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Heavy Vehicle Safety and Use of Technology to Improve Road Safety

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Contents

Tables

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Chair's Foreword

Reports of the roll out of driverless vehicle technology are ubiquitous. There is rightly a continuing debate about safety and reliability, but also an expectation that technology will change the driving experience and the role of private vehicles profoundly in the near future.

Less public attention has been paid to the application of technology in heavy vehicles, although like private cars, truck technology is advancing quickly on many fronts.

While looking at technology inevitably leads to the cutting edge, our inquiry found evidence of many available technologies, electronic and non-electronic, which we can roll out now to achieve better safety outcomes. It is important not to lose sight of simple, affordable and available solutions as technology advances.

Perhaps of most concern is finding uncertainty in the regulatory landscape. The industry is enthusiastic about technology take-up, but as a result we see different technologies being taken up at different rates. Stakeholders also differ on their support for voluntary or mandatory safety regulation.

While the Committee has not made a recommendation for a particular regulatory framework, as with driverless vehicles, we are convinced that only a national approach to regulation will ensure the best safety outcomes for the state.

The recent spike in the road toll is alarming. We believe it is important, however, not to react in an unplanned way, potentially jeopardising great gains made over many years. The spike must be addressed and we heard the concerns of stakeholders about safe driving on country roads, truck awareness and road sharing, and driver distraction. We recommend the current road safety efforts continue with added emphasis in these areas. If the next twelve months do not see the number of fatalities return to trend, a re-examination is vital.

I thank the 44 people and organisations who made submissions and the 14 people who appeared before us to give oral evidence. I also thank my colleagues on the Committee for their wise contributions, and the staff for their support.

Greg Aplin MP
Chair

Summary

In this report the Staysafe Committee examines the range of technologies available to manage heavy vehicle safety, and the potential of technology to make a greater contribution in the future.

It considers how to encourage industry take-up of new technologies, and the regulatory framework and other measures most likely to encourage early take-up and better safety outcomes.

The Committee also considers the 2017-18 holiday road toll and what early lessons can be drawn for encouraging safer driving, and particularly safer driving by and around heavy vehicles.

The report makes eight recommendations and ten findings.

Chapter One describes the technologies available or under development which manage driver fatigue and other safety risks, and the attitude of the industry and regulators to these technologies. It contains eight findings which recognise:

- the broader industrial, commercial and environmental context for considering heavy vehicle safety
- the benefits of non-electronic technologies
- the concerns of stakeholders regarding electronic work diaries and other telematics
- the limitations of fatigue management technologies, and connected and automated vehicle technologies
- the current capacity of some available technologies to deliver road safety benefits.

Chapter Two describes road safety strategies for addressing heavy vehicle safety, and how the take-up of safety technologies can be best encouraged, regulated and enforced. It contains seven recommendations and one finding which:

- call for the early completion of a NSW Heavy Vehicle Safety Strategy
- endorse a national framework for heavy vehicle regulation
- recognise the limitations of the Australian Design Rules process
- call for a consistent policy on the installation of telematics and the early adoption of proven and available safety technologies
- seek a determination of the relative merits of accreditation and operator licensing, and of the value of an incentives scheme to encourage new technologies
- call for a review of industry consultation arrangements.

Chapter Three examines the 2017-18 holiday road toll and why there has been a recent increase in fatalities. It contains one recommendation and one finding which:

- conclude that the recent spike in road fatalities is not a reason to reject the current road safety strategy
- recommend the current strategy be reviewed with an increased focus on safe driving on country roads, driving safely around heavy vehicles, driver distraction, and management of roadworks.

Findings and Recommendations

The Committee recommends that the NSW Government review its current road safety strategy in response to initial indications of causes of the spike in fatalities, by increasing the focus on:

- safe driving on country roads
- driving safely around heavy vehicles, truck awareness and road sharing
- driver distraction
- management of roadworks.

Chapter One – Heavy vehicle safety technology

Introduction

Ministerial referral of the four terms of reference

1.1 The Staysafe Committee commenced its inquiry into heavy vehicle safety technology on referral from the Hon Melinda Pavey MP, Minister for Roads, by letter received Tuesday 17 October 2017.

1.2 Minister Pavey referred four terms of reference to the Committee under the title 'Inquiry into heavy vehicle safety and use of technology to improve safety', and a preamble which requested that the Committee 'inquire into and report on heavy vehicle safety and the potential for technology to improve road safety'.

Ministerial referral of the fifth term of reference

1.3 By letter dated 5 January 2018, Minister Pavey requested that the Committee expand its inquiry to inquire into and report on the holiday road toll in the period 15 December 2017 to 1 January 2018. This period related to the period in which the NSW Government conducted Operation Safe Arrival and in which a spike in fatalities occurred when compared to the same period in 2016-2017.

1.4 The Committee resolved to expand its inquiry as requested by the Minister, and in response to a continuing spike in road fatalities, adopted the period 1 December 2017 to 31 January 2018 for its examination of the road toll.

1.5 The Committee added the fifth term of reference and the expanded period to the previously adopted four terms of reference. All five terms of reference were adopted by the Committee subject to the preamble emphasising heavy vehicle safety technology, quoted above.

1.6 The complete terms of reference can be read at Appendix One.

Interpreting the terms of reference

1.7 Many submissions received by the Committee discussed matters relating to heavy vehicle safety and operation which were broader than the potential for technology to improve road safety. When the Committee invited 14 witnesses to give oral evidence at a public hearing held at Parliament House on Monday 9 April 2018, similarly evidence was received which discussed broader issues, including:

- Commercial and contracting practices in the heavy vehicle industry and its customers
- The regulation of heavy vehicle driver working conditions
- Different methods of driver remuneration
- The definition of work for the purposes of driver remuneration

- Fatigue management measures which do not involve technology such as the provision of rest areas and fatigue management plans
- The road toll generally
- Driver training for both heavy and light vehicle drivers
- Vehicle maintenance and roadworthiness
- The contribution of country roads to road fatalities.

1.8 In receiving evidence, both written and oral, the Committee accepted that available information and analysis did not always allow for the contribution of heavy vehicle safety technology to improving road safety to be distinguished neatly from road safety generally.

1.9 Further, the Committee is fully aware that its examination of heavy vehicle safety and the potential for technology to improve safety takes place within a broader commercial and industrial context.

1.10 Nevertheless, for the purposes of this inquiry the Committee has applied a relatively strict interpretation to the terms of reference referred by the Minister and the governing preamble, and has generally confined its inquiry and this report to a focus on heavy vehicle safety technology. However, the inquiry did receive evidence, both in submissions and in hearings, which recommended measures other than technology to improve driver and heavy vehicle safety.

Finding 1

The Committee finds that the safety improvements which will be achieved by the application of the heavy vehicle safety technologies described in this report may be limited without a consideration of the safety implications which arise from broader industrial, commercial and environmental issues affecting the heavy vehicle industry.

In-vehicle technologies

1.11 The inquiry's terms of reference make specific reference to two types of heavy vehicle technologies; in-vehicle technologies, and connected and automated vehicle technologies (CAVs).[1]

1.12 Evidence received by the Committee covered a wider range of technologies and other approaches to addressing heavy vehicle safety, some of which are discussed in Chapter Three which deals with the 2017-18 holiday road toll.

1.13 Truck safety can be categorised according to four main areas:

- safety systems, technologies and vehicle types/combinations which prevent or reduce the likely incidence of crashes
- safety systems or technologies which lessen the severity of a crash

[1] See Appendix One

- safety systems or technologies which prevent or reduce the likely effects of driver fatigue and/or distraction
- heavy vehicle maintenance and roadworthiness i.e. ensuring that a truck is maintained in a condition as recommended by the original equipment manufacturer so that all systems operate as intended.[2]

1.14 For the purposes of discussing heavy vehicle safety technology, this chapter discusses in-vehicle technologies, and connected and automated vehicle technologies. The discussion of in-vehicle technologies is subdivided into electronic and non-electronic technologies.

1.15 In considering in-vehicle technologies the Committee noted several submissions which listed and described the technologies available.

1.16 Transport for NSW gave detailed descriptions of available in-vehicle technologies and how they operate, including:

- Object detection systems which warn the driver of potential frontal crashes
- Unintended lane departure warning systems which warn the driver of deviation from the lane
- Headway monitoring systems which warn the driver of unexpected events ahead of the vehicle
- Driver assist technologies which warn the driver of excessive speed
- Vehicle system monitoring which alerts the driver to safety risks such as driver fatigue
- Stability and vehicle control technologies which correct the vehicle automatically.[3]

1.17 Transport for NSW also described telematics systems, including electronic work diaries, which can have both a safety and a regulatory purpose.[4]

1.18 Transport and Road Safety (TARS) Research provided a list of heavy vehicle safety technologies, sourced from the Centre for Road Safety and reproduced below, which grouped technologies according to whether they addressed crash avoidance, driver and occupant protection, or general safety issues.[5]

[2] Submission 35, Truck Industry Council, p6
[3] Submission 42, Transport for NSW, pp57-60
[4] Submission 42, Transport for NSW, p60
[5] Submission 32, Transport and Road Safety (TARS) Research, p5

Table 1: Heavy vehicle safety technologies

Table 1: Heavy vehicle safety technologies listed in Centre for Road Safety (2017)

i) Crash Avoidance Technologies	*ii) Protective Technologies*
Electronic Stability Control (ESC) System	Suspension Seats with Integral Seat Belts
Trailer Roll Stability (TRS) System	Seatbelts for Buses
Autonomous Emergency Braking (AEB) System	Rear Underrun Protective Devices (RUPDs)
Autonomous Reverse Braking (ARB) System	Side Underrun Protective Devices (SUPDs)
Electronic Braking System (EBS)	Front Underrun Protective Devices (FUPDs)
Anti Jack-Knife Braking	Supplementary Restraint System (SRS) Airbag System
Electronic Brake Distribution (EBD) System	Rollover Side Curtain Airbag
Load-Proportioning Brake Valve (LPBV) System	Cabin Strength Standards
Adaptive Cruise Control (ACC) System	Seat Belt Wearing Monitors
Driver Fatigue Monitoring System	Automatic Brake Adjustment (ABA) Devices
Wheel Nut Indicators and Locks	Electricity Line Proximity Warning Devices
Wheel Nut	*iii) General Safety Technologies*
Antilock Braking Systems (ABS)	In-Cabin Noise Quality
Disc Brakes	Ride Quality
Lane Departure Warning System (LDWS)	Ergonomic Cabin Design
Daytime Running Lamps (DRL)	Tipping-Trailer Stability Protection System
Blind Spot Elimination / Enhanced Daytime Vision System	Tipper Safety Systems
Enhanced Night Vision (ENV) System	Intelligent Speed Adaptation (ISA) Warning System
Adaptive Headlamps	Fire Suppression Systems
Cornering Lamps	Automatic Incident Notification and Routine Event Reporting Systems
Light Emitting Diode (LED) Lighting	Wheel Temperature Monitoring
Emergency Stop Light	Visibility
Enhanced Vehicle Visibility Markings	Fresnel Lens
Tyre Pressure Management Devices	Mirrors
Tyre puncture prevention and tyre inflation	Onboard Weighing System
Rail Crossing and Road Hazards Radio and GPS Warning Systems	
High Intensity Discharge (HID) Headlamps with Levelling System	
Automatic Traction Control (ATC) System	
Reversing Safety Systems	
Spray Suppression Devices	
Roll Away Emergency Parking Brake System	
Alcohol Ignition Interlocks	

Non-electronic technologies

1.19 The Committee was interested to learn about non-electronic in-vehicle technologies which were available to assist drivers and which might be cheaper and simpler to install and operate than electronic technologies. Many non-electronic safety technologies are prevalent on all vehicles including braking and lighting systems, and mirrors.

Mirrors and drivers' field of vision

1.20 During the site visit to Toll Group's workshop on Monday 12 March 2018, Committee members noted the use of non-electronic measures including convex mirrors in truck cabins to improve the drivers' range of vision.

1.21 Following his appearance before the Committee on 9 April 2018, Mr Royce Christie, Group General Manager, Government Relations, Toll Group, provided a written answer to a question on notice in which he agreed that finding simple low-cost safety solutions could be useful. In the case of convex mirrors, these could be easily installed if available as parts. However, delays in installation could occur when the company need to engineer equipment such as mirror arms and holders. A further issue was that each vehicle variant also needed to be assessed to ensure compliance with the required Australian Design Rules. Mr Christie suggested that consultations between government and vehicle manufacturers

could assist in reducing costs and increase the speed to market for modifications such as additional mirrors.[6]

1.22 At the public hearing, Mr Christie also described an effective non-electronic approach adopted in the United Kingdom. He explained that:

> …Instead of installing cameras or sensors to see whether someone was in the blind spot, they simply put a window in the bottom of the door, so that when drivers sitting in their cab looked over to the left they could see, when they were stationary at a set of lights or whatever, if there were pedestrians or cyclists immediately in their left-hand door blind spot.[7]

1.23 The availability of vehicles with good driver visibility was also raised by Ms Grace Cheng.[8]

Cabin design and driver distraction

1.24 Better cabin design to minimise driver distraction was also raised in evidence heard by the Committee. Professor Ann Williamson, Director, Transport and Road Safety (TARS) Research Centre, cited the example of a central console with a video screen which required the driver to take their eyes off the road in order to change the radio station.[9] Dr Rena Friswell, Research Fellow, TARS, observed:

> …a truck cab is an office in today's day and age. The driver is surrounded by his electronic communication devices, back to base and so on. It is not just the mobile phone; his workplace is kitted out with all these potentially distracting devices which may be delivering important information, for example, "Do not take that road; we have heard there was a crash on it", or, "We need you to go somewhere else to collect freight."[10]

1.25 Mr Bernard Carlon, Executive Director, Centre for Road Safety, Transport for NSW, responded to a question on cabin design and driver distraction at the Committee's public hearing:

> The Australian Design Rules include the layout of the dashboard and require an eye line capability to observe the road environment. That is a key factor in the design specifications for those functions in a car. They are integrated into the system. Whether they are driver assist or entertainment systems, a lot of work goes into ensuring that they meet those requirements.[11]

1.26 Mr Carlon agreed with the academic witnesses, however, that as technology changes it is necessary to be on guard to ensure in-vehicle technologies do not

[6] Answers to Questions on Notice, Toll Group, https://www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-details.aspx?pk=2467, accessed 15 May 2018

[7] Mr Royce Christie, Toll Group, transcript of evidence 9 April 2018, p35

[8] Submission 33, Ms Grace Cheng, p1

[9] Professor Ann Williamson, Transport and Road Safety (TARS) Research, transcript of evidence 9 April 2018, p21

