tramways.

Sir,

I think it is my duty to bring under your notice, through what I saw in the paper this morning, that on March 22nd, 1884, I was going to Woollahra to attend to my work, and I saw Willson take a cash fare for which he did not ring. I have travelled different times on Willson's tram, and had tickets frequently handed to me by passengers alighting from his cars. I have noticed Willson talking to passengers, mostly ladies, and I have more than once spoken to him about missing his fares; he made no replies, but sometimes laughed, and I have spoken to Mr. Roberts about it. The fare that Willson took and did not ring for he put in his pocket.

JAMES WILLMOTT.

J. T. Campbell to The Traffic Inspector.

Sir,

I beg to furnish you with the following information, through seeing so much scandalizing in the papers, caused through the dismissal of certain conductors, who are trying to bring all the disgrace on the Department they can, and to do certain members of the Department, who have fought for these men over and over again, all the injury they can. I consider it is my duty, as a member of the Department, to come forward and state what I know. I have on different occasions seen Willson take cash fares and tickets from passengers without ringing for them and put them into his pocket. I have seen a cash fare handed to Willson at Bridge-street Terminus, the week previous to his dismissal, by a gentleman getting out of his car, for which Willson did not ring. I was standing alongside of him waiting to brake the cars down.

Yours, &c.,

J. T. CAMPBELL.

Charles W. Willson appointed Assistant-conductor on 8/5/82 at 6s. per day.

On 24th August, 1883, Mr. F. W. Suttor, of Minto, near Campbelltown, gave Willson a £5-note that he picked up going to Moore Park Show-ground. This Willson never reported, and was called upon for immediate report on the 6/9/83, seventeen days after having received the same. Willson stated to Mr. Suttor on the 24th August it was the property of the Government, and he would hand it in. Willson did not do so, and did not mention the matter until called upon by the Department, when he stated that he gave the £5-note to some elderly gentleman, without either getting his name or address. Willson afterwards advertised for the gentleman he gave the money to, but no one turned up. Mr. Suttor states in his letter of the 19th September that Willson said nothing about giving it to the proper owner; he distinctly stated in the presence of a witness that he would leave it at the Lost Property Office. He did not do so. Willson has often been seen ringing his fares on the wrong bells. When on Waverley line he would take through fares against orders, and in that way it was easy to defraud the Department.—J.R.

REPORT.

Willson, C.-2 days' absent, pay-sheet ending 13 September, 1883.

,, 1 day ,, ,, 25 October, ,, ,, 6 days ,, ,, 3 January, 1884. ,, 1 day ,, ,, 5 April, ,,

Dismissed, 6th April.

J. S. MUIR, Timekeeper, 16/5/84.

CHARLES WILLSON.

I READ the complaints against Willson to him, and asked what he had to say. He asked that as his character was affected he might be represented by counsel, but I informed him the request could not be entertained for one moment; the question was simply one of credibility. I had reports that he neglected to ring for fares, &c. The question was a difficult one to prove or disprove; he could simply deny it; and it was therefore a question upon what side the balance of evidence lay. There was no necessity for witnesses or counsel.

In regard to the charge in connection with the £5-note, he remembered it being handed to him when running a tram to the Association Show-ground, but he states that a few minutes after he received it a man came to him in an excited state and asked for the return of the note. As the description he gave of the note was correct, and the circumstances seemed to point to applicant as the owner, Willson handed him the note. He did not report the matter till it was brought to his attention by the Superintendent, seventeen days after, as it seemed to him there could be no doubt about the ownership. He had advertised for the person who received the note, but could not find him, and Mr. Suttor, who picked

up the note in the first instance, was, Willson stated, satisfied the note had been returned to the right person. Mr. Suttor's letters are enclosed. I informed Willson that, no matter under what circumstances the note was taken or given, he should either have brought the note to the Lost Property Office, or, if he gave it to any person, taken a particular description of him and obtained his name and address.

neglected to do, and he was certainly guilty of great thoughtlessness and disregard of the rules.

In regard to the collection of fares, he denied that he was guilty of dishonesty or carelessness. alleging that the indicator was not a true register of what was collected, as it sometimes failed to act. was impossible to avoid speaking to passengers; continual inquiries were made of the conductor, and he had in common civility to answer them, but he did not allow his conversation with the public to interfere

with the collection of tickets.

Willson denies carrying passengers free; and the matter of the watch was not brought up. F.A.W., 21/5/84.

No. 4.

Joseph Cantor.

Mr. G. Hale to The Superintendent of Tramways.

Sydney, 4 July, 1883. was travelling by the Waverley tram (which arrives at Queen-street, Woollahra, at 6.10 p.m.) By giving this your kind Yours, &c., GEO. HALE. last night, when I was insulted by the guard—Cantor, I am told, is his name. consideration I shall feel greatly indebted.

Cantor, for report.—J.R., 5/7/83. I beg leave to state it was about 6.5 p.m. when I left the yard.—J. Cantor. Memo to Cantor to deliver to Mr. Hale, asking if he is the conductor.—9/7/83. Mr. Hale now wishes to withdraw his charge against Cantor.—J.W.T., 13/7/83.

Mr. G. Hale to The Superintendent of Tramways.

Dear Sir, Sir, Sydney, 12 July, 1883. In reply to yours of the 10th instant, I beg to inform you that as I do not like any one to lose their situation I will withdraw on these grounds. Yours, &c., GEO. HALE.

Mr. J. Cantor to The Superintendent of Tramways.

I beg to state that on the 7.5 p.m. trip from Enmore, on arriving at the yard I dropped the cars from Phillip-street on to No. 3 road, with my assistant Orgreen, just above the points. After laying there a short time Pointsman Webber called out to the driver to come back. He told me to take off my brake. At this time the motor was standing near the cars and fireman was talking to Pointsman Webber about trying to get home. This was near the back of the hind car. When the pointsman told him to come back I also blew my whistle for him to come back, as I thought by him being there so long he was coupled up. I took off my brake and waved him back. The cars came back by themselves and no motor. When the cars got half-way between the bottom points and the block I saw there was no motor, and I at once put on my brake and blew my whistle for the assistant to put his brake on, but he was off the car. He did not say he was going away. When I put my brake on so quick the cars skidded and the back bogies went over the block. If the assistant had been at his brake we could have stopped the cars from going over the block. I remain, &c.,

Cantor put back as assistant by Mr. Roberts.

1. Who put him in charge of a tram without sanction of Superintendent? 2. Who was his mate at the time the tram of which he had charge on 16th instant, when he let it over the roadway in Macquarie-street? 3. What was his mate doing at the time of the accident? 4. Instruct Webber to report what he saw of the accident.—J.W.T. (pro Superintendent), 17/8/83. Traffic Professor Bridge-street.

Cantor was not in charge of tram permanently, but had exchanged work with Conductor Ronald, on account of Ronald being lame. I told Mr. Roberts of the change at the time it occurred.—A. C. Hobart,

Foreman, 17/8/83.

Pointsman Webber to The Superintendent of Tramways.

Bridge-street Yard, 17 August, 1883. I beg to report that last night, the 16th August, Cantor's tram was standing on No. 3 line, and when the road was clear I gave him the signal to come back. He took off his brake and let his cars come back, and when he was back over the points he blew his whistle to stop, and then I heard the cars strike the block, and when I went down to see I found front bogie over the block and the car off the road.

Yours, &c.,
WILLIAM WEBBER. There was evidently carelessness on the part of Cantor, who should have seen his cars coupled up or otherwise. He did not put his brake on soon enough. The damage done to car is at least something heavy. I recommend that he (Cantor) be fined a week's pay.—J.R., 21/8/83. Commissioner.

What will cost of repairs be?—D.V., 23/8/83. Mr. Midelton. Will Mr. Roberts please say what is the number of the damaged car?—R.J.S. Car No. 96.—J.W.T. (pro Superintendent). Mr.

Howe, for reply to Secretary's minute. __J.M.

See letter.

I think there is some mistake about the number given of car. No. 96 car was not damaged, but on the same date, at Bridge-street yard car No. 75 was damaged in the manner herein described. To make the latter car in as good condition as before the occurrence would cost £30; but the estimated cost for repairing it so as to enable it to be continued running, is £3.—H.B.H. Fine approved.—D.V.

Mr. G. T. Dickinson to The Commissioner for Railways.

Bulli Coal Mining Company's Office, 19 November, 1883. I have the honor to write to complain of Guard No. 46, Waterloo tram, on Saturday, 17th Sir, instant—tram leaving at about 12 55 p.m.—in reference to the following circumstances:—I met the tram at Market-street, as it was proceeding from the Terminus towards Waterloo. Upon seeing that all the seats in the lower compartments and upper parts of both cars were not only full but people were standing along the upper gangway in front of the seats and on the platform on top of stairs, I stepped on the lower platform with some five or six others, and remained standing, the guard making no objection to our getting on. In the course of a few minutes or two a young guard (No. 46) came along, and in a peremptory manner ordered us to go upstairs. I pointed out to him that there was not even standing room, except on the stairs, and he told me to stand there, on the steps. This I refused to do on account of the danger which is apparent, on considering the lowness of the rail; the guard then told me I must go upstairs or get off. I said it was impossible to go upstairs as every gangway was choked with people, and as I was only-going a short distance I refused to get off, upon which he tried first to drag me off, and then to push me off, both of which efforts were ineffectual; several men standing on the stairs called out to him to be careful, and he then left and went collecting fares. Another guard came along and took my fare, among others, who were all standing on the platform. (No. 46 had made no attempt to prevent others getting on the tram and standing on the lower platform, subsequent to my going there.) A gentleman standing by told the guard he was exceeding his duty, and was immediately ordered to "hold his tongue and mind his own business." When I left the car, at the George-street Police Station, I gave the guard my name. I may mention here that he had not asked for it before attempting to push me off the car. The man all through was most excited and vehement, although not abusive.

In closing, I beg to refer you to Mr. Macdonald, E.S. and A.C. Bank, Pitt-street, who witnessed the whole circumstance. Applogising for troubling you at such length, and trusting that the guard may be cautioned against future assaults on passengers, I have, &c., G. T. DICKINSON.

ERTS, B.C., 19/11/83.—G.B. Who was the conductor in charge? Let him read this What has the assistant conductor to say? Obtain both reports.—J.R., 20/11/83. No. Mr. Roberts, B.C., 19/11/83.—G.B. note and reply. According to conductor's report the gentleman should have gone upstairs, and from the sistant it appears the conductor only did his duty.—J.R., 3/12/83. Commissioner. 46, Cantor. report of the assistant it appears the conductor only did his duty.—J.R., 3/12/83.

Mr. O'Brien to refer to some of the witnesses.—D.V., 4/12/83.

Conductor Cantor to The Superintendent of Tramways.