[10] Dr Rena Friswell, Transport and Road Safety (TARS) Research, transcript of evidence 9 April 2018, p21

[11] Mr Bernard Carlon, Transport for NSW, transcript of evidence 9 April 2018, pp65-66

negatively impact driver distraction as they become more numerous and complex.[12]

Cabin access and comfort

1.27 The importance of upgrading the non-electronic safety features of heavy vehicles was also identified in a survey of heavy vehicle drivers undertaken by Dr Sharron O'Neill, Senior Lecturer, UNSW Canberra and Associate Professor Louise Thornthwaite, Department of Management, Macquarie University. Examples of non-electronic improvements cited by drivers included appropriate seat-mounted rather than cab-mounted seat belts, and innovations such as swing out staircases and more appropriate and consistent access steps.[13]

1.28 Dr O'Neill explained to the Committee that heavy vehicle drivers were greatly concerned with safe access and comfortable operation:

> Certainly things such as steps were issues that drivers were really concerned about: access and egress. One of the major causes of fatal and serious injury is falling off or out of a truck. The access points were a serious issue, as were hand holds and things like that—just the basics of getting in and out. We talked to drivers about why they do not wear seatbelts and part of that was because they were attached to the wall, not the seat, so when the seat bounced, it jarred against them and was causing damage and discomfort.[14]

1.29 The need for air conditioning was also raised as a fatigue management issue.[15]

Road surface and roadside barriers

1.30 Another category of non-electronic safety technology crucial to the road freight industry is the road surface itself. At the public hearing, Mr Paul Pulver, Policy Representative, Livestock, Bulk and Rural Carriers Association, cited the safety advantage of installing ripple strips and buffers between lanes on major highways.[16]

1.31 Transport for NSW advised in its submission that audio tactile (rumble) line marking and wide centre lines reduce crashes, such as running off the road, by up to 35 per cent. It noted that these measures can be implemented quickly and cost effectively on long stretches of the highest risk roads.[17]

1.32 Transport for NSW also noted the effectiveness of flexible barriers in separating oncoming traffic and protecting vehicles from roadside hazards. It advised that these barriers can reduce key crash types on country roads by up to 85 per cent and are especially important as a safety solution on key transport corridors.[18]

[12] Mr Bernard Carlon, Transport for NSW, transcript of evidence 9 April 2018, p66

[13] Submission 32, UNSW Canberra and Macquarie University, pp6-7

[14] Dr Sharron O'Neill, UNSW Canberra, transcript of evidence 9 April 2018, p47

[15] Submission 12, Mr Kevin Forbes, p1; Submission 14, Mr Scott Jose, p1

[16] Mr Paul Pulver, Livestock, Rural and Bulk Carriers Association, transcript of evidence 9 April 2018, p50

[17] Submission 42, Transport for NSW, p70

[18] Submission 42, Transport for NSW, p70

Improving road safety infrastructure, especially on high risk country roads, is a priority area for action under the NSW Road Safety Plan 2021.[19]

1.33 Mr Rod Hannifey proposed the addition of roadside reflectors as a simple, cheap and effective road safety measure for identifying informal truck bays.[20]

Contractual requirements

1.34 In its submission, the Cement Concrete and Aggregates Australia highlighted the safety benefits of specifying non-electronic measures in the contractual requirements for major infrastructure projects such as the Sydney Metro project. It advised that, in addition to telematics systems, the contractual requirements included heavy vehicle features such as side underrun guards to protect pedestrians, improved mirrors to eliminate blind spots, vehicle warning signage and enhanced visibility markings, observing:

> The introduction of these contractual safety requirements has had the effect of lifting the safety of heavy vehicles servicing the Sydney Metro project without the need for additional regulation.[21]

Vehicle design

1.35 A number of submissions referred to the safety advantage of the Front Underrun Protection System (FUPS) which prevents or reduces the likelihood of the occupants of a light vehicle becoming trapped underneath a truck. However, the Truck Industry Council (TIC) expressed concern at the slow take-up of this system following introduction of the relevant Australian Design Rule (ADR84/00) from 1 January 2012. TIC estimated that just over 20 per cent of the Australian truck fleet was fitted with FUPS in 2017, a saving of only 2 to 3 lives compared to the eleven lives per year which was projected in the Regulatory Impact Statement evaluation of FUPS. Based on current take-up rates and fleet age, TIC doubted that a 95 per cent take-up rate could be achieved before 2039. The submission expressed disappointment, observing that this was a less than optimal safety outcome.[22]

1.36 In addition to underrun barriers, Transurban advocated the benefit of reducing injury severity through vehicle design measures such as flat-nosed cabins and low height cabins.[23] The need for further attention to vehicle design was also raised by the Amy Gillett Foundation following a review of coronial recommendations relating to fatality crashes involving a cyclist and a heavy vehicle. This study, undertaken in partnership with Monash University academics and Toll Group, found that the most frequently made vehicle-related recommendation focussed on visibility and maximising the driver's capacity to see the road user outside the cabin. Specific findings by coroners in relation to safer vehicles included the need to trial and install a rear vision camera to maximise driver accessibility and

[19] Submission 42, Transport for NSW, p13
[20] Submission 29, Mr Rod Hannifey, p2
[21] Submission 22, Cement, Concrete and Aggregates Australia, p2
[22] Submission 32,Truck Industry Council, p7
[23] Submission 25, Transurban, p13

visibility, and the need to prohibit conventionally shaped heavy vehicles unless fitted with appropriate warning technology.[24]

1.37 Transport for NSW agreed that design improvements to heavy vehicles and technological support for heavy vehicle drivers can contribute to reducing the incidence or severity of major crash types arising from factors such as lane departure, and frontal and pedestrian collisions. Its submission cited the following vehicle features as being effective safety measures to address the main crash risk scenarios: front underrun protection, improvements to driver's field view, and pedestrian friendly frontal designs in combination with lane departure and collision avoidance systems.[25]

Committee comment

1.38 While much of the evidence the Committee received focused on complex electronic technology, many stakeholders were keen to point us towards non-electronic technologies. We feel it is important not to lose sight of the fact that there are road safety gains available, often to be made quickly and at comparatively low cost, from ensuring that the benefits of non-electronic technologies are understood and applied.

Finding 2

The Committee finds that the benefits of non-electronic technologies should be understood and not overlooked when considering how to improve heavy vehicle safety.

Fatigue management technologies

1.39 Fatigue management is a vital issue for the transportation industry. Driver fatigue is associated with an increased risk of crashing and road trauma. According to Transport for NSW, in 2016-17 fatigue was a factor in 20 per cent of all heavy vehicle fatal crashes. Heavy vehicle drivers are at risk of fatigue-related crashes due to the nature of their work hours, work conditions, lifestyle and general health. The effect of fatigue is well documented and has been compared to alcohol related impairment. Fatigue results in performance impairment, inattention and reduced reaction times.[26]

1.40 The Committee received evidence about a range of fatigue management technologies, falling into two basic types. The first of these is the electronic work diary which is a telematics-based system providing evidence that a driver's work hours are compliant with the fatigue management requirements under heavy vehicle national law (HVNL).[27]

1.41 The second type involves a range of in-vehicle driver fatigue detection or prediction systems. These systems monitor the driver's fatigue status by various methods and may provide audible and/or visual warnings to alert the driver, as

[24] Submission 9, Amy Gillett Foundation, pp7-8
[25] Submission 42, Transport for NSW, p52
[26] Submission 42, Transport for NSW, p73
[27] Submission 42, Transport for NSW, p62

well as the possibility for a fleet supervisor to undertake real-time monitoring of the driver's performance and condition.[28]

Electronic work diaries

1.42 Electronic work diaries (EWDs) are electronic devices or systems capable of monitoring and recording drivers' work and rest information as a voluntary alternative to the paper-based National Driver Work Diary.[29]

1.43 The National Driver Work Diary provides evidence that drivers' work and rest hours are compliant with the HVNL and that their fatigue is being managed. The law provides that in set periods, drivers are not allowed to drive or work more than the maximum work hours or rest less than the minimum rest hours. All drivers of fatigue-regulated vehicles who drive 100 kilometres or more from their home base must carry and complete a work diary or, in specified cases, a work diary exemption notice or permit.[30]

1.44 EWDs provide practical operational benefits for operators, drivers and authorised officers, including:

- improved data accuracy and transparency
- real time data, enabling operators to respond immediately to actual breaches, as well as monitoring performance over time
- in-vehicle driver information which enables drivers to plan their work and rest, and to take action when alerted to an imminent or actual breach.[31]

1.45 The National Heavy Vehicle Regulator (NHVR) is developing a policy framework and standards to encourage the voluntary adoption of EWDs.[32] On 17 April 2018 the NHVR released the final consultation report on its draft EWD Policy Framework and Standards.[33] The report concluded that EWDs will provide a sustainable and effective voluntary alternative to written work diaries to record work and rest hours for heavy vehicle drivers. EWDs will need to be approved by the NHVR with the first approval expected in 2018.[34]

1.46 In its submission to the inquiry, Transport for NSW confirmed that it supports the development of the EWD and moving to a safety assurance model. However, it stipulated that:

> …there is a need to ensure the capability for on-road detection, integrity of the data and minimum evidentiary standards. It is crucial that both the NSW Police Force and RMS roadside enforcement officers are able to interrogate the system effectively and efficiently at the time a driver is pulled over. For instance, if the breach is

[28] Submission 42, Transport for NSW, p59
[29] Submission 42, Transport for NSW, p62
[30] Submission 42, Transport for NSW, p75
[31] Submission 42, Transport for NSW, p62
[32] Submission 3, Natroad, p3
[33] NHVR website news, https://www.nhvr.gov.au/news/2018/04/17/ewds-get-the-green-light, accessed 15 May 2018
[34] Submission 42, Transport for NSW, p62

significant and there is a high fatigue risk, the officer needs to be able to direct the driver not to work for 24 hours.[35]

1.47 Evidence presented to the inquiry by other stakeholders was polarised regarding the implementation of EWDs. On the one hand, the Australian Logistics Council[36] and Toll Group[37] supported a mandatory approach to the installation of data recording devices (telemetry) in trucks, including electronic data reporting. On the other hand, some industry organisations and companies expressed reluctance to endorse EWDs until certain issues and practices in the industrial and regulatory environment have been addressed.

1.48 Stakeholders with reservations included the National Road Transport Association (Natroad), the Australian Trucking Association (ATA), Ron Finemore Transport, Welsh Freight Services Pty Ltd and the Livestock, Bulk and Rural Carriers Association of NSW. The most prominent concern expressed was that the current regulatory regime for fatigue management is over-prescriptive.[38]

1.49 Natroad estimated that only about seven per cent of heavy vehicles have some type of electronic monitoring device currently installed and in use.[39] It cited several barriers to greater use of devices including costs, perception of 'big-brother' surveillance, connectivity problems in regional and remote areas, and security of information.[40] Cost, in particular, was identified as a key barrier to take up of EWDs for small to medium-sized businesses operating on low margins with limited capacity to implement technology.[41]

1.50 Stakeholders acknowledged that their concerns were being addressed by the National Heavy Vehicle Regulator in its EWD Policy Framework and Standards including interoperability of EWDs across different technology providers, and the need to use a single device for multiple purposes. Natroad was one stakeholder which set out the standards it expected for EWDs to provide practical operational benefits for drivers, namely:

- Simpler and faster recording of work and rest information
- Data accuracy
- Compliance warnings and other assistance to avoid administrative non-compliance with fatigue rules.[42]

[35] Submission 42, Transport for NSW, p62

[36] Submission 24, Australian Logistics Council, p7

[37] Submission 39, Toll Group, p6

[38] Submission 3, Natroad, p4; Submission 23, Australian Trucking Association, p3; Submission 21, Ron Finemore Transport, p3; Submission 30, Welsh Freight Services Pty Ltd, p2; Submission 28, Livestock, Bulk and Rural Carriers Association, p6

[39] Submission 3, Natroad, p3

[40] Submission 3, Natroad, p4

[41] Submission 3, Natroad, p1; Submission 30, Welsh Freight Services Pty Ltd, p2

[42] Submission 3, Natroad, p4

1.51 At the public hearing, the Committee explored the role and purpose of EWDs with witnesses. Mr Bill McKinley, Chief of Staff, Australian Trucking Association, acknowledged the value of EWD technology while stating reservations:

> Electronic work diaries [EWDs] have enormous potential to reduce the workload on truck drivers and employers—both in filling in manual work diaries with a complex system of work and rest hours, and then in checking them to satisfy the employer's safety obligations, particularly the enhanced obligations we hope to have from mid-2018. We strongly support the idea of voluntary electronic work diaries. The problem is with the regulations and compliance policy attached to them…[43]

1.52 Regarding compliance, Mr McKinley explained:

> …The national regulator has released a draft compliance policy for EWDs. Under that policy it would provide that breaches of 15 minutes or less would not be shown to enforcement officers at the roadside. The idea is that the electronic work diary would mirror the way a written work diary currently works. The problem from our point of view is that that is a policy. It is a good policy but it is not the law.
>
> ….
>
> Trucking businesses on the whole…are not going to spend large amounts of money on technology unless they know that it will not put their drivers or themselves at increased legal risk and unless there are productivity benefits as well as safety benefits to match the cost. In the case of electronic work diaries, we would say that there needs to be attention given to the underlying regulation.[44]

1.53 In its submission to the inquiry, the Livestock, Bulk and Rural Carriers Association (LBRCA) expressed the view:

> the current voluntary electronic work diary (EWD) as proposed is too prescriptive and concentrates on enforcement more so than safety. With technologies emerging daily it is imperative that the outcome can be achieved safely, regardless of the technology of the system used...the true solution may be the use of available technology such as fatigue-eye-detection software that removes the need for a work diary altogether.[45]

1.54 At the public hearing, Mr Paul Pulver, Policy Representative, LBRCA expanded on the Association's reservations. He said that not enough was known about EWDs or how they would operate and be regulated. Mr Pulver expressed concern that unclear regulation could result in requirements for multiple telematics devices to be installed in trucks, while if left to operators they could source and fit single devices to gather all the required information.[46]

1.55 In contrast, Mr Royce Christie, Group General Manager, Government Relations, Toll Group was confident that the positive benefits outweighed the negative

[43] Mr Bill McKinley, Australian Trucking Association, transcript of evidence 9 April 2018, p3

[44] Mr Bill McKinley, Australian Trucking Association, transcript of evidence 9 April 2018, pp3-4