Sydney, 22 November, 1883. I beg leave to report that on the 17th of November I left Bridge-street for Waterloo about 1 beg leave to report that on the 17th of November 1 left Bridge-street for wateriou about 12.57 p.m. with a special. On arriving at Market-street there were about four passengers standing on the platform of the back car. I asked them to go upstairs, as nobody was allowed to ride on the platform. They all went up except one gentleman. I asked him to go upstairs, that no one was allowed to ride there. At this time there was room upstairs; he said there was no room. I then told him to get off and wait for the next; he said he would do neither. I then went round collecting the fares. After I collected the fares I asked his name, which at first he would not give. He wanted to go away. I told him that I must have his name. He then gave his name, and then some gentleman who was with him said I was exceeding my date. J. CANTOR.

The gentleman's name was Mr. Dickinson. Witnesses-Mr. James, Mr. Pike, and Mr. Zucker.

Assistant-Conductor Scully to The Superintendent of Tramways.

I beg to report that on the 17th of November I was on the 12.56 special to Waterloo, assistant to Conductor Cantor. When at Market-street I heard the conductor in charge ask a passenger to go upstairs, as he was standing on the footboard, and he refused to go up or get off the car when asked (there was room upstairs). Saw the passenger write his name for conductor when he was getting off at George-street.

I have, &c.,

M. SCULLY.

Traffic Inspector O'Brien to The Commissioner for Railways.

Tramway Department, Sydney, 6 December, 1883.

Re attached complaint against Conductor Cantor.

THE altercation took place on the front of the back car, on which Mr. Dickinson, Mr. M'Donald, and Cantor were standing, while the witnesses James, Pike, and Andrews were standing on the back of the

Mr. M'Donald says Cantor was very rough and appeared to have lost his temper, and that he did not ask an address before he tried to force Mr. Dickinson off the tram. He further states there was no room on the upper deck, that the stairs were crowded, and that he told Cantor he was exceeding his duty.

Santor's own witnesses, James and Pike, state there was standing room only on the upper deck of the hind car, and they saw several passengers, who stood beside Dickinson, go up when asked to do so by Cantor. They heard Dickinson refuse to go up or get off the car, when Cantor seized him by the collar with both hands and tried to force him off; some passenger spoke, and Cantor let Dickinson go. They heard nothing about name or address till Dickinson was leaving the car at George-street.

W. Andrews, a clerk in the Tram Office, corroborates James and Pike.

The

The trouble in this case seems to have been brought about by allowing passengers to get on a tram already overloaded, but it is very difficult to prevent it at certain times of the day,

Cantor is a young man, and appears to have acted without realizing the position. FRANK O'BRIEN,

Traffic Inspector.

Minute of the Commissioner for Railways: -It is evident that the guard acted indiscreetly in laying hands upon Mr. Dickinson, and he should be warned not to act in that way again, but to take the name and address of persons who refuse to move off the platform. Express regret to Mr. Dickinson that the conductor should have had to remove him from the car by force, but point out that if the conductor had taken his name and address in the first instance and reported his refusal to leave the platform it would have been my duty to have taken legal proceedings against him under the by-laws. Add that the conductor has been cautioned.—CH.A.G., 13/12/83.

The Commissioner for Railways to Mr. G. T. Dickinson.

Department of Public Works, Railway Branch, Sydney, 15 December, 1883. Referring to your letter of the 19th ultimo, complaining of the conduct of guard No. 46 in attempting to forcibly eject you from the Waterloo tram-car on Saturday, the 17th idem, I have the honor to inform you that I have caused inquiry to be made in the matter, and the reports are now to hand.

I must express my regret that the conductor should have tried to remove you from the car by force, but have at the same time to point out that if he had taken your name and address in the first instance, and reported your refusal to leave the car platform, it would have been my duty to have taken proceedings against you under the by-laws. I may add that the guard has been cautioned to be more careful in future.

I have, &c., A. GOODCHAP,

Commissioner for Railways.

 $Mr. \ Roberts. --G.B., \ B.C., \ 15/12/83.$ Cantor cautioned and informed according to Commissioner's minute paper. A difficulty exists when address is refused.—J.R., 15/12/83.

Inspector Wigg to The Superintendent of Tramways.

Tramway Office, 3 March. 1884. I beg to report for your information that by the Enmore tram, 3.20 p.m. from Bridge-street, of which Conductor Cantor was in charge, two young men came on the top of the car at Hordern-street, As Cantor passed them by without charging when collecting his fares, I asked him, on arriving terminus, how it was that he had done so. He replied that they had paid him right through at Enmore terminus, how it was that he had done so. He replied that they had paid him right through when getting on at the corner of the Newtown Road. These two men waited near the cars and went back again in Cantor's tram towards Sydney, and from their manner and movements whilst waiting I am of opinion that they were acquaintances of his, and that his statement to me of their having previously paid

their fares right through was not correct.

I have, &c., WALTER S. WIGG.

Conductor Cantor, for immediate report.—J.R.

Conductor Cantor to The Superintendent of Tramways.

Sydney, 4 March, 1884. I beg leave to state, in answer to the report charged against me by Mr. Wigg, that on the 3.20 p.m. trip from Bridge-street to Enmore on March 2nd, of which I was in charge, on arriving at Newtown Road two young men got on the car. When I started the tram I asked them for their fares, and one of the young men, who are strangers to me, gave me a shilling and told me to take through for two I registered 10d. and gave 2d. change. At this time they were standing on the stairs, and I asked them to go inside. I think they went in at Forbes-street or Missenden Road. After arriving at Enmore they asked me if the tram was going to Marrickville. I told them no, and said it would be about half an hour before one went there, so they said they would not wait, and they came back with me.

J. CANTOR. Who instructed Cantor to take the fares through? I don't quite believe the statement of Cantor.

J.R., 7/3/84.
I had no orders to take fares through; but on Marrickville nearly all the conductors take the fares through, and with passengers who don't understand the sections it is always best to do so, as it saves any difficulty.—J. CANTOR, 11/3/84. Superintendent.