[45] Submission 28, Livestock, Bulk and Rural Carriers Association, p6

[46] Mr Paul Pulver, Livestock, Bulk and Rural Carriers Association, transcript of evidence 9 April 2018, p51

impacts. He told the public hearing that Toll Group supported mandating of EWDs to improve both enforcement and the reputation of the industry.[47]

1.56 Mr Michael Kilgariff, Chief Executive Officer, Australian Logistics Council, told the Committee that overseas jurisdictions had mandated EWDs, and the evidence showed that mandating will reap a safety dividend.[48] He noted in particular that the use of an electronic logging device had been mandated in the United States in December 2017. He also stressed the value of EWDs over paper diaries in reducing fraud and raising confidence.[49]

1.57 The NSW Government witnesses addressed the concerns of stakeholders regarding EWDs when they appeared before the Committee on 9 April 2018. Regarding concerns about inflexibility, Ms Melinda Bailey, Executive Director, Compliance and Regulatory Services, Roads and Maritime Services, advised:

> The EWD compliance policy states that breaches of 15 minutes or less will not result in a formal breach per se unless the authorised officer considers it a significant safety breach or that there is some pattern of behaviour. The view that the EWD is going to be more onerous than the paper-based work diary is not supported by the evidence that I have. The policy says that the EWD shall maintain a 28-day period of work. That is no different to its current paper-based form.[50]

1.58 Regarding the capacity of EWDs to offer improvements over paper-based record keeping, Ms Bailey observed that while they largely replicate the paper work diary currently, she expected future improvements:

> …only a few weeks ago we found evidence of a driver having four different work diaries in a vehicle, three of which had previously been reported as lost. I think that will be overcome by the electronic work diary. However, there must be unique driver identification … to prove that the driver throughout the journey was the driver of the vehicle … that will take some time to evolve. However, we are heading very much in the right direction in this regard.[51]

1.59 Mr Bernard Carlon, Executive Director, Centre for Road Safety, Transport for NSW, was similarly confident that industry expectations of EWD technology could be met:

> Many proposals have come forward from industry stating that it believes the technologies being used to monitor drivers' fatigue are much more accurate than the current regime we have around hours of driving. Again, we need to do the research and verify whether more flexibility in the system using those sorts of technologies might deliver better results. That is one of the proposals … we are investigating as part of the development of the road strategy for heavy vehicles.[52]

[47] Mr Royce Christie, Toll Group, transcript of evidence 9 April 2018, p35
[48] Mr Michael Kilgariff, Australian Logistics Council, transcript of evidence 9 April 2018, p28
[49] Mr Michael Kilgariff, Australian Logistics Council, transcript of evidence 9 April 2018, p30
[50] Ms Melinda Bailey, Roads and Maritime Services, transcript of evidence 9 April 2018, p66
[51] Ms Melinda Bailey, Roads and Maritime Services, transcript of evidence 9 April 2018, p65
[52] Mr Bernard Carlon, Transport for NSW, transcript of evidence 9 April 2018, p65

1.60 Asked whether he was concerned about the differences in opinion expressed by stakeholders regarding the use of EWDS for fatigue management, Mr Carlon acknowledged these differences and said:

> …our role … is to provide the evidence and facilitate outcomes that will encourage and motivate people to adopt the safest technologies, behaviours and systems within their operations to reduce the risks. Clearly people are taking risks—whatever the motivation might be. There are also operators and safety champions within the industry that will be able to assist us in leading that change.
>
> We are operating in a national heavy vehicle regulatory environment as well and so it is very important that whatever we do is done in that context of engaging people at a national level.[53]

Committee comment

1.61 The Committee is concerned that a relatively discrete updating of current practice like electronic work diaries should uncover such a polarisation of views. Stakeholders on both sides of the discussion about the value of EWDs and whether they should be mandatory gave us their views clearly and objectively. Similarly, the assurances we received from the NSW Government witnesses were clear and to the point.

1.62 We are concerned that if there is such divergence of opinion around EWDs, and uncertain progress towards achieving consensus on their use, achieving progress on much more complex and expensive technologies will be even harder.

1.63 The concerns about EWDs expressed by stakeholders are real. The gap between the advocates of mandatory and voluntary use of EWDs is wide.

1.64 Findings and recommendations elsewhere in this report are designed to push stakeholders and regulators towards resolving differences, albeit under a national framework which we trust does not constitute an additional layer of complexity. We believe it is important to bring the industry together on the question of EWDs and other matters of debate, so that necessary reforms can be agreed and implemented cooperatively, and road safety improvements secured.

Finding 3

The Committee finds that many of the concerns expressed by stakeholders regarding the purpose and use of electronic work diaries need to be overcome as a priority before the roll out proceeds.

Technology which monitors driver behaviour

Fatigue detection and management

1.65 The second type of fatigue management technology is concerned with monitoring driver behaviour. It involves a range of in-vehicle driver fatigue

[53] Mr Bernard Carlon, Transport for NSW, transcript of evidence 9 April 2018, p63

detection or prediction systems and may provide warnings to alert the driver or real-time back-to-base monitoring of the driver's performance and condition.[54]

1.66 The National Heavy Vehicle Regulator (NHVR) described the indicators of fatigue impairment which technology aims to detect, including pupilometry, drowsiness, inattention, inconsistent speed control and uncontrolled lane departures. While reporting that fatigue monitoring using these indicators is becoming more reliable, the NHVR advised that industry take-up of fatigue monitoring technologies is inconsistent, particularly due to cost. Nevertheless, the NHVR advised that driver behaviour monitoring devices, in association with broader risk management, provide the greatest opportunity to mitigate fatigue and improve road safety.[55]

1.67 Several suppliers of fatigue monitoring technology made submissions to the inquiry. Seeing Machine Limited described three technology types which monitor fatigue and driver behaviour in different ways. One type uses an exterior forward-facing sensor to detect safety-critical events. This involves the use of Advanced Driver Assistance Systems (ADAS) related to headway and departure warnings. A second type uses driver inputs to identify potential risks such as hard braking and steering events. Seeing Machine Limited advised that these types are not as exact as the third type, driver monitoring systems (DMS) which enable the driver state (distraction and drowsiness) to be identified through analysis of head and eye metrics.[56] DMS is an in-cabin camera-based system which monitors the driver's pose, gaze and eyelid behaviour for signs of drowsiness and sends an auditory or visual alarm to the driver or notifies a remote monitoring centre, or both.[57]

1.68 Seeing Machines Limited advised that DMS technology will continue to develop with the roll out of connected and autonomous vehicles. It identified DMS as essential to the provision of safe co-piloting functionality in higher autonomous vehicles to ensure that the driver is sufficiently engaged to re-assume control as and when required.[58]

1.69 The waste management company JJ Richards and Sons Pty Ltd advised the Committee that it is actively investigating the installation of DMS technology in its fleet.[59]

1.70 Linfox Logistics advised that it has assessed technology which tracks driver head and eye gaze in some of its vehicles.[60]

1.71 The Livestock, Bulk and Rural Carriers Association[61] and Ron Finemore Transport both provided strong support for fatigue-eye-detection software to manage

[54] Submission 42, Transport for NSW, p59
[55] Submission 40, National Heavy Vehicle Regulator, p4
[56] Submission 26, Seeing Machines Limited, p3
[57] Submission 26, Seeing Machines Limited, p5
[58] Submission 26 Seeing Machines Limited p6
[59] Submission 5 JJ Richards and Sons Pty Ltd, p3
[60] Submission 37, Linfox Logistics, p2
[61] Submission 28, Livestock, Bulk and Rural Carriers Association, p6

fatigue. Ron Finemore Transport advised that the company had invested over $1M in the last two years in fatigue and distraction detection hardware developed by Monash University and Volvo trucks. It reported improved road safety outcomes as a result, but also that the technology required further development and regulatory clarification. In this regard, Ron Finemore Transport advised it had sought a grant from the National Heavy Vehicle Regulator to develop a training manual for the fatigue and distraction management hardware it had installed.[62]

Fatigue monitoring research

1.72 The National Transport Commission (NTC) is currently conducting an evaluation of the impacts of the HVNL on heavy vehicle driver fatigue, in partnership with the Alertness Co-operative research centre. The NTC explained that with the development of increasingly accurate and sophisticated alertness monitoring devices, it is now possible to objectively measure a driver's alertness across a work schedule. They are able to monitor driving impairment indicators, and measure the quality and quantity of a driver's sleep during minimum rest periods.[63]

1.73 By collecting precise evidence on issues surrounding fatigue for heavy vehicle drivers, the NTC will be able to make better informed decisions about changes to fatigue-management policies and law. The NTC told the Committee:

> The study has commenced and is measuring driver drowsiness and sleeping patterns, both on the road during real-world work shifts and in laboratory settings. The research is using state-of-the-art alertness measurement technologies and a unique combination of research and industry-based expertise…The results of the research will be used to identify and address priority fatigue issues and will help us to advise transport ministers about whether the current regulations are fit-for-purpose.[64]

1.74 Other stakeholders recommended that fatigue management regulations were reviewed and noted the importance of this project and the data it will collect. The Australian Trucking Association said:

> …this research should also inform any future reforms of the HVNL fatigue laws and further development or adoption of technologies.[65]

1.75 Additional research into driver monitoring technology is being conducted by industry with the support of the Australian government. Seeing Machines Limited is leading the Advanced Safe Truck Concept, an Australian government supported project, in partnership with Monash University Accident Research Centre, Ron Finemore Transport and Volvo Trucks Australia. This research aims to refine sensing technology and the human machine interface.[66]

[62] Submission 21, Ron Finemore Transport, pp3-4
[63] Submission 6, National Transport Commission, p2
[64] Submission 6, National Transport Commission, p2
[65] Submission 23, Australian Trucking Association, p7
[66] Submission 26, Seeing Machines Limited, pp4-5

Accuracy and reliability

1.76 Transport for NSW advised the Committee that the Centre for Road Safety has evaluated many of the fatigue detection technologies currently available. The Centre reported a failure of many technologies to detect fatigue and concluded:

> …there is currently no single technology which can accurately and reliably detect or predict driver fatigue.[67]

Committee comment

1.77 The Committee notes the variety of fatigue monitoring technologies available, and the enthusiasm of many in the heavy vehicle industry to trial technology, and partner with technology developers and academics in research. While we support continuing research into fatigue monitoring technology with government and industry support, we note with concern the conclusion of the NSW Centre for Road Safety that no single technology currently available can accurately and reliably detect or predict driver fatigue.

Finding 4

The Committee finds that further research is required to determine the capacity of fatigue management technologies to accurately and reliably detect or predict driver fatigue.

Other in-vehicle technologies

Anti-lock braking and autonomous emergency braking

1.78 Anti-lock braking systems (ABS) were the most recent safety system mandated under Australian Design Rules (ADR35/05) from 1 November 2016. The Regulatory Impact Statement for this change estimated that 57 lives could be saved per year by fitting ABS. ABS has been offered by truck manufacturers as standard on most models since 2008. The Truck Industry Council estimated that, due to early voluntary adoption of ABS by the industry, 95 per cent of the Australian truck fleet will have ABS fitted before 2035, based on current truck take-up rates and/or fleet age.[68]

1.79 Autonomous emergency braking systems (AEBS) detect potential forward collisions and automatically apply brakes to prevent or significantly reduce rear end collisions.[69] The technology uses smart cameras, radar or LIDAR (light detection and ranging) detectors, which cannot be retrofitted. AEBS is already mandatory for particular classes of vehicles in Europe. Transport for NSW advised that up to one quarter of all heavy vehicle crashes could be prevented by mandating AEBS. It also cited estimates that up to 17 per cent of heavy vehicle serious injury crashes and up to three per cent of property damage-only crashes could be prevented through AEBS fitment.[70] The Truck Industry Council

[67] Submission 42, Transport for NSW, p60
[68] Submission 35, Truck Industry Council, p6
[69] Submission 35, Truck Industry Council, p7
[70] Submission 42, Transport for NSW, p59

expressed concern that there is currently no implementation plan or timeline for assessment and approval of AEBS in Australia.[71]

Electronic stability control and roll stability control

1.80 Electronic stability control (ESC) was mandated for new cars in 2014. It corrects vehicle deviations by applying brakes to selected wheels, using sensors to monitor driving inputs and vehicle performance, and cannot be retrofitted cost effectively. Transport for NSW estimated that four per cent of all heavy vehicle crashes could be prevented through the mandating of ESC, and a reduction in heavy vehicle serious injury crashes of seven per cent. It further noted that the incidence of crash reductions was up to three times higher for road trains and articulated vehicles than for rigid trucks.[72]

1.81 Natroad advised that ESC is already fitted to around 25 per cent and 40 per cent of new trucks and trailers respectively in the general fleet.[73]

1.82 The Australian Government is currently considering the case for mandating ESC for heavy trucks and buses and roll stability control (RSC) for heavy vehicle trailers through the Australian Design Rules. The consultation period closed in February 2018.[74]

1.83 The Australian Trucking Association (ATA) urged the NSW Government to push for ESC to be mandated for all new trucks and trailers with only a narrow range of exemptions.[75] Mr Bill McKinley, Chief of Staff, ATA told the Committee that the Federal Government's regulatory impact statement proposed that stability control be required for new prime movers weighing more than 12 tonnes and new trailers weighing more than 10 tonnes, but would not be fitted to rigid trucks. In his view, not requiring ESC on all new trucks and trailers reduced the road safety benefits which could accrue.[76]

1.84 Toll Group expressed concern about the delay in mandating ESC:

> Electronic stability control is a technology that has been around for more than a decade and has been mandatory on new cars in Australia for some years. It is not yet mandated for new trucks. While Australia waits for those changes to occur other new technology is already becoming standard in many international markets.[77]

1.85 Toll Group further noted the reluctance of some vehicle operators to invest in new safety features:

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[71] Submission 35, Truck Industry Council, p8

[72] Submission 42, Transport for NSW, p54

[73] Submission 3, Natroad, pp1-2

[74] Submission 23, Australian Trucking Association, p7, ATA Submission to the Australian Government Consultation on Electronic Stability Control http://www.truck.net.au/sites/default/files/submissions/20180202ATAsubmissionStabilityControlRISvFinal.pdf, accessed 15 May 2018

[75] Submission 23, Australian Trucking Association, p2

[76] Mr Bill McKinley, Australian Trucking Association, transcript of evidence 9 April 2018, p2

[77] Submission 39, Toll Group, p5

> Despite a new prime mover costing around $250,000 there are continual reports from truck manufacturers that many new purchasers of trucks continue to refuse to pay a few thousand dollars extra for the optional safety package of ESC and other equipment.[78]

Lane departure warning

1.86 Lane departure warning (LDW) is a crash avoidance technology which uses smart cameras to detect unintended lane departures. Transport for NSW advised that this technology can be retrofitted. It estimated that mandating LDW would prevent up to six per cent of all heavy vehicle fatal crashes and up to four per cent of heavy vehicle serious injury crashes.[79] The Truck Industry Council expressed concern that there is no implementation plan or timeline at national level for mandating LDW under the Australian Design Rules.[80] While supporting the safety value of LDW, Natroad expressed doubts as to the ability of the technology to function reliably on poorly maintained or unsealed roads with no highly visible lane markings.[81]

1.87 The Amy Gillett Foundation raised concerns about an unintended consequence of the technology where it automatically centred the vehicle in the lane in response to a driver moving out of the lane to avoid a cyclist. The Foundation proposed LDW be coupled with cameras to ensure vehicles maintain safe separations. It has established a partnership with Toll Group aimed at raising industry awareness of roads safety risks for vulnerable road users. The Foundation urged that all new heavy vehicle safety technologies be evaluated from the point of view of the vulnerable road user with regard to unintended consequences.[82]

Object detection

1.88 Object detection systems use sophisticated radar and LIDAR technologies to warn the driver of potential frontal crashes.[83] Systems are available with a single forward facing vision sensor suitable for regular sized vehicles, or with multi-sensors designed for large commercial vehicles with hazardous blind spots. These systems continuously analyse the driving environment to identify hazards including other vehicles, pedestrians, cyclists and motorcyclists. When necessary, the system issues visual and audio alerts in real time to assist the driver to avoid or mitigate a collision.[84]

1.89 Transurban and the Amy Gillett Foundation both noted the significance of technologies such as 360 degree vision, blind spot detection and turning warnings to alert drivers to their surroundings and other road users, particularly vulnerable road users.[85]

[78] Submission 39, Toll Group, p5
[79] Submission 42, Transport for NSW, p59
[80] Submission 35, Truck Industry Council, p8
[81] Submission 3, Natroad, p2
[82] Submission 9, Amy Gillett Foundation, p7
[83] Submission 42, Transport for NSW, p57
[84] Submission 8, Mobileye, p8
[85] Submission 25, Transurban, p13; Submission 9, Amy Gillett Foundation, p4

Headway monitoring and adaptive cruise control

1.90 Headway monitoring systems provide the driver with sufficient time to react if the vehicle ahead unexpectedly stops or slows down. Adaptive cruise control is an advanced system which allows the vehicle to maintain a safe distance from the vehicle ahead.[86]

Speed limiting

1.91 Transport for NSW listed speed limiting as a response to heavy vehicle safety.[87] JJ Richards and Sons Pty Ltd advised the Committee that it had limited its fleet to 90 kilometres per hour. It advised that slower speeds meant shorter stopping distances and more time to react to hazards.[88]

Potential to achieve safety results

1.92 In relation to the warning and corrective technologies described above, Transport for NSW observed:

> …currently available automated technologies, such as adaptive cruise control, lane-departure warning and automated emergency braking already improve the safety performance of heavy vehicles. Adoption of these could be an early potential safety 'win'.[89]

1.93 Similarly, Austroads advised the Committee to focus in the short term on current market automated technologies such as lane keep assist, adaptive cruise control, automated emergency braking, and speed assistance systems. It noted that technologies with potential should continue to be explored, but this required a longer term approach to achieve safety results.[90]

Committee comment

1.94 Unlike fatigue monitoring technologies, the other in-vehicle technologies described above are tested, reliable, and available on the market. We note the conclusion of Transport for NSW that currently available automated technologies such as adaptive cruise control, lane departure warning, and automated emergency braking are proven to improve heavy vehicle safety. We agree that the adoption of these technologies is providing a road safety dividend, and that there adoption across the industry can only increase this dividend.

Finding 5

The Committee finds that current market vehicle automation systems such as adaptive cruise control, lane departure warning, and automated emergency braking should be the focus of implementation policy, regulation and other strategies to encourage early adoption by the heavy vehicle industry.

[86] Submission 42, Transport for NSW, p57

[87] Submission 42, Transport for NSW, p48

[88] Submission 5, JJ Richards and Sons Pty Ltd, p3

[89] Submission 42, Transport for NSW, p64

[90] Submission 20, Austroads, 3

Telematics

1.95 The term 'telematics' refers to integrated systems of information, communications and sensors to exchange data and information between vehicles and other locations. Telematics offer services for tolling, diagnostics, and commercial fleet tracking, including electronic work diaries, intelligent speed compliance and the Intelligent Access Program (IAP).[91]

1.96 Telematics includes recording and monitoring applications which record information for future use, or communicate in real time. Communication can be vehicle to vehicle, vehicle to infrastructure, or vehicle to base. Telematics are being widely used to improve transport safety, productivity and efficiency.[92]

1.97 The use of telematics has enabled the ongoing development of connected and automated vehicles and a range of warning applications, many of which are already available in heavy vehicles to provide information about vehicle status and road conditions. Newer developments include the use of mobile and broadband services to inform drivers about the availability of rest areas, speed zone changes and road hazards, and emergency situations.[93]

1.98 Road Freight NSW and Teletrac Navman endorsed the positive contribution of in-vehicle telematics in modernising commercial operations:

> Standard application of in-vehicle telematics will be the cornerstone to the development of intelligent infrastructure and transport systems that will provide increased productivity across all supply chains.[94]

Management of telematics

1.99 Telematics are managed under the National Telematics Framework by Transport Certification Australia (TCA). The Framework is a digital business platform with infrastructure and rules which support an open technology market of suppliers and providers of systems and services.[95]

1.100 TCA outlined a range of telematics applications which can be delivered under the National Telematics Framework. Included under the Framework are applications for the Intelligent Access Program (IAP); Intelligent Speed Compliance (ISC); Intelligent Speed Management (ISM); On-Board Mass (OBM); Route Guidance; In-vehicle connectivity; Traveller Information Exchange and Real Time Alerts. These applications allow the collection and communication of data which can be used by regulators for monitoring compliance with legal and other requirements, and by industry for commercial purposes such as routing, payroll, fleet management, load efficiency management, logistics and security management.[96]

[91] Submission 20, Austroads, p2
[92] Submission 36, Transport Certification Australia, p2
[93] Submission 20, Austroads, p2
[94] Submission 38, Road Freight NSW and Teletrac Navman, p4
[95] Submission 36, Transport Certification Australia, p2
[96] Submission 36, Transport Certification Australia, p6

1.101 Each application is underpinned by common data elements consistent with the telematics dictionary; communications protocols, security, and legal agreements between TCA, certified service providers and transport operators; and hardware requirements for in-vehicle devices and systems.[97]

1.102 The Framework sets the standards which telematics systems must meet, based on the purpose of each system. For example, where the system is used to gather data for enforcement purposes, such as issuing an infringement notice, the system must meet a high level of assurance. Where the system is used for monitoring purposes, however, such as chain of responsibility monitoring and audit-based compliance, the Framework requires a lesser level of assurance. For commercial-only purposes, the Framework does not set a minimum standard.[98]

Black box technology

1.103 The simplest form of telematics is black box technology. As with a flight recorder in an aeroplane, black boxes enable the recording of data about the functioning of the vehicle which can be examined after the event to determine causation and, in the case of automated vehicles, to clarify whether the driver was in control at a particular time.[99]

1.104 Transport and Road Safety (TARS) Research proposed mandating the use of black box and collision recording technology to enable greater understanding of crash circumstances and help develop useful crash prevention strategies, whether vehicles were autonomous or not. TARS wrote that black box technology provided an opportunity to improve road safety for heavy vehicles considering that:

> The application of technologies to increase the scope, availability and use of 'big data' in road enforcement, and in evaluating policy and regulation has not attracted the same attention as vehicle automation but could provide genuine safety benefits by identifying problems in transport management at the company, industry or regulatory level that lead to on-road safety problems.[100]

1.105 Many of the larger companies have designed and implemented their own in-truck black box-style systems to maintain accurate records of compliance and to support their commercial operations. JJ Richards and Sons Pty Ltd cited its 'j-Track' system which it uses to monitor and optimise collection of vehicle performance data, and to record important service information for each daily run. The company explained that while such systems are available from external suppliers, it decided to invest in developing its own system so that it could easily be customised to meet its changing information needs as well as those of its customers.[101]

[97] Submission 36, Transport Certification Australia, p6

[98] Submission 24, Australian Logistics Council, p10

[99] Staysafe Committee, Report 2/56, Driverless Vehicles and Road Safety in NSW, p49

[100] Submission 34, Transport and Road Safety (TARS) Research, p49

[101] Submission 5, JJ Richards and Sons Pty Ltd, p4

Back-to-base technology

1.106 As described above, telematics systems are in-vehicle devices containing sensors and inputs which capture, store and electronically analyse information. This data can also be used for remote monitoring. The telematics capacity to enable real time exchanges of information between the driver and vehicle with a remote supervisor provide opportunities to improve road safety and improve regulatory compliance. As with black box technology, data exchanged in real time can also be recorded for later use in training drivers and improving systems.[102]

1.107 Examples of the real time feedback operations already available to heavy vehicle drivers and operators include the real time monitoring and alerts generated by driver fatigue detection systems, and the capture and transmission of real time data via electronic work diaries which enable transport operators to respond immediately to actual breaches as well as monitoring performance over time.[103]

1.108 Mr Royce Christie, Group General Manager, Government Relations, Toll Group related an example of data gathered by telematics being used to improve road safety. Toll Group employs telematics reporting in combination with an in-cabin speed alert system. The system produces a back-to-base alert when a vehicle exceeds 100 kilometres per hour, which is possible in speed-limited vehicles descending hills. Mr Christie reported that before installation of the telematics, Toll Group was experiencing about 150 speeding events per month. In the three years from July 2012 to May 2015, however, there was a 75 per cent reduction in the number of speed alerts between 105 and 106 kilometres per hour. Additionally, there was a reduction of 60 per cent in the number of speed alerts for 107 and 108 kilometres per hour, and no speed alerts for events greater than 110 kilometres per hour. Mr Christie said:

> Monitoring, analysing, counselling, training, keeping the good drivers on who are willing to listen to the advice they are getting from telematics boxes, and the advice that we are receiving, has led to a significant reduction in at least speeding alerts and we believe in a great improvement in safety overall.[104]

1.109 The Livestock, Bulk and Rural Carriers Association stressed in its submission the importance of having a 'foolproof telecommunications network' to support telematics technologies.[105] Appearing before the Committee, Mr Paul Pulver, Policy Representative, Livestock, Bulk and Rural Carriers Association, expressed concern about the use of telematics in areas where there could be no back-to-base communication:

> On major highways most of the information can come back directly. With Seeing Machines…within 30 seconds that message has gone to a call centre in America and someone has analysed it. Within two minutes it is back to your office. If you are in an area that has no communication, those things cannot happen. …Communication is a major issue to us as rural carriers.[106]

[102] Submission 42, Transport for NSW, pp60-61

[103] Submission 42, Transport for NSW, p62

[104] Mr Royce Christie, Toll Group, transcript of evidence 9 April 2018, p36

[105] Submission 28, Livestock, Bulk and Rural Carriers Association, p6

[106] Mr Paul Pulver, Livestock, Bulk and Rural Carriers Association, transcript of evidence 9 April 2018, p52

The Intelligent Access Program and infrastructure management

1.110 The Intelligent Access Program (IAP) is a certified telematics application which ensures that the 'right truck is on the right road at the right time'. IAP is oversighted by Transport Certification Australia (TCA). Heavy vehicle operators can obtain the IAP from an open market of certified service providers.[107]

1.111 The IAP is applied by road agencies and regulators as a condition of access for over-dimension or over-mass vehicles or loads.[108] It provides a means for road managers to use telematics to better manage road networks and infrastructure to its sustainable limits and thus to improve the efficiency of road freight transport based on the transmission of data identifying the mass, distance and location of the vehicle. In New South Wales, data collected from the IAP has enabled Roads and Maritime Services (RMS) bridge engineers to better manage the prioritisation of infrastructure repairs, and to re-assess the ratings given to bridges, resulting in greater access being given to some bridges for heavy vehicles.[109]

1.112 TCA currently satisfies the regulatory requirements of ensuring that data provided through the IAP scheme and other systems, is of an evidentiary standard. Transport for NSW pointed out in its submission, that this is crucial to ensuring the integrity of compliance and enforcement activity. Currently, RMS uses data collected via the IAP scheme to examine patterns of behaviour and rates of recidivism of heavy vehicle operators.[110]

1.113 Austroads observed that Australia is already highly advanced in the deployment of telematics for other regulatory applications through the IAP and similar applications.[111] In Queensland and Western Australia, for example, the telematics application known as Intelligent Speed Compliance is used to monitor and enforce the maximum permissible speed of heavy vehicles.[112]

1.114 The Committee also received evidence concerning challenges for and limitations of the IAP which need to be addressed to realise all the projected benefits of the program. In its submission, TCA observed:

> The use of the IAP by governments to manage productivity and safety has not been adopted as widely as originally anticipated.[113]

1.115 Similarly, Transport for NSW recognised the limitations of the IAP for regulatory purposes given its application to certain vehicles only:

> It is apparent that operators are currently investing in these systems for commercial reasons, and that the challenge is to identify what the impediments are to their broader adoption for regulatory purposes.[114]

[107] Submission 36, Transport Certification Australia, p7
[108] Submission 36, Transport Certification Australia, p7
[109] Submission 42, Transport for NSW, p61
[110] Submission 42, Transport for NSW, p61
[111] Submission 20, Austroads, p3
[112] Submission 36, Transport Certification Australia, p9
[113] Submission 36, Transport Certification Australia, p9

1.116 The feedback received by the Committee regarding heavy vehicle operator experiences of the IAP scheme may be instructive in understanding the requirements which telematics systems must meet before they are useful to both operators and regulators. Mr Ron Finemore AO, Executive Chairman, Ron Finemore Transport, said:

> The regulators impose things and they are not in the best interests. The telematics that are being proposed would not be the telematics that I would buy. The Intelligent Access Program [IAP] involved telematics that were brought in by higher mass limits [HML] in 1995 but nobody picked it up because it does not do the job that you need to do to manage your business. When I asked a question many times about how many people have been prosecuted using IAP the answer is not always easily obtained.[115]

1.117 Mr Paul Pulver, Policy Representative, Livestock, Bulk and Rural Carriers Association, questioned the cost of the IAP in exchange for the benefits provided to operators:

> We did not get any feedback whatsoever from IAP. It cost money to put them in, to run them each month and to have the truck off the road for a day every year to get them recertified and resealed…But with no feedback whatsoever and after paying all that money, you ask what is going on.[116]

1.118 In 2016, RMS introduced the Safety, Productivity & Environment Construction Transport Scheme (SPECTS) as a voluntary scheme designed to improve the safety, environmental performance and productivity of heavy vehicles used by the construction industry in NSW. SPECTS is administered and maintained by RMS and operates in the greater Newcastle-Sydney-Wollongong area. The scheme gives enrolled trucks greater road access to carry greater loads in return for meeting higher environmental, safety and compliance standards. Among the requirements to be met, eligible vehicles must be enrolled in the IAP and be equipped with IAP-linked On Board Mass (OBM) monitoring systems.[117]

1.119 Cement, Concrete and Aggregates Australia (CCAA) was concerned that uptake of SPECTS and its corresponding benefits has been hampered by RMS not sharing IAP data with companies:

> There can be a significant lag between companies being notified by RMS (if at all) of any non-compliance. This lack of information sharing can lead to drivers being unaware of repeated breaches, increasing the risk of an incident. As an alternative to IAP, heavy vehicle operators have chosen to use their own telematics systems, but these are difficult to keep up-to-date and do not provide the added level of assurance back to the regulator.[118]

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[114] Submission 42, Transport for NSW, p61

[115] Mr Ron Finemore AO, Ron Finemore Transport, transcript of evidence 9 April 2018, p13

[116] Mr Paul Pulver, Livestock, Bulk and Rural Carriers Association, transcript of evidence 9 April 2018, p52

[117] Submission 42, Transport for NSW, pp 56-57

[118] Submission 22, Cement, Concrete and Aggregates Australia, p2

1.120 CCAA urged that data collected by RMS through the IAP should be shared with companies in real time, to allow industry to proactively respond to issues of non-compliance and provide greater incentives for the uptake of SPECTS.[119]

Committee comment

1.121 The Committee notes that many operators have concerns about the effectiveness and the purpose of telematics. The current status of the Intelligent Access Program as a vehicle for expanding the use of telematics is unclear. Nevertheless, telematics use is widespread in the industry and we urge that the NSW Government clarify the objectives it has for telematics so that the benefits of telematics can be maximised and the industry have certainty.