I recommend that this man's services be dispensed with. He will not obey orders re the collection s. This is how these men defraud the Department.—J.R., 13/3/84.

Inspector Wigg to The Superintendent of Tramways.

Tramway Office, Phillip-street, 15 March, 1884. After having read Conductor Cantor's answer to my report of March 3, I am still of opinion that the two young men referred to were friends of his, and that they did not pay any fare. As to his statement of their standing on the stairs of the car, there was no occasion for doing so, as there was plenty of room on the top of the car, where he ought to have sent them at once if they were doing so. that they got on the car at the corner of the Newtown Road, but they were first seen by me at Hordernstreet, Newtown, when they came off the top of car. Also, his and their manner, whilst conversing together at Enmore, was not that of strangers to each other. I have, &c., WALTER S. WIGG.

Forwarded for the Secretary to see. This man Cantor should be punished.—J.R. Mr. O'Brien and Mr. Roberts,-Please see me to-morrow.-D.V.

Extract from Commissioner's minute of 27/3/84:—"Joseph Cantor: Services to be dispensed with by a week's notice."

EVIDENCE.

Frank O'Brien, traffic inspector, states:—On the 6th December last I was ordered by Mr. Vernon to inquire into a charge of assault, made by Mr. Dickinson, of the Bulli Company, against Cantor. From the witnesses Cantor named I found that he had not asked the passenger's name before roughly seizing him by the throat and trying to force him from the tram. Cantor was cautioned on the 7th December last; Cantor with Gilberthorpe was charged with breaking a drunken man's arm while removing him from the tram. The case was dismissed as plaintiff was drunk, but Mr. Dillon said he had no doubt the man's arm was broken in his struggle with the two conductors. Cantor was very careless in his duties; I have seen him miscollecting fares, through talking with passengers, and make mistakes with his indicator.

Walter Wigg, revenue inspector, states:—On March 2nd, 1884, two young men got on Cantor's car at Hordern-street; paid no fare to Enmore; stood there talking with Cantor, and left again for Sydney

in the car with him.

J. S. Muir, timekeeper, states:—On April 18th, 1883, I was speaking to Mr. Roberts at the Bridge-street platform; a lady and gentleman tried to catch the Glebe Point tram which had just started. Cantor laughed at them and called to them to come on, and put his thumb to his nose with the fingers extended, making a lunar as it is called; Mr. Roberts saw it.

James Wilmott, points-cleaner, states:—On the 9th of March, 1884, Cantor started a tram from Bridge-street before passengers had time to get in; one of them called to him to wait when he put his

thumb to his nose and laughed at them.

J. T. Campbell, car-cleaner (foreman), corroborates Wilmott, and states he has repeatedly seen Cantor do the same, and on one occasion saved him from being reported, by telling the gentleman he would let Mr. Roberts know; Mr. Roberts saw what took place.

Lambert and Murray, revenue inspectors, have seen Cantor rude to passengers and generally

neglecting his duties; carrying dead-heads, &c.

J. Roberts, Superintendent, corroborates Muir, Wilmott, and Campbell as to making lunars at passengers, &c., and states Cantor has been many times reported, fined, suspended, &c., for breaches of the rules, and that he is unfit for the position of conductor.

Registered Reports.

4th July, 1883.—Insulting behaviour to a passenger (Mr. Hale.) 6th December, 1883.—Assaulting a passenger (Mr. Dickinson.)

16th August, 1883.—Fined a week's pay for letting cars run into Bridge-street yard and damaging

car to the value of £30.

15th March, 1884.—Carrying passengers (friends) to and from Enmore and not collecting their fares.

Re Joseph Cantor.

CONDUCTOR CANTOR was in our opinion in no way suited for the position he held, being careless, inattentive and impudent to passengers.

WILLIAM LAMBERT, Revenue Inspectors. W. C. MURRAY,

Report.—Joseph Cantor.

3 days' suspended.	Pay-sheet,			August, 1883.	-
1 day absent.	do	do .	13th	September, 1883.	
2 days' do	do	do	11th	October, 1883.	
1 day do	do	do	25 th	do	
2 0				T S 1V	TTTP

Timekeeper, 16/5/84.

Minute of Secretary for Public Works.

I READ this history over to Cantor and asked him what he had to say. He asked for a postponement of inquiry, but I informed him I could not listen to request as he was aware of the charges and in every case an inquiry had been made when he had either admitted or denied the charges. He stated he could produce witnesses to prove that he was not rude or rough to Mr. Dickinson, that he merely asked him to go up stairs as he had orders to allow no one to stand on the stairs or boards. As regards Mr. Hawke, he had simply acted under Conductor Gilberthorpe's instructions in assisting to remove Hawke from the car and had used no undue violence. I informed him that I knew Hawke to be a quiet, well-conducted man, and was of opinion he had used undue violence in removing him, and this result was shown in the careful examination at the Police Court. In regard to the miscollection of fares, he explained that it was the custom to collect through fares from passengers for Marrickville on the first section; consequently on the other sections no fares were collected, but he had to acknowledge that he acted against definite instructions in this matter. He denied the charge that he was in the habit of carrying passengers free.

No. 5.

J. B. Cullen.

Traffic Foreman Gamgee to The Superintendent of Tramways.