Finding 6

The Committee finds that the limitations of telematics deployment need to be understood and overcome as a priority before the roll out proceeds.

Connected and automated vehicle technologies

1.122 As described above the inquiry's terms of reference make specific reference to two types of heavy vehicle technologies; in-vehicle technologies, and connected and automated vehicle (CAV) technologies.[120]

1.123 CAVs are often described as driverless, self-driving or autonomous vehicles. CAVs are classified according to a six level international engineering standard depending on their level of automation, ranging from Level 0 (no automation) to Level 5 (full automation). The Staysafe Committee conducted a comprehensive inquiry into driverless vehicle technology and its introduction into the Australian and NSW transport fleets in 2016.[121]

[119] Submission 22, Cement, Concrete and Aggregates Australia, p3

[120] See Appendix One

[121] Report 2/56, September 2016, Staysafe Report on Driverless Vehicles and Road Safety in NSW, https://www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-details.aspx?activetab=Reports&pk=1972, accessed 15 May 2018

Table 2: Levels of automation

SAE level	Name	Narrative Definition	Execution of Steering and Acceleration/ Deceleration	*Monitoring* of Driving Environment	Fallback Performance of *Dynamic Driving Task*	System Capability *(Driving Modes)*
***Human driver* monitors the driving environment**						
0	No Automation	the full-time performance by the *human driver* of all aspects of the *dynamic driving task*, even when enhanced by warning or intervention systems	Human driver	Human driver	Human driver	n/a
1	Driver Assistance	the *driving mode*-specific execution by a driver assistance system of either steering or acceleration/deceleration using information about the driving environment and with the expectation that the *human driver* perform all remaining aspects of the *dynamic driving task*	Human driver and system	Human driver	Human driver	Some driving modes
2	Partial Automation	the *driving mode*-specific execution by one or more driver assistance systems of both steering and acceleration/ deceleration using information about the driving environment and with the expectation that the *human driver* perform all remaining aspects of the *dynamic driving task*	**System**	Human driver	Human driver	Some driving modes
***Automated driving system* ("system") monitors the driving environment**						
3	Conditional Automation	the *driving mode*-specific performance by an *automated driving system* of all aspects of the dynamic driving task with the expectation that the *human driver* will respond appropriately to a *request to intervene*	System	**System**	Human driver	Some driving modes
4	High Automation	the *driving mode*-specific performance by an automated driving system of all aspects of the *dynamic driving task*, even if a *human driver* does not respond appropriately to a *request to intervene*	System	System	**System**	Some driving modes
5	Full Automation	the full-time performance by an *automated driving system* of all aspects of the *dynamic driving task* under all roadway and environmental conditions that can be managed by a *human driver*	System	System	System	**All driving modes**

Site: http://www.sae.org/misc/pdfs/automated_driving.pdf Note: Copyright © 2014 SAE International. The summary table may be freely copied and distributed provided SAE International and J3016 are acknowledged as the source and must be reproduced AS-IS.

Roll out of CAV technologies

1.124 The New South Wales fleet already includes partially autonomous vehicles. In the view of Austroads, it is the features at Level 2 (partial automation) which will be most important for addressing Australia's road trauma problem. At Level 2 (partial automation) the driver is still responsible for driving the vehicle assisted by automated functions such as lane keeping, adaptive cruise control, speed assistance (including traffic signal recognition), and automated emergency braking. These features address some of the risks relating to heavy vehicle crashes such as driver fatigue, impairment, speed and distraction.[122]

1.125 Experts and regulators expect higher levels of automation to become available in heavy vehicles. Austroads cited, in particular, the progress being made in overseas trials of heavy vehicles which are capable of automating the driving task on motorways. These vehicles may be driven to the entrance ramp, then travel in driverless mode on the motorway to the exit ramp, then driven to the final destination.[123] Heavy vehicle platooning i.e. vehicles operating autonomously in close proximity behind a lead vehicle is already being operated in Western Australia by major mining companies and trialled in Europe.[124]

[122] Submission 20, Austroads, p1
[123] Submission 20, Austroads, p1
[124] Submission 42, Transport for NSW, p64

1.126 Transport for NSW quoted from a 2017 Austroads research paper which cautioned that while CAV technologies show potential to improve heavy vehicle safety, conclusive evidence of significant safety improvements may take time to emerge.[125] It described the prospect of the technology offering road safety benefits by limiting the frequency and consequences of human error in road crashes, especially through connectivity with other vehicles and infrastructure, such as when integrated with C-ITS (co-operative intelligent transport systems) which the NSW Government is actively researching.[126]

1.127 The Centre for Road Safety's Cooperative Intelligent Transport Initiative (CITI) is trialling the use of C-ITS devices in heavy vehicles which enable information to be sent and received by equipped vehicles and roadside infrastructure such as traffic signals. This information gives vehicles advance warning of potential hazards and incidents. Success to date has been limited, however, by the accuracy of the GPS-determined positions of the vehicles which is insufficient to allow the development of many of the anticipated road safety applications.[127]

1.128 A second trial of CAV technologies has been Transport for NSW's trial of a highly automated shuttle at Sydney Olympic Park. Transport for NSW has also sought to facilitate automated vehicle trials in regional New South Wales and with the Australian company, Cohda Wireless, to test prioritisation of freight vehicles at intersections on three Sydney road corridors.[128]

1.129 CAV technologies also have implications for other road managers. Local Government NSW stressed the importance of including local government in future government/industry consultations regarding the policy, infrastructure and legislative changes which will be required. Nationally, the Australian Local Government Association has indicated support for council participation in trials of the new technology.[129]

Regulatory framework

1.130 The principal finding of the Staysafe Committee's 2016 *Inquiry into Driverless Vehicles and Road Safety in NSW* was the need for a national regulatory framework to ensure that the benefits and risks of CAV technologies, in particular the road safety benefits and risks, are examined and trialled consistently with knowledge sharing across jurisdictions.[130]

1.131 In November 2017, the Transport and Infrastructure Council agreed that Australian governments will aim to have regulation in place by 2020 to support

[125] Submission 42, Transport for NSW, p63
[126] Submission 42, Transport for NSW, pp63-65
[127] Submission 42, Transport for NSW, pp65-66
[128] Submission 42, Transport for NSW, p63
[129] Submission 41, Local Government NSW, p6
[130] Report 2/56, September 2016, Staysafe Report on Driverless Vehicles and Road Safety in NSW, https://www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-details.aspx?activetab=Reports&pk=1972, accessed 15 May 2018

the safe deployment of automated vehicles.[131] Transport for NSW confirmed that it is working closely with the National Transport Commission, Austroads and other states and territories to ensure appropriate laws, safety assurance, standards and policies can be put in place to support the deployment of CAV technologies.[132]

1.132 The submissions of the National Transport Commission and Austroads outlined a range of significant projects currently underway to support the objectives of the Transport and Infrastructure Council in preparing for the wider dissemination of CAV technology in the Australian fleet and in addressing safety risks.[133]

1.133 Austroads listed the potential safety issues yet to be fully determined, including:

- human interaction with connectivity and automation
- driver impairment monitoring features to address driver impairment through fatigue, alcohol consumption, distraction or misuse of technology
- further estimation of the road safety benefits of CAVs, such as platooning
- access to data on vehicle specification which is at present rarely available making it difficult to track heavy vehicle uptake for planning and policy purposes
- vehicle age issues including the capacity to retrofit safety technology and opportunities to more rapidly progress CAV technologies through the fleet.[134]

1.134 Transport for NSW advised that a nationally agreed deployment plan for managing cyber security and CAV technologies is being addressed at the national level.[135]

Concerns of stakeholders

1.135 A number of stakeholders addressed their concerns about CAV technologies and heavy vehicle safety to the Committee. Natroad raised doubts that Australia's current road infrastructure could support high levels of automation. It suggested that lane keeping driver assist systems were unlikely to function reliably on roads without highly visible lane markings or poorly maintained and unsealed roads. It also noted that the capacity of CAV technologies to perform many road freight tasks is uncertain, as is the question of liability in the event of accidents.[136]

1.136 The Transport Workers' Union (TWU) also expressed concern about the reliability of partial assist technologies and urged a slower, more cautious approach before any roll out involving heavy vehicles.[137]

[131] Submission 6, National Transport Commission, p2
[132] Submission 42, Transport for NSW, p63
[133] Submission 6, National Transport Commission, p2; Submission 20, Austroads, pp3-4
[134] Submission 20 Austroads, p5
[135] Submission 42, Transport for NSW, p67
[136] Submission 3, Natroad, p3
[137] Submission 31, Transport Workers' Union, p8

1.137 The Australian Trucking Association raised concerns about driver control of vehicles engaged in automated driving. The Association argued reduced driver engagement could also reduce the job interest for professional drivers, while increased driver boredom raised questions about distraction and possible increased risks of fatigue.[138]

1.138 Mr Ron Finemore AO, Executive Chairman, Ron Finemore Transport, told the Committee that recent incidents involving CAV technologies show that the technology is not fully developed and public acceptance still needs to be won. He said that manufacturers of CAV technologies need to be made accountable for their products and third parties protected.[139]

1.139 Professor Ann Williamson, Director, Transport and Road Safety (TARS) Research, warned that the push to deploy new technology is 'overtaking us':

> We need to perhaps stem that tide a little because there are some real caveats on the new technology that is available both in the claimed benefits that are likely to ensue from them and the claimed abilities of many of the technologies that currently are available and are about to be available. That is no less in the heavy vehicle space. In the heavy vehicle space I think we have to be really concerned.[140]

1.140 Mr Bernard Carlon, Executive Director, Centre for Road Safety, Transport for NSW, emphasised the need for collaborative and proactive trialling of new technologies to build up a sound evidence base from an academic, regulatory, productivity and safety perspective. He cited a Seeing Machines trial as an example of government/industry/regulator collaboration which would ensure evidence to support investment and government support.[141]

1.141 The Amy Gillett Foundation also urged further research and development of CAV technology with a view to delivering greater protection to vulnerable road users (cyclists and pedestrians) interacting with heavy vehicles. In its submission the Foundation pointed out the historical focus in the development of CAV technologies on connectedness between vehicles and infrastructure. It argued for a new focus on connecting vehicles to people through smart phone applications. The Foundation advocated for NSW Government support for this research and that the perspective of vulnerable road users be a feature of continuing research and development of any CAV technologies.[142]

Committee comment

1.142 The promise offered for improved road safety from the roll out of connected and automated vehicle technologies appears to be somewhat less for heavy vehicle than for light vehicles, based on experience to date. We reiterate our recommendation from our previous inquiry into the technology that the matter be pursued under a national regulatory framework.

[138] Submission 23, Australian Trucking Association, p8

[139] Mr Ron Finemore AO, Ron Finemore Transport, transcript of evidence 9 April 2018, p10

[140] Professor Ann Williamson, Transport and Road Safety (TARS) Research, transcript of evidence 9 April 2018, p17

[141] Mr Bernard Carlon, Transport for NSW, transcript of evidence 9 April 2018, p 63

[142] Submission 9, Amy Gillett Foundation, p 5

Finding 7

The Committee finds that the evidence presented to it on the value of Connected and Automated Vehicle technologies for improving the safety of the heavy vehicle fleet, is still emerging.

Finding 8

The Committee finds that any roll out of Connected and Automated Vehicle technologies in the heavy vehicle fleet must be undertaken according to a nationally agreed approach in order to maximise the benefits and minimise the risks of such a roll out.

Chapter Two – Strategy, regulation and oversight

Introduction

2.1 In the previous chapter the Committee discussed the types of technologies available to improve the safety of heavy vehicles. In this chapter the Committee discusses how to ensure that technologies are taken up by industry so that the safety improvements they promise can actually be achieved.

National heavy vehicle regulation and strategy

Heavy vehicle national law

2.2 NSW, along with the Australian Capital Territory, Queensland, South Australia, Tasmania and Victoria, has adopted the regulatory framework for heavy vehicles established under the Heavy Vehicle National Law. The Heavy Vehicle National Law is a consistent set of laws for vehicles over 4.5 tonnes gross vehicle mass in each of those states.

2.3 The HVNL prescribes requirements for:

- The standards heavy vehicles must meet before they can be used the road
- The maximum permissible mass and dimensions of heavy vehicles
- Securing and restraining loads on heavy vehicles
- Ensuring parties in the chain of responsibility are held responsible for ensuring the HVNL is complied with, including responsibilities to ensure drivers of heavy vehicles do not:
  - exceed speed limits
  - breach fatigue management requirements
  - breach mass, dimension or loading requirements
- Preventing drivers of heavy vehicles from driving while impaired by fatigue
- Nationally consistent penalties.[143]

2.4 The Heavy Vehicle National Law does not apply to:

- Driver licensing
- The regulation of dangerous goods vehicles and their drivers

[143] Submission 42, Transport for NSW, p39

- Vehicle registrations – although a National Heavy Vehicle Registration Scheme is planned to be implemented by mid-2018.
- Bus driver authorities and bus operator accreditation.[144]

2.5 The HVNL is administered by the National Heavy Vehicle Regulator (NHVR) whose role is to:

> … develop and maintain a regulatory framework that supports the heavy vehicle industry and all parties in the supply chain to take responsibility for safety while promoting sustainable improvements in productivity and efficiency. The NHVR also supports the development and industry take-up of new technologies to improve heavy vehicle safety.[145]

2.6 Transport for NSW described the NHVR's responsibilities as overseeing:

- the National Heavy Vehicle Accreditation Scheme management and accreditations
- the Performance-Based Standards Scheme vehicle design and access approvals
- heavy vehicle access permit applications
- heavy vehicle standards modifications and exemption permits
- a national driver work diary and risk classification system for advanced fatigue management
- one set of national notices
- one set of national fees for NHVR services
- one set of national penalties
- chain of responsibility.[146]

Chain of responsibility

2.7 Chain of responsibility (CoR) is designed to ensure that any party in a position to control and influence on-road behaviour is identified and held responsible. In practical terms, CoR recognises the on-road impacts of the actions and inactions of off-road parties involved in transport activities and provides for their accountability.[147]

2.8 Mr Bill McKinley, Australian Trucking Association, endorsed upcoming changes to the HVNL when he addressed the Committee on 9 April 2018. Reminding the Committee that the majority of trucking businesses are small businesses, he said that the diversity in the industry made chain of responsibility all the more

[144] Submission 42, Transport for NSW, p14
[145] Submission 40, National Heavy Vehicle Regulator, p3
[146] Submission 42, Transport for NSW, p15
[147] Submission 42, Transport for NSW, p50

important as it held all parties in the chain to account for safety, not just the owners and drivers.

> The ATA has championed important changes to these laws, which would impose a general safety duty on all parties in the chain, extend the concept to vehicle maintenance, impost a due diligence obligation on company directors and executives, and dramatically increase maximum penalties.[148]

2.9 Mr McKinley called for upcoming changes to the HVNL to come into force without delay.[149]

National heavy vehicle safety strategy

2.10 The NHVR has also developed a National Heavy Vehicle Safety Strategy. According to the NHVR:

> The focus of the National Heavy Vehicle Safety Strategy is the development of a regulatory framework which will support the heavy vehicle industry to take responsibility for managing risk to deliver safety outcomes. The safety objectives outlined in the strategy are:
>
> (a) Establish industry standards for heavy vehicle operations appropriate to the task.
>
> (b) Maintain high safety standards that deter and discourage operators and drivers who demonstrate unacceptable levels of risk through an integrated compliance and assurance program.
>
> (c) Promote and support continuous safety improvements in industry through information and education.[150]

NSW Road Safety Strategy 2012-2021

2.11 New South Wales is also committed to the National Road Safety Strategy which outlines an agreed set of national road safety goals, objectives and action priorities. As part of this commitment, the NSW Government has established the NSW Road Safety Strategy 2012-2021 with the aim of creating safer road travel in NSW. It also set the state priority target of reducing fatalities by 30 per cent by 2021 (compared to 2008-2010).[151]

2.12 According to the NSW Road Safety Progress Report 2016, New South Wales has the toughest and most active heavy vehicle enforcement regime in Australia. Some of the achievements in this area include:

- Continued compliance operations through a specialised Compliance Investigation Unit to ensure breaches of heavy vehicle rules are investigated and offenders are prosecuted. Roads and Maritime Services investigators are involved in joint operations with the NSW Police Force and police agencies in other states to target heavy vehicle speeding and breaches of fatigue laws.

[148] Mr Bill McKinley, Australian Trucking Association, transcript of evidence 9 April 2018, p2

[149] Mr Bill McKinley, Australian Trucking Association, transcript of evidence 9 April 2018, p2

[150] Submission 40, National Heavy Vehicle Regulator, p6

[151] Submission 42, Transport for NSW, p12

- The Chain of Responsibility Industry Education Program was implemented with presentations and information sessions delivered to key operators in the civil construction industry.
- Programs were developed to help reduce truck rollovers in the forestry and livestock industry sectors, and concrete and aggregate haulage sectors.
- Two Heavy Vehicle Roadworthiness Surveys were conducted in 2012 and 2015 to assess compliance with required regulations including licence, registration, load restraint, mass and work and rest requirements.[152]

NSW Road Safety Plan 2021

2.13 In February 2018, the NSW Government also released Road Safety Plan 2021. This document resets priorities and sets out targeted and proven initiatives to be implemented over the next five years.

Towards a NSW heavy vehicle safety strategy

2.14 Road Safety Plan 2021 includes several initiatives aimed specifically at heavy vehicles. Key amongst these is the commitment to the development of a new heavy vehicle safety strategy. In partnership with the heavy vehicle industry, the New South Wales Government will develop a strategy to 'improve operational safety and increase the uptake of safety technology'.[153] The development of this strategy is highlighted as one of six 'priority areas'.[154]

2.15 Additional initiatives to improve heavy vehicle safety outlined in the Plan include:

- Partnering with the heavy vehicle industry to:
  - Increase safety features in the fleet, such as blind spot monitoring and underrun protection
  - Enhance integration of fleet safety into heavy vehicle access policy
- Working with the Australian Government to fast track the adoption of new technologies into vehicle standards, including for commercial and heavy vehicles
- Expanding the heavy vehicle average speed camera program to metropolitan areas to address risks associated with greater truck movements.

Other jurisdictions

2.16 The Queensland Government has also developed a Heavy Vehicle Safety Action Plan 2016-2018 which operates alongside its Road Safety Strategy and Action Plan. The plan contains a number of initiatives which aim to reduce the number of people killed or seriously injured in crashes involving heavy vehicles.

[152] Submission 42, Transport for NSW, p12
[153] Submission 42, Transport for NSW, p13
[154] NSW Government, Road Safety Plan 2021, p5

2.17 The Heavy Vehicle Safety Action Plan notes that significant safety improvements have been made in a number of areas including vehicle design, technology and condition, driver qualifications, education and fatigue management, and enforcement. It aims to build on these improvements through partnership between government, the heavy vehicle industry and the Queensland Police Service.[155]

2.18 In addition, the Queensland Government has also developed Heavy Vehicle Telematics Strategy 2016. This aims to improve safety, productivity and network outcomes for the community, industry and government, enabled by telematics. It sets out a high-level, nine year plan to facilitate the adoption of telematics and aims to develop a best-practice policy and governance framework to support the implementation of emerging technologies.[156]

2.19 Similarly, the Victorian Department of Premier and Cabinet and VicRoads partnered with Transport Certification Australia (TCA) to manage an industry framework to facilitate the introduction of innovative proposals for the use of Intelligent Transport Systems (ITS) and associated technologies. This intends to examine how technology can improve the efficiency, reliability and safety of road freight transport on the Victorian road network.[157]

Committee comment

2.20 The Committee is pleased to see that the NSW Government has made efforts to improve heavy vehicle safety through actions taken as part of the road safety strategy. We support the Government's intention to develop a specific heavy vehicle safety strategy.

2.21 We have found through this inquiry that there are particular aspects of heavy vehicle safety that will benefit from a specialised and dedicated response. We note the work done in Queensland and expect that Transport for NSW will consider this strategy when developing a suitable one for New South Wales. We also note the focus on technology in Queensland and Victoria, and encourage Transport for NSW to consider whether to develop a separate policy or to incorporate technology into its heavy vehicle safety strategy.

2.22 The Committee is pleased to see that the Government intends to take a consultative approach to developing the strategy. Throughout this inquiry, various issues were raised by stakeholders that require further consideration. We are sure that these issues will be raised again in the context of a safety strategy and encourage the Government to make sure that all the pertinent issues are covered. For any such strategy to be effective, it is important that it is evidence-based. By working with industry, Transport for NSW will be able to produce something which is both achievable and has a significant positive impact on road safety.

2.23 We note that Road Safety Plan 2021 has no timeline for the delivery of a heavy vehicle safety strategy, although it is described as a priority area. Given the

[155] Submission 42, Transport for NSW, p79
[156] Submission 42, Transport for NSW, p79
[157] Submission 36, Transport Certification Australia, p25

importance of this strategy and the continuing growth in heavy vehicle traffic in NSW, we urge the Government to finalise it as soon as possible.

Recommendation 1

The Committee recommends that the New South Wales Government prepares and adopts the anticipated NSW Heavy Vehicle Safety Strategy as a priority.

National harmonisation

2.24 As discussed, a consistent regulatory framework for heavy vehicles across Australia is advanced through the Heavy Vehicle National Law, which is administered by the National Heavy Vehicle Regulator.

2.25 In addition, all Australian jurisdictions have in place road safety strategies and action plans which include heavy vehicle safety. This means that there can be some differences as to how heavy vehicle safety is treated in different states and territories.

2.26 This can lead to confusion, particularly for operators who conduct business in different areas. The National Heavy Vehicle Regulator noted:

> Inconsistent approaches to compliance and enforcement processes and the application of law leads to inconsistent outcomes, with participants being unsure about what is expected of them and how they will be assessed.[158]

2.27 It told the Committee that it encourages law enforcement agencies from all jurisdictions to 'contribute to and participate in consultation around the development, review and implementation of the NHVR's safety assurance framework and associated compliance and enforcement policies and procedures'.[159]

2.28 This was echoed by Toll Group who noted that certain differences in approaches could lead to reduced safety across heavy vehicles. For example, it highlighted that NSW is also the only state in Australia that allows a driver of a truck to have some blood alcohol content and legally drive. While penalties vary, all other jurisdictions have a blood alcohol limit of 0.00. To improve consistency, Toll Group recommended:

> NSW should lead the national harmonisation of the trucking rule book by identifying the laws it has in place that are deficient and amending them to meet the highest level of safety.[160]

2.29 As part of the effort to create a more consistent approach across all jurisdictions, in 2016 the NHVR released *Setting the Agenda – Strategies for a Safer, Productive and more Compliant Heavy Vehicle Industry 2016-2020*. The safety objectives outlined in the strategy are:

[158] Submission 40, National Heavy Vehicle Regulator, p5
[159] Submission 40, National Heavy Vehicle Regulator, p5
[160] Submission 39, Toll Group, p6

(a) Establish industry standards for heavy vehicle operations appropriate to the task.

(b) Maintain high safety standards that deter and discourage operators and drivers who demonstrate unacceptable levels of risk through an integrated compliance and assurance program.

(c) Promote and support continuous safety improvements in industry through information and education.[161]

Committee comment

2.30 The Committee supports the aims of the National Heavy Vehicle Regulator. A consistent regulatory approach across all jurisdictions is clearer for operators and also allows for best practice to be identified and applied accordingly throughout Australia.

2.31 It is also vital for New South Wales, as the through state, to seek a consistent regulatory approach in its neighbouring jurisdictions so that it can be confident that heavy vehicles moving across its borders are safe.

2.32 We are pleased to see, for example, the work being done by the NTC in the field of fatigue management. It is prudent to wait for this work to be completed before any changes are made to current fatigue management policies. Having this body operate at a national level means that its findings are given sufficient weight.

2.33 The suggestion from Toll Group that New South Wales lead harmonisation by identifying any deficient laws and amending them to meet the highest safety standard is an excellent one. Through consultation and collaboration via various channels such as the Heavy Vehicle National Regulator and the Council of Australian Governments, the most suitable solutions will be identified and implemented. New South Wales is in a prime position to drive higher levels of safety at the national level.

Recommendation 2

The Committee recommends that the New South Wales Government continues to pursue heavy vehicle regulation in a national framework with the goal of national harmonisation.

Compliance and enforcement

Australian Design Rules

2.34 Heavy vehicle safety standards are outlined in the Australian Design Rules (ADR). The ADRs are administered by the Commonwealth Government under the *Motor Vehicle Standards Act 1989*. This Act requires all road vehicles, whether they are newly manufactured in Australia or are imported as new or second hand vehicles,

[161] Submission 40, National Heavy Vehicle Regulator, p6

to comply with the relevant ADRs at the time of manufacture and supply to the Australian market.[162]

2.35 Mandating vehicle technical standards improves safety and ensures consistency between vehicles. As the motor vehicle industry has become more globalised there are also increasing arguments for regional and international harmonisation of vehicle standards.