Sir. Bridge-street Yard, 8 July, 1883. I beg respectfully to report that on the arrival of the 2.33 p.m. tram from Waverley, before the passengers had time to alight at Bridge-street the conductor in charge, George Searles, let the cars in the yard before the passengers had time to alight from them; both he and his assistant (Cullen) commencing laughing at them. When I spoke to them about it they said they had plenty of time to get off. I replied they had not, and it was their duty to see that they were off at Bridge-street, as the passengers were half. way down the stairs at the time. The passengers said that they would report the matter. I told them (Searles and Cullen) that they would be reported, when they replied, "Let them, and be b--d to them : they will want us to take them off the cars. I have, &c.,

G. GAMGEE,

Traffic Foreman. Ask these two men to come to the office, and let foreman be here also. Let me know appointed time.—J.R., 9/7/83.

I have seen these two men. I have given Cullen another chance.—J.R., 11/7/83.

I am informed that one afternoon last week you obtained drink while on duty, having the same in a flask; also that you offered drink to another conductor when on duty. In consequence of your conduct in this matter you are required to show cause why you should not be dismissed the Service. J.W.T. (pro Superintendent), 18/8/83.

Assistant Conductor Cullen to The Superintendent of Tramways.

Sir,

In reply to your report, I beg to state that I did get a person to get me a glass of spirits whilst on duty, as I had the cramps in my stomach, which I am subject to at times, but only once; I also did ask Skinner, the conductor, to have a drop of it, not thinking it any harm.

This is the only time I have drank a drop of spirits whilst on duty since I have been in the Service:

J. B. CULLEN.

Seen. I am satisfied with this explanation.—J.R., 20/8/83.

Extract from Minute-paper, 84/1,434:—"J. B. Cullen, tramway conductor; services dispensed with on a week's notice.'

EVIDENCE.

Frank O'Brien, traffic inspector, states :- In July last my attention was drawn to Cullen at Glenmore Road; a lame passenger narrowly escaped a serious accident through the tram moving on too quickly; Cullen was gossiping with a passenger standing beside him on the platform, and said, "The b—— old crippled sod had no business on the trams"; I learned Cullen's name the next day, and reported the matter to Mr. Vernon, who advised to wait and see if the passenger thrown from the step would make a claim, and waiting action, no further steps were taken; I have seen a man, who I believe was a checktaker at the "Royal," ride in Cullen's car and pay no fare—Cullen talking with him; I noticed him ring only one or two cash fares on his indicator; one night in the latter part of last January I saw him, apparently booking bets, opposite the "Royal," when Foreman Hobart told me he was on sick leave; after his discharge he had two interviews with Mr. Vernon, and solemnly assured him that he had never been inside nor belonged to a certain gambling club, nor made a book at one suppressed by the police and the owner fined; on the strength of that statement Mr. Vernon ordered an inquiry, of which Cullen was advised, but failed to attend, although he was hanging about King-street at the time; before leaving, Mr. Vernon mentioned this to the Commissioner.

T. Jones, revenue inspector, states :- Acting under instructions from Mr. Roberts, I paid 5s. and became a member of the Totalisator Turf Investment Club, held in a room rented for the purpose at Little's, "Bass' Hotel," Market-street; only members were admitted; Cullen was a member; I have seen him there booking bets; the club was broken up by the police, and the owner fined.

J. T. Campbell, foreman car-cleaner, states:—I have known Cullen make a book on races in the

yard at the Bridge-street Terminus; he is a rough uncouth man in his manner, and commonly uses bad

language

G. Gamgee, traffic foreman, states:—On the 8th February, 1883, Cullen and another conductor ran a tram into the Bridge-street yard before the passengers had time to alight; the passengers complained, and I spoke to both conductors, and both made use of bad language and insulting behaviour; I reported the matter to Mr. Roberts, who severely consured Cullen and discharged the other conductor; about the end of February last complaints reached me and Foreman Hobart from passengers of rough and uncouth treatment from Cullen; on reporting the matter to Mr. Roberts he ordered Cullen to be taken off the cars and put to work on the street water to the conductor of the cars and put to the street water to the conductor of the cars and put to the street water to the conductor of the cars and put to the street water to the conductor of the cars and put to the street water to the conductor of the cars and put to the street water the conductor of the cars and put to work on the street water than the cars and put to work on the street water to the conductor of the cars and put to work on the street water to the cars and put to work on the street water to the cars and put to work on the street water to the cars and put to work on the street water to the cars and put to work on the street water to the cars and put to work on the street water to the cars and put to work on the street water to the cars and put to work on the street water to the cars and put to work on the street water to the cars and put to work on the street water to the cars and put to work on the street water to the cars and put to work on the street water to the cars and put to work on the street water to the cars and put to work on the street water to the cars are the cars and put to work on the street water to the cars are the work on the street watering tank; Cullen did not appear when first ordered to the tank, but afterwards did so, and remained on the tank till his discharge.

Clarkson, conductor, states:—Cullen was working with me as assistant conductor; some lady

passengers complained to me of his rough treatment, and I reported it to the traffic foreman.

J. Roberts, Superintendent, states:—In February, 1883, Cullen was reported by Foreman Gamgee, for insulting behaviour and using bad language to passengers; after hearing his statement I severely reprimanded him and gave him another chance; a few months ago he was again reported to me as being rough and uncouth with passengers, when I gave orders for him to be taken off the cars as conductor, and put to work on the street-watering tank.

Registered

Registered Reports.

8th February, 1883.—Foul language and insulting behaviour to passengers. Foreman Gamgee heard and reported to Superintendent.

19th August, 1883.—Having a bottle of spirits in his car while on duty, and offering part of it to another conductor. F. O'B.

Re Cullen.

In the evidence against this man, for Conductor Clarkson (clerical error) read Conductor Cavanagh, who was present at the inquiry in order to have given personal evidence if required. See his written statement, attached, which was made prior to the late inquiry; and for Mrs. Fulford, read Mrs. Ferguson.

The clerical errors occurred through Foreman Gamgee misunderstanding what the conductor said.

J. O'B., 4/6/84.

Memo. to Traffic Inspector F. O'Brien.

Sir,

I have been several times informed by passengers travelling on the Waverley line, of Conductor Cullen's conduct towards passengers as being very rough in his manner to them.

A. M. CAVANAGH.

Re J. B. Cullen.

Thomas Jones states:—By instructions received I became a member of the Totalisator and Turf Investment Club to see if a certain man, employed in the Tram Department, was in the habit of going there. I then saw Cullen there as a member of the club; both he and I remained members of this club until it was broken up. The meetings were held at Little's, "Bass Hotel," corner of Pitt and Market streets.

Mr. J. T. Campbell to Traffic Inspector O'Brien.

Sir,

Bridge-street Yard, 20 May, 1884. I beg to report for your information that I have known Cullen to make a book on horse-racing

Yours, &c., J. T. CAMPBELL.

Report.—Cullen, J. B.

Absent 5 days. Pay-sheet ending August 31st, 1883.

1 day. September 13th, 1883. 1 October 11th, 1883. December 6th, 1883. January 31st, 1884.

April 5th, 1884.

Dismissed, April 6th, 1884.

in the yard, and he has been considered a vulgar-spoken man.

J. S. MUIR,

Timekeeper, 16/5/84.

Minute of Secretary for Public Works.

I BEAD Cullen's history to him as recorded. He states in reply to Traffic Inspector O'Brien's complaint that he has no recollection of such an occurrence and is entirely innocent of making use of the words attributed to him. I allowed Cullen to examine O'Brien, but nothing definite was elicited, and O'Brien is confident that the words were made use of by Cullen. In regard to several reports of uncouth and bad language, Cullen admits that on occasions he may have made use of bad words, but denies being uncivil or rough with passengers, and states that he is innocent of the charge for which he was shifted to the street-watering tank, and that the charge was made through spite on Foreman Gamgee's part. In regard to the charge of having spirits on his car, Cullen explains that he was unwell; he asked to be relieved, but could not get away, and had to take a little spirits to keep him up. He denies that he was in the habit of making a racing-book, although he acknowledged making a few wagers and putting them in his pocket-book. He was not a member of a gambling club, although he had been a member of a totalisator, which was retarded by the relief of the pocket book. which was stopped by the police. He denies that he ever carried passengers without collecting their fares.

No. 6.

Reports of Superintendent of Tramways and Traffic Inspector.

Re character and habits of some Conductors.

Confidential. Tramway Department, 24 March, 1884. WE submit, for the Commissioner's information, the character and habits of certain conductors.

inquiries from which the information is compiled extends over the past nine months, from two distinct sources, and has been thoroughly and impartially tested, and we vouch for its being substantially correct.

Cullen.—Was until lately a friend of Challoner's, when they fell out; makes a small book on races and pays if it suits; a leading member of a gambling club, lately suppressed by the police; frequents the "Theatre Royal" on the same terms as Challoner; has met new conductor there, to show him the ropes and taught him how to keep tickets and told him to carry the check-taker free on his tram; is very foul-mouthed and rough with passengers, and is quite as dangerous, but more curping, then Chelloner; often mouthed and rough with passengers, and is quite as dangerous, but more cunning, than Challoner; often known to miss ringing for cash fares. Cantor.-

Cantor.—Very flash, and frequents theatres, &c.; pointed out by general detectives as often seen at night with prostitutes; very careless on duty, missing some and not ringing for other fares; several charges of assaulting passengers against him, carrying dead-heads, &c., &c.; lives above his salary.

Gilberthorpe.—This man is something after the Cantor style of living; is quite a model of suavity to speak to; dresses expensively and is often seen with loudly-dressed females at places of amusement; repeatedly known to miss fares, especially cash; was in the employ of Newton & Co., who dismissed him, and refused to give a reference. and refused to give a reference.

O'Brien.—Confirmed drunkard and gambler; beery appearance; will do anything for money to gamble with; was once a 'bus-driver, but had to be got rid of; drunk on one occasion and lost his Government watch (suspected of gambling it away to a 'bus-driver); often in low public-houses at night with

C. Willson; known to miss fares.

Willson.—Gambles and drinks; friend of above, and knows the methods of robbing the Department by all the black sheep; often noticed not ringing for cash and other fares. Carries a well-known Bourke-street prostitute about in his car. This woman (——) was allowed by Willson to pass herself off as his wife for the purposes of her peculiar business, passing nights at her house with other men, and telling his own wife he was detained on duty. Appealed to Mr. Roberts to get a gold watch from Willson, and she then stated she kept Willson from the proceeds of her business. Willson admits his relations with the

There are others under surveillance, but if the above men were removed it would for a time direct the revenue to its proper channel.

J.R. F.O'B.

No. 7.

Minute of Secretary for Railways.

I ENCLOSE a list of men whose services I recommend be dispensed with. They are most undesirable servants, and we can replace them with better men. I need not point out to the Commissioner the great importance of having upright and honest men as conductors.

D.V., 26/3/84.

No. 8.

Minutes of Commissioner for Railways.

GIVE each of these men a week's notice. If they demand a discharge, give it in the following terms: "Served as a Conductor on the Tramway from . His services were dispensed with, under the Rules, by a week's notice.'

Сн.А.G., 27/3/84.

Instructions carried out.—J.R., 28/3/84. Commissioner.