2.36 The Commonwealth Government's policy is to harmonise the national vehicle safety standards with international regulations where possible and consideration is given to the adoption of the international regulations of the United Nations Economic Commission for Europe. [163]

2.37 Safety technology is being introduced more quickly in the European Union (EU). Transport for NSW noted:

> A comparison of Heavy Vehicle Safety Standards included in the UN Vehicle Regulations compared to the Australian Design Rules … indicates considerable progress in introducing safety technologies in the EU and the potential for Australian Standards to align with the EU standards.[164]

2.38 ADRs are developed through a continuous program of review and revision. This includes monitoring international developments and regular consultation with key stakeholders. This process identifies any required changes to existing ADRs or the need for new ADRs. Where possible, existing ADRs are also subject to a full review every ten years to ensure they remain relevant and are not a barrier to the importation of safer vehicles.[165]

2.39 Drafts of ADR amendments, new ADRs and full reviews of ADRs are also provided for public comment. The amount of consultation required and who is involved depends on the degree of impact a new or amended ADR will have on the industry or road users.[166]

2.40 New ADRs or significant changes that increase the stringency of existing ADRs may be subject to a vote by the Transport and Infrastructure Council Ministers. Following this vote, the Commonwealth Minister for Infrastructure and Regional Development may then determine the new or amended standards. Sometimes, a Regulation Impact Statement is also prepared to examine a proposed new or amended ADR.[167]

2.41 The Commonwealth Department of Infrastructure and Regional Development and Cities has recently completed a consultation process for a Regulation Impact Statement examining draft ADRs which considers a range of policy options to increase the fitment of stability control systems to heavy vehicles, in order to reduce heavy vehicle related road crash trauma. This process examined the case

[162] Submission 42, Transport for NSW, p52
[163] Submission 42, Transport for NSW, p53
[164] Submission 42, Transport for NSW, p53
[165] Submission 42, Transport for NSW, p53
[166] Submission 42, Transport for NSW, p53
[167] Submission 42, Transport for NSW, p53

for mandating electronic stability control (ESC) for heavy trucks and buses and roll stability control (RSC) for heavy trailers, through the ADRs.[168]

2.42 Transport for NSW highlighted that these safety mechanisms are already required in the EU:

> It is important to note that the EU introduced Regulation (EC) No 661 in 2009 and mandated the following safety features:
>
> - Electronic Stability Control Systems on all vehicles (from 1 November 2011 for new types of vehicle and 1 November 2014 for all new vehicles).
> - Advanced Emergency Braking Systems and Lane Departure Warning Systems on heavy-duty vehicles (from 1 November 2013 for new types of vehicle and 1 November 2015 for all new vehicles).[169]

2.43 Some stakeholders argued that the consultation process took too long and that this was leading to slower uptakes of safety technology with an associated negative impact on road safety. The Truck Industry Council said:

> …if the Electronic Stability Control draft ADR and RIS process timeline was applied to AEBS [Autonomous Emergency Braking Systems] and LDWS [Lane Departure Warning Systems] implementation then these safety features would have a potential enforcement date of 2024/25. In TIC's view this is two years too long, the delay being due to the current RIS justification process that is far too onerous due to Federal processes. … A target timeline for a completed ADR and RIS, for at least AEBS, should be 12 months (and not the 3 years that ADR35/06 and RIS for Electronic Stability Control took).[170]

Committee comment

2.44 The Committee understands the role of the Australian Design Rules in ensuring that vehicles sold in Australia are of a suitable standard and have adequate safety provisions. However, we also support those stakeholders who raised concerns about the length of time taken for Australian Design Rules to come into force. We appreciate that there is the need for rigorous consultation processes to ensure that affected stakeholders are made fully aware of the changes and given the opportunity to raise concerns. Nevertheless, efforts should be made to streamline this process and ensure that operators in New South Wales and Australia are encouraged to install improved safety features sooner.

Finding 9

The Committee finds that the process for introducing new Australian Design Rules or amending existing Australian Design Rules is overly complex, and that delays are inhibiting efforts to improve heavy vehicle safety through the take-up of new technology.

[168] Submission 42, Transport for NSW, p54
[169] Submission 42, Transport for NSW, p54
[170] Submission 35, Truck Industry Council, p8

Industry take-up of heavy vehicle safety technologies

2.45 At present there are widely varying technologies and combinations of technologies operating within the heavy vehicle industry, depending on the age of the vehicles in use, and the industry willingness to take-up technologies voluntarily. The National Heavy Vehicle Regulator advised:

> The majority of the heavy vehicle industry is proactive about road safety features as demonstrated by their voluntary uptake of safety features. Many operators are early adopters of technology review their own operating conditions and adopt safety features that address risks they identify.[171]

2.46 Cement, Concrete and Aggregates Australia (CCAA) confirmed that its members:

> … are increasingly using technology and innovative design to improve safety and prevent road accidents. We are beginning to see these in newer model vehicles, with integrated safety technologies such as lane departure warning systems, electronic stability control and automatic emergency braking systems.[172]

2.47 CCAA emphasised that in order for these technologies to be embraced by the heavy vehicle industry, they must be practical, cost-effective, applicable to the industry configuration, and where necessary phased in over time. CCAA further recommended that industry expertise must be allowed input if any proposed technological solutions were to be readily adopted by industry.[173]

2.48 Linfox Logistics also confirmed the voluntary adoption of technology in its fleet. It noted that while exact configurations depend on customer requirements, its newer trucks include lane departure warning systems, fatigue warning systems and autonomous emergency braking systems.[174]

2.49 Toll Group advised that, as well as already having telematics in a large number of its current vehicles, the company is undertaking a major equipment upgrade project. Mr Royce Christie, Group General Manager, Government Relations, Toll Group, told the Committee:

> All of the new heavy fleet will have the latest safety equipment on board and all will have telematics installed as well. Driver state sensing is also an important part of that. The benefits that we see from that technology to us are enormous.[175]

2.50 The NSW Centre for Road Safety independently reviews crash avoidance and harm-minimisation technologies currently available, and publishes the results to assist select appropriate technologies. The Centre also publishes estimates of the percentage of crashes which could be prevented by many of these technologies. For some technologies, such as electronic stability control, the Centre's estimate provided strong evidence of efficacy.[176]

[171] Submission 40, National Heavy Vehicle Regulator, p4

[172] Submission 22, Cement, Concrete and Aggregates Australia, p2

[173] Submission 22, Cement, Concrete and Aggregates Australia, p2

[174] Submission 37, Linfox Logistics, p2

[175] Mr Royce Christie, Toll Group, transcript of evidence 9 April 2018, p34

[176] Submission 34, Transport and Road Safety (TARS) Research, p4

2.51 In its 2017 publication, *Safety Technologies for Heavy Vehicle and Combinations*, the Centre for Road Safety advised that around half the technologies it reviewed could be retrofitted to existing vehicles.[177] Suitability for retrofitting is a significant issue, given that the average age of the New South Wales truck fleet in 2017 was 14 years, indicating that a large proportion of the fleet is unlikely to be equipped with the safety and intelligent transport systems necessary to meet the NSW Government's road crash and injury reduction objectives,[178] contained in the NSW Road Safety Plan 2021.[179]

2.52 The Truck Industry Council wrote that many new and emerging technologies, including electronic stability control, autonomous emergency braking systems, lane departure warning systems, and fatigue warning systems, are mandated in overseas markets. It expressed concern that while larger markets such as Europe, Japan and the United States mandated many of these technologies up to a decade ago, Australia has delayed updating the Australian Design Rules (ADR). This delay has stalled even the voluntary adoption of new technologies by limited their availability on the Australian market in both new and retrofitted vehicles.[180]

2.53 The Truck Industry Council did note that electronic stability control is progressing through the ADR process, but other technologies have no implementation plan or timing scheduled.[181]

Voluntary or mandatory take-up

2.54 The major point of difference amongst heavy vehicle stakeholders and regulators is whether operators should be forced to adopt particular technologies or be allowed to pursue voluntary take-up.

2.55 Natroad advocated for voluntary adoption. It urged consultation with the industry before any decisions to mandate technologies and that the benefits of adopting any particular technology must be shown to outweigh the costs for transport operators.[182]

2.56 Similarly, Ron Finemore Transport opposed mandating technologies. It was particularly concerned that regulators work with industry to ensure that any changes complemented investments which operators had already made in road safety technologies.[183]

2.57 The Livestock, Bulk and Rural Carriers Association was concerned that any data collected by technology be used to inform better policy making in areas like road funding. The Association supported voluntary up-take of technologies and opposed their use for enforcement purposes.[184]

[177] Transport for NSW, *Safety Technologies for Heavy Vehicles and Combinations*, June 2017, p1
[178] Submission 35, Truck Industry Council, pp3-4
[179] Submission 42, Transport for NSW, p13
[180] Submission 35, Truck Industry Council, pp6-7
[181] Submission 35, Truck Industry Council, p8
[182] Submission 3, Natroad, p1
[183] Submission 21, Ron Finemore Transport, p3
[184] Submission 28, Livestock, Bulk and Rural Carriers Association, p7

2.58 The Australian Logistics Council, on the other hand, supported the mandatory introduction of telematics in heavy vehicles. The Council advocated for amendments to the Heavy Vehicle National Law to establish a common set of data and privacy standards, rules to ensure compliance with standards and to establish offences, and regulation of what information should be recorded and the circumstances where it could be accessed for enforcement purposes.[185]

2.59 Transurban also argued for mandating the adoption of in-vehicle technologies where the evidence demonstrated clear road safety benefits would follow.[186]

2.60 Cement, Concrete and Aggregates Australia proposed that contract conditions be used to specify technologies, rather than by regulation.[187]

2.61 Welsh Freight Services Pty Ltd argued that electronic work diaries, for example should only be mandated for operators wo were deficient in fatigue management, with operators who can demonstrate success being afforded flexibility.[188]

2.62 The Transport Workers' Union pointed out that not all technologies had proved reliable, so mandating their installation was premature. The Union was also concerned that the cost of installing technologies was a barrier to smaller operators, including owner drivers, taking them up.[189]

2.63 Other stakeholders expressed support for mandating specific in-vehicle technologies. JJ Richards and Sons Pty Ltd advocated mandatory lane keeping support, collision warning and emergency braking, electronic stability packages, telematics, blue tooth enabling to allow for compliant mobile phone use, and load monitoring devices.[190]

2.64 The Australian Trucking Association advocated mandatory electronic stability control for all new trucks and trailers with only a narrow range of exemptions.[191]

2.65 Transurban recommended the mandating of crash avoidance technologies including emergency braking, electronic stability control, roll stability control, and lane departure warning systems. It noted, however, that these technologies should only be required where clear evidence demonstrated benefits. In cases where there was a lack of supporting evidence, the technologies should be further evaluated for effectiveness.[192]

2.66 In contrast to operator endorsements, Transport and Road Safety (TARS) Research urged caution and further research before widespread implementation of these in-vehicle technologies. It stressed that automated technologies must be 100 per cent reliable or as close to it as possible, and that unreliable sensor

[185] Submission 24, Australian Logistics Council, pp4-12
[186] Submission 25, Transurban, p13
[187] Submission 22, Cement, Concrete and Aggregates Australia, p2
[188] Submission 30, Welsh Freight Services Pty Ltd, p2
[189] Submission 31, Transport Workers' Union, p9
[190] Submission 5, JJ Richards and Sons Pty Ltd, pp 3-4
[191] Submission 23, Australian Trucking Association, p2
[192] Submission 25, Transurban, p13

technologies should not be added to vehicles. TARS also stipulated that technology must facilitate the driving task and benefit the driver. It expressed concern that assistive technologies which assume the role of controlling vehicle direction and speed, leaving the driver to simply monitor vehicle progress, should not be used in heavy vehicles. TARS argued that it is well understood humans are not good at maintaining alertness in monotonous or unstimulating conditions.[193]

2.67 TARS was also concerned that more guidance be made available to the heavy vehicle industry regarding the usability and potential threats to safety arising from each of the new technologies. It suggested that an improved practical design guideline and valid and practical assessment tools for assessing the usability of new technologies in heavy vehicles could be developed through the Australian New Car Assessment Program (ANCAP) and the Global NCAP.[194]

Clarifying the purpose of new technology

2.68 As described in Chapter One, some operators are reluctant to adopt new technologies when they are unclear about how the technology will be used to regulate their operations in addition to improving safety. The purpose to which telematics are to be put is especially problematic.

2.69 The National Telematics Strategy has recently been reviewed by the National Transport Commission (NTC) with a particular focus on using telematics for regulatory purposes. The NTC considered minimum standards for the type of data to be captured and regulatory models which would encourage greater use of telematics, particularly by smaller operators.[195] Transport for NSW advised the Committee that smaller operators were often reluctant to use telematics because they feared prosecution for minor breaches, rather than regulators focusing on systematic breaches and patterns of behaviour.[196]

2.70 Transport for NSW also foreshadowed that new Chain of Responsibility legislation, due to be implemented during 2018, will provide opportunities for telematics to be used by parties in the chain to assist them to comply with their obligations. It predicted that these provisions will not only provide governments with greater enforcement powers, but also make available an expanded source of information to draw on to prove an offence, or intelligence to initiate or conduct an investigation. Transport for NSW noted that this may also reduce the need for governments to oversee data collection and data integrity as is currently the case for data collected under the Intelligent Access Program (IAP).[197]

2.71 Mr Michael Kilgariff, Chief Executive Officer, Australian Logistics Council (ALC) advocated that amending the Heavy Vehicle National Law to make the use of telematics mandatory would provide national consistency regarding the standards required for telemetry hardware. In the view of the ALC any relevant equipment should comply with the data dictionary compiled by Transport Certification Australia. National consistency was far preferable to states and

[193] Submission 34, Transport and Road Safety (TARS) Research, p1
[194] Submission 34, Transport and Road Safety (TARS) Research, p4
[195] Submission 42, Transport for NSW, p62
[196] Submission 42, Transport for NSW, p62
[197] Submission 42, Transport for NSW, p62

territories making their own rules, resulting in inefficiency, confusion and cost to industry.[198]

A national operating standard

2.72 Mr Kilgariff further observed that telematics was just one part of a broader solution to improving heavy vehicle safety. He drew the attention of the Committee to a position paper, published by the ALC which argues that the Heavy Vehicle National Law should also be amended to require heavy vehicle operators to meet a national operating standard before they can be industry operators.[199]

2.73 The national operating standard would require heavy vehicle operators to have the financial capacity both to operate and adopt a uniform safety management system. This standard would be similar to standards already implemented in Canada, New Zealand, the United Kingdom and the United States. Mr Kilgariff also confirmed that mandating telematics and introducing a national operating standard was supported by the Toll Group.[200]

Accreditation and licensing

Accreditation

2.74 Mr Kilgariff's support for a national operating standard, or operator licensing, as the means of ensuring heavy vehicle operators have the capacity to operate safe fleets is in contrast to other stakeholders who supported accreditation schemes.

2.75 Evidence received by the Committee argued the merits of accreditation or licensing as the best way to achieve safety standards in the heavy vehicle industry. The evidence also indicated support for accreditation as a means to achieve national harmonisation.