No. 9.

Letter from dismissed Tramway Conductors to The Secretary for Public Works.

Sydney, 13 May, 1884. We, the undersigned, beg that you will allow us to be represented at the inquiry as to our dismissal, by counsel, as our characters depend upon the result of the inquiry; also when and where the inquiry will take place, and the charges preferred against us.

We remain, &c., CHAS. WILLSON. JOSEPH CANTOR. CHARLES GILBERTHORPE. DAVID ALFRED O'BRIEN. J. B. CULLEN.

Minute by the Secretary for Public Works:—Register and put by with papers.—F.A.W., 14/5/84.

No. 10.

Report from Traffic Inspector O'Brien re Inquiry.

Re Discharged Conductors' Inquiry.

Tram Department, 26 May, 1884. The brief of evidence submitted for the Minister's information showed in every case sufficient breaches of the rules (which were quoted) to justify the steps taken. Written statements in full were in each case attached and the writers present to give direct personal evidence, if called upon. The discharged men now boast that they were promised employment in another Department. If these men are re-employed in the Government service it will encourage pilfering and negligence in others, who will argue that the worst that can happen to them will be change of employment. It will also render further efforts to protect the Revenue all but hopeless.

I have no hesitation in stating that at the time these men were discharged the Department was losing a large sum of money, either through direct pilfering or from the careless negligence of conductors not properly looking after and collecting their fares. I make this assertion not alone from my own observations but also from a comparison (made by Mr. Vernon's orders) with Mr. Roberts, whose sources of information were distinct from mine.

Challoner's case (with the Crown Solicitor's opinion attached) shows how all but impossible it is to get an open conviction.

Willson's

Willson's case also illustrates the difficulty of obtaining all fares that pass through the conductor's Two persons saw him take a cash fare, which he would have kept only for seeing them notice One has seen him repeatedly put cash fares in his pocket and not ring for them. Four have seen him miss fares and the passengers leave without paying at all, and two state passengers have often handed them fares Willson failed to collect.

Mr. Vernon realized the difficulty and advised the only course open to the Department, viz., to get

rid of men against whom it could be fairly shown that they were not, through strong suspicion on the one hand or continued negligence on the other, profitable servants, both involving a loss of revenue to the

Department.

FRANK O'BRIEN, Traffic Inspector.

No. 11.

Minutes of Secretary for Public Works.

Dismissal of Tramway Conductors.—Inquiry into the matter.

General Remarks.

Department of Public Works, Sydney, 21 May, 1884.

In accordance with my promise to make inquiry, the five tramway conductors, viz., Cullen, Cantor, Gilberthorpe, O'Brien, and Wilson, who were dismissed from the Service in April last, waited upon me to-day. I had each man before me in turn, and stated generally the reasons which induced the Department to dispense

with his services. The replies to the charges are given on the papers respecting each case.

I stated at the outset that I did not intend to act as a magistrate in this matter. They had asked to be represented by counsel in this inquiry, but I could not consent to sit and conduct any formal inquiry, such as the admittance of counsel and witnesses would involve, nor did I think it was necessary. In the first place I was doing more than any Minister had ever done before in holding such an inquiry, and if every man dismissed demanded an inquiry and was listened to as some wished to make out he should be, it would require a dozen Minsters to conduct the business of the office.

That they must understand that the Commissioner ruling over such a vast department as he did must have power to deal with the men as he thought best in the interests of the Department; that they joined the Service under no agreement to give a lengthy notice to leave, and no agreement was made that a long notice would be given to them, if at any time it was decided to dispense with their services. In a private business if a man did not suit his employer he was simply told his services were no longer required, and he would have to leave. In the exercise of his power the Commissioner deemed it desirable in the interests of the Department to dispense with their services and they accordingly received notice. No particular cause was assigned for their removal, nor had anything been said which would lead any one to suppose they were dismissed for peculation or fraud. A man might be as honest as the day but be so slow or careless in the performance of his duties that it would be to the interest of the Department to dispense with his services.

I informed them I thought they acted very injudiciously in bringing the matter under the notice of Parliament and having it discussed, for by doing so undue publicity had been given to their dismissal, and vague and discreditable imputations had been assigned as the reasons, in consequence of which no doubt their characters had been affected; but the Department was in no way responsible for these reports or for those which appeared in the newspapers. When the question was first submitted to me by the Commissioner he laid the facts before me and I concurred with him that it would be to the interest of the Department that the services of these men should be dispensed with. It was the Commissioner's intention not to intimate to the men the causes for which they were dismissed, but I thought this would be unwise, and directed Mr. Roberts to inform the men that upon inquiry Mr. Vernon, the Secretary, would intimate to them the reasons for their removal. As a matter of fact they did not wait upon Mr. Vernon, nor appeal to me, as it was competent for them to do, and as they should have done.

For the inquiry I had asked Mr. O'Brien to collect all the information bearing upon each case, and at the same time had instructed him to eliminate all matters that were outside the Department, as it was my intention to deal simply with the men in connection with their services as tramway employés, and to take no notice of any matters that were purely of a personal nature and had no bearing upon their official

positions.

In each instance there was probably no single charge which was sufficient in itself to require the dismissal of a man, but against each there were a number of charges of neglect of duty, disregard of instructions, carelessness, &c., and it was the aggregation of these charges that influenced the Commissioner in his

decision to dispense with their services.

I see no reason to say that in any case the interests of the Department were not best served by the removal of the men, and it is the interest of the Department alone which has to be considered, and whilst I think this I would not for a moment suffer an injustice to be done to any man nor could the Department or its reputation be served by such a course.

Each man's case was then taken separately and is given on papers enclosed.

F.A.W., 21/5/84.

Re dismissal of Tramway Conductors.—Conclusion of Inquiry.

AFTER the conclusion of inquiry I had the five men together before me, and informed them that I would give the matter, as they desired, a full and impartial consideration.

I saw no necessity, and they as sensible men would see there was no necessity, for their request to be represented by counsel; but it was my earnest wish to see justice done, and for that purpose I had taken the action of instituting the inquiry, and if I found that any wrong had been done them I would have it publicly rectified. I had the complaints against them, I had seen themselves personally and heard their statements, and all would be judged carefully and fairly. Whatever my opinion might be, however, I did not think it would be desirable to approve of their reappointment in the Tramway Service after what had transpired, as they would go back to work under

some who would be determined to do their best to get rid of them.

The men stated it was not so much the desire for re-employment as the desire to have their characters

cleared that led them to court à full inquiry into their dismissal from the Tramway Service.

F.A.W., 21/5/84.

Re dismissal of Tramway Conductors.

30 May, 1884.

I HAVE fully considered the charges advanced against these men, and have had the advantage of personally

seeing each man and questioning him in respect to the charges preferred.

I can arrive at no other conclusion than that the Commissioner for Railways acted perfectly right in recommending that the services of these men should be dispensed with. Though there might be a legal difficulty in establishing any charge of actual dishonesty against the men, there is in my mind no moral doubt that they are a class of men whose services should not be retained.

Serious charges are preferred against each man, and all, with the exception of O'Brien, are accused of not accounting properly for the fares of the passengers carried. No doubt the non-ringing of the bell-indicator might arise from negligence only, but in any case the omission to ring, to which the evidence so strongly points, would justify their removal from the Service.

The men in general terms deny the charges, and this might naturally be expected, since an admission of the month of the passengers carried and this might naturally be expected, since an admission

of them would establish their guilt; but I fail to see what motive other than the public interest the officers

who so charged them could have in preferring the charges against them.

I should be very sorry to injure the reputation of any man, but a sense of public duty compels me to say that the evidence placed before me justifies the conclusion I have arrived at—that their continuance in their positions in the Tramway Service would not be to the advantage of the Department nor to the public interest.

LEGISLATIVE ASSEMBLY.

NEW SOUTH WALES.

ELIZABETH M'GREGOR.

(PETITION OF.)

Received by the Legislative Assembly, 21 May, 1884:

To the Honorable the Members of the Legislative Assembly of New South Wales, in Parliament assembled.

The Petition of Elizabeth M'Gregor,—

HUMBLY AND RESPECTFULLY SHOWETH:-

That your Petitioner is the widow of John M'Gregor, who was a conductor and special constable for the Government Tramways, who entered the Service on or about the thirty-first day of August, one thousand eight hundred and eighty.

That between the hours of two and three o'clock on the afternoon of the twenty-third day of October, one thousand eight hundred and eighty-three, the said John M'Gregor, after having conducted the tram of which he had charge to the tramway terminus at Bridge-street and completed his day's work as appointed, and whilst returning to his residence at Waverley, in a tram under the charge of another conductor, was either thrown or fell from one of the cars when the tram was in motion, near Church-street, Waverley, and received serious injury, from which he died, on the twenty-eighth day of October, one thousand eight hundred and eighty-three. Owing to the injury he received the said John M'Gregor was incapable of explaining how the occurrence happened, and your Petitioner has not been able to obtain any reliable information with respect thereto.

That the said John M'Gregor was supplied with the Rules and Regulations for the guidance of officers and servants and the conduct of traffic on the tramways, and was well acquainted with his duties, and that the first of such Rules comprises words to the following effect:—"Every employe shall devote himself exclusively to the Service, whether his duties are specified or not, with zeal and fidelity; he shall attend at such hours as may be prescribed, and consider himself on duty when on the tramway line or premises, although it may not be his regular time of attendance."

That the said John M'Gregor had also been duly appointed a special constable for tramway purposes, and was sworn in on the fourteenth day of March, one thousand eight hundred and eighty-three, and, by virtue of the said Rules and Regulations and such appointment as a special constable, was on duty on the tramway line at the time of receiving the said injury which occasioned his death as aforesaid.

That your Petitioner applied to the Honorable the Minister for Works, on the fourteenth day of December, one thousand eight hundred and eighty three setting forth your Petitioner's claim for some

That your Petitioner applied to the Honorable the Minister for Works, on the fourteenth day of December, one thousand eight hundred and eighty-three, setting forth your Petitioner's claim for compensation, and received a reply from the Commissioner for Railways, dated the twenty-first day of December, one thousand eight hundred and eighty-three, to the effect that Mr. Secretary Wright regretted that he was unable to approve of any gratuity being allowed me by the Department, as gratuities were only allowed to the widows of employes when their husbands met their death in the execution of their duty, thereby implying that my late husband the said John M'Gregor was not on duty at the time he received the injury which occasioned his death as aforesaid.

That your Petitioner was left with eight children, and another child has been born subsequently to the death of the said John M'Gregor, and the family is totally unprovided for, and your Petitioner is now in poor and distressed circumstances.

Your Petitioner therefore most humbly prays that your Honorable House will be pleased to cause inquiries to be made, and take this case into their favourable consideration, with a view to securing to your Petitioner such relief as on examination may appear to be in accordance with the circumstances, and for the reasons set forth in the above Petition.

And your Petitioner, as in duty bound, will ever pray, &c.

Dated this nineteenth day of April, in the year of our Lord one thousand eight hundred and eighty-four.

ELIZABETH M'GREGOR.