2.76 Transport for NSW advised that crash rates for vehicles from accredited operators are lower than from non-accredited operators in the order of 50 to 75 per cent.[201] It described the National Heavy Vehicle Accreditation Scheme (NHVAS) as a 'formal process for recognising operators who have robust safety and other management systems in place'. Accreditation under the NHVAS applies to management of mass, maintenance and fatigue.[202]

2.77 Transport for NSW also described the Hire Trailer Maintenance Management Accreditation Scheme, the NSW Livestock Loading Scheme, and the Safety, Productivity and Environment Construction Transport Scheme (SPECTS), which are other voluntary schemes designed to improve the safety and productivity of heavy vehicles operating in particular industries through standards for safety and other operational requirements.[203]

[198] Mr Michael Kilgariff, Australian Logistics Council, transcript of evidence 9 April 2018, p26
[199] Mr Michael Kilgariff, Australian Logistics Council, transcript of evidence 9 April 2018, p26
[200] Mr Michael Kilgariff, Australian Logistics Council, transcript of evidence 9 April 2018, p26
[201] Mr Bernard Carlon, Transport for NSW, transcript of evidence 9 April 2018, p58
[202] Submission 42, Transport for NSW, p55
[203] Submission 42, Transport for NSW, p55

2.78 The Australian Trucking Association (ATA) operates Trucksafe, an industry-led accreditation program. Trucksafe requires operators to meet five safety standards, and livestock transporters an additional animal welfare standard, all of which are subject to regular independent audit.[204]

2.79 The NHVAS offers exemptions not available to Trucksafe-accredited operators in areas such as the regularity of inspections, working hours and mass. The ATA argued that Trucksafe is more rigorous than the NHVAS and recommended that the NSW Government extend the NHVAS exemptions to Trucksafe-accredited operators.[205] Mr Bill McKinley, Chief of Staff, Australian Trucking Association told the Committee that the problem with accreditation was that there are multiple schemes, resulting in multiple audit requirements:

> There is this plethora of audits all covering the same ground. What is needed is an approach of minimising the number of audits and, therefore, the cost to trucking businesses.[206]

2.80 The recent infrastructure boom, especially in Sydney and Melbourne, has resulted in an increase in heavy vehicle movements and the resulting increase in road safety risk. To improve safety in this area, NSW has introduced SPECTS. This is a voluntary scheme designed to enable the efficient movement of construction materials by allowing enrolled trucks carrying more materials greater road access in return for meeting higher environmental, safety and compliance standards.[207]

2.81 Victoria has signed a Memorandum of Understanding with Transport for London to introduce an Australian version of the UK Construction Logistics and Community Safety (CLOCS) scheme. This scheme sets out safety standards that have the aim of improving heavy vehicle safety and the safety of other road users that might interact with them.[208]

2.82 Transport for NSW observed that there may be a benefit in having a consistent approach and was open to the idea of adopting the Victorian model if it was effective:

> The greatest benefits will be generated if an accreditation scheme is harmonised nationally. Adopting a well-developed scheme such as CLOCS to Australia may provide the most efficient and effective method of developing appropriate schemes.[209]

2.83 Transurban and ATA advised they are in active consultation with relevant stakeholders to establish a national CLOCS scheme.[210]

[204] Submission 23, Australian Trucking Association, p3

[205] Submission 23, Australian Trucking Association, p4

[206] Mr Bill McKinley, Australian Trucking Association, transcript of evidence 9 April 2018, pp4-5

[207] Submission 42, Transport for NSW, p83

[208] Submission 42, Transport for NSW, p83

[209] Submission 42, Transport for NSW, p83

[210] Submission 25, Transurban, p7; Mr Bill McKinley, Australian Trucking Association, transcript of evidence 9 April 2018, p6

Licensing

2.84 The ATA quoted the National Transport Commission as having rejected operator licensing in favour of chain of responsibility for compliance purposes, concluding that operator licensing was anti-competitive and heavy handed. As reported earlier in this chapter, the ATA argued strongly for expanded chain of responsibility legislation and called for the NSW Government to oppose operator licensing.[211]

2.85 The National Heavy Vehicle Regulator is undertaking a review of truck safety accreditation schemes and will report this year.[212] The Regulator has also proposed the introduction of a National Heavy Vehicle Accreditation Framework which would include operator certification and a national heavy vehicle driver licensing framework.[213]

2.86 Transport for NSW concluded that there is support for accreditation schemes throughout the trucking industry, and that the take-up of accreditation is proof that its benefits outweigh the costs.[214]

2.87 In evidence to the public hearing, Ms Melinda Bailey, Executive Director Compliance and Regulatory Services, Roads and Maritime Services, noted that voluntary accreditation raised questions of who determined standards and sanctions. She proposed that an accreditation scheme needed regulatory oversight to ensure it was being appropriately administered.[215]

2.88 This accorded with the view of Associate Professor Louise Thornthwaite, Macquarie University who told the Committee that oversight roles in the industry needed to become clearer and a statutory basis, rather than a voluntary one, for performance standards was necessary.[216]

2.89 As described above, Toll Group gave support to operator licensing. Mr Royce Christie, Group General Manager Government Relations, Toll Group told the Committee that licensing went beyond the focus of accreditation by testing whether an operator had 'sufficient skills, finances and personnel' to maintain their vehicles at all times and not just in the context of annual roadworthiness assessment.[217] He described the benefits of licensing 'as a way of proving that you can operate a trucking business',[218] and that this was consistent with the way air and rail freight operators were regulated.[219]

2.90 Linfox Logistics expressed concern that some sectors of the transport industry have moved away from regulated and standardised training requirements for

[211] Submission 23, Australian Trucking Association, p14

[212] NHVR website, https://www.nhvr.gov.au/about-us/engaging-with-industry/review-of-heavy-vehicle-accreditation-systems , accessed 15 May 2018

[213] Submission 40, National Heavy Vehicle Regulator, p6

[214] Submission 42, Transport for NSW, p56

[215] Ms Melinda Bailey, Roads and Maritime Services, transcript of evidence 9 April 2018, p68

[216] Associate Professor Louise Thornthwaite, Macquarie University, transcript of evidence 9 April 2018, p48

[217] Mr Royce Christie, Toll Group, transcript of evidence 9 April 2018, p37

[218] Mr Royce Christie, Toll Group, transcript of evidence 9 April 2018, p38

[219] Mr Royce Christie, Toll Group, transcript of evidence 9 April 2018, p38

drivers and safety standards for vehicles. It also commented that ridesharing operators are entering the industry with no or low barriers of entry, giving rise to the need for closer regulation and standard setting.[220]

2.91 Toll Group proposed that an operator licencing system could also stipulate issues like maximum vehicle age and incentives available to operators to take-up safety technologies.[221] Mr Royce Christie, Toll Group pointed out that operator licensing enabled removal of poor operators, including drivers who lose their licence in one state while gaining one in another, and 'phoenix-style' businesses where the operator 'allows one business to burn down and walks into another'.[222]

Encouraging proven safety technologies

2.92 Regardless of which overall regulatory schemes will best achieve heavy vehicle safety outcomes, as discussed in Chapter One, there are proven technologies available now which if installed in all trucks or as widely as possible, would have significant road safety benefits.

2.93 The Truck Industry Council wrote that technologies like electronic stability control (ESC), autonomous emergency braking (AEB) systems, lane departure warning (LDW) systems, and many fatigue warning systems, are mandated in overseas markets. It expressed concern that while larger markets such as Europe, Japan and the United States mandated many of these technologies up to a decade ago, Australia has delayed updating the Australian Design Rules (ADR). This delay has stalled even the voluntary adoption of new technologies by limited their availability on the Australian market in both new and retrofitted vehicles.[223]

2.94 As discussed above, the Council advised that while ESC is currently progressing through the ADR development process, other systems like AEB and LDW are on a work program but have no implementation plan or timing.[224]

2.95 Similarly, Toll Group noted that certain technologies with a proven record of improving road safety, take a long time to be mandated for heavy vehicles. They argued that Australia risks being left behind international developments:

> Electronic Stability Control is a technology that has been around for more than a decade and has been mandatory on new cars in Australia for some years. It is not yet mandated for new trucks. While Australia waits for those changes to occur other new technology is already becoming standard in many international markets.[225]

2.96 Toll Group agreed with the Truck Industry Council that Australia is not responding fast enough to the opportunities for improved vehicle and road safety presented by already available technologies. It referred to research undertaken by the Monash University Accident Research Centre which estimated that a 25 per cent fatal crash reduction, saving 67 lives a year, could be obtained from AEB alone.

[220] Submission 37, Linfox Logistics, p3
[221] Submission 39, Toll Group, attachment p2
[222] Mr Royce Christie, Toll Group, transcript of evidence 9 April 2018, pp37-38
[223] Submission 35, Truck Industry Council, pp6-7
[224] Submission 35, Truck Industry Council, p8
[225] Submission 39, Toll Group, p6

Toll Group further quoted the Centre as estimating a saving of 16 lives per year from the installation of LDW systems, 11 lives from ESC, and 10 lives from fatigue warning systems. Toll Group anticipated a halving of the road toll for trucks if all of these technologies were mandated and installed in every truck nationally.[226]

2.97 The Heavy Vehicle National Regulator similarly concluded that 'without mandating the retrofitting of proven safety technology, a significant proportion of the fleet would not obtain the safety benefits'.[227]

2.98 Toll Group also noted that no jurisdiction in Australia offered any incentive for truck owners to upgrade their fleet.[228] Natroad wrote that heavy vehicle operators are unlikely to upgrade their fleets or adopt new technology if they cannot see financial benefit.[229]

Incentives and exemptions

2.99 Many stakeholders argued that the most effective way to encourage the take-up of new technologies is to provide incentives, either in the form of financial benefits or as exemptions from regulatory requirements.

2.100 While support for incentives came from across the industry, some stakeholders argued that they would be most effective if addressed to smaller operators.

2.101 Seeing Machines Limited quoted Australian Bureau of Statistics figures that over 95 per cent of trucking businesses in Australia have less than 20 employees and are classed as small enterprises, where additional costs to the business could be perceived as an unwanted burden.[230] It argued that the NSW Government could improve heavy vehicle safety outcomes by removing the cost barrier for small to medium businesses to upgrade their fleets. It also suggested that regulatory agencies could provide rebates on the annual cost per vehicle of registration and insurance to encourage investment in safety technologies.[231]

2.102 As discussed, incentives and exemptions include a range of approaches which have more or less attraction to operators depending on their business model. For example, the accreditation schemes described above include various exemptions relating to mass and road access designed to serve the needs of particular operators. In return for accreditation under the NHVAS operators receive concessions and exemptions from certain requirements and are allowed more flexible work practices.[232]

[226] Submission 39, Toll Group, p5
[227] Submission 40, National Heavy Vehicle Regulator, p4
[228] Submission 39, Toll Group, p5
[229] Submission 3, Natroad, p2
[230] Submission 26, Seeing Machines Limited, p9
[231] Submission 26, Seeing Machines Limited, p9
[232] Submission 42, Transport for NSW, p55

2.103 The Livestock, Bulk and Rural Carriers Association proposed reductions or exemptions from stamp duty for operators upgrading their fleets by purchasing safer vehicles.[233]

2.104 Similarly, Toll Group and others proposed incentives for fleet upgrading through stamp duty rebates.[234]

Age of fleet

2.105 Of particular relevance to the costs of safety upgrades and the provision of incentives to operators is the question of the age of the New South Wales heavy vehicle fleet.

2.106 The Truck Industry Council noted that the average age of trucks in Australia (14.9 years in 2017, and 14 years for New South Wales) is approximately twice the age of European fleets and almost three times the age of fleets in China and California. It emphasised that the age of the fleet is crucial to the take-up of new safety and environmental technologies in heavy vehicles.[235]

2.107 In the Council's view, encouraging the voluntary adoption of new safety technologies is essential to upgrading the technological status of the fleet in addition to mandating technologies through Australian Design Rules, discussed above.[236]

2.108 In its submission, Austroads noted that many of the advanced automated vehicle safety features cannot be retrofitted to vehicles, yet 'Road safety benefits will only accrue at higher levels of penetration on the road'.[237]

2.109 Mr Bernard Carlon, Executive Director, Centre for Road Safety, acknowledged that the age of the fleet, particularly in the second hand market, is a significant factor in terms of the safety features of the vehicles. He told the Committee that it was a significant issue for the Australian market that safety features were mandated in Europe in some cases up to a decade before the corresponding Australian mandate. Mr Carlon confirmed that countries such as Sweden, Denmark, the United Kingdom, Ireland and the Netherlands had fleets significantly lower in age and higher in safety performance when compared to Australia.[238]

Committee comment

2.110 The evidence presented in Chapter One regarding the development and operation of different heavy vehicle safety technologies, also disclosed differing levels of support by stakeholders for the adoption of one technology over another, and differences regarding the benefits of mandating particular

[233] Submission 28, Livestock, Bulk and Rural Carriers Association, p9
[234] Submission 39, Toll Group, p2; Submission 17, Mr Mark Reynolds, p2
[235] Submission 35, Truck Industry Council, p3
[236] Submission 35, Truck Industry Council, p6
[237] Submission 20, Austroads, p5
[238] Mr Bernard Carlon, Transport for NSW, transcript of evidence 9 April 2018, pp66-67

technologies versus allowing industry to adopt the technologies which they prefer.

2.111 In the absence of mandated technologies and clear rules about how regulators will use technology to monitor and enforce compliance, stakeholders have moved to adopt and install different technologies at different rates.

2.112 Clearly, the major heavy vehicle operators have made the most gains with evidence received from Toll Group, Ron Finemore Transport, Linfox, JJ Richards and Sons Pty Ltd and others about technologies being installed widely across their fleets if not in all vehicles, and in advance of regulation specifying the installation.

2.113 Evidence also showed that regulators were uncertain about the value of particular technologies, and had held back from mandating even basic technologies like electronic work diaries. Other technologies like IAP had been pursued to address the needs of a particular industry segment, but early expectations that it would be extended across industry and be used for broader compliance and enforcement purposes, had not been met.

2.114 The evidence discussed above regarding national regulation showed that even where regulatory powers are clear, such as with Australian Design Rules, changing the rules to encompass new technologies is slow, and the road safety benefits which many widely available technologies promise are being delayed.

2.115 We believe the current deficiencies in regulation and take-up of safety technologies are in large part the result of administrative complexity and the slow processes involved before a safety improvement becomes mandated.

2.116 Some heavy vehicle operators move much more quickly than regulators to adopt new technologies when they see that benefits will flow. But as a result, the take-up of technologies is uneven, and how the regulators will ultimately respond to those technologies is unclear. The regulators need to decide the purpose for promoting, installing and even mandating particular technologies, such as electronic work diaries and other telematics, so that operators understand their obligations and exposure to regulatory requirements, and can make appropriate business decisions and investments.

2.117 We are unable to draw conclusions about the relative merits of accreditation and licensing in the face of the strong arguments made by the supporters of both.

2.118 Similarly, based on the evidence we received we are unable to draw any particular conclusions about the relative merits of different incentives for operators to adopt new technologies. If incentives are required, in the absence of or as an adjunct to mandating, for new technologies to be taken up, then we encourage regulators and industry to collaborate on resolving what approach will achieve the most road safety improvements.

2.119 It is clear, however, as we found in Chapter One, that certain technologies are proven and are available now, and their installation would have significant road safety benefits. The promotion of these technologies is to us an obvious path for regulators and industry to follow.

2.120 We also restate the position we adopted in previous inquiries, and have followed throughout this report, that the general context for all our findings and recommendations is one which promotes the national harmonisation of heavy vehicle regulations and road safety action. We commend Transport for NSW for being open to adopting programs from other jurisdictions if they prove to be the most appropriate and look forward to New South Wales driving national harmonisation.

Recommendation 3

The Committee recommends that the NSW Government adopt a consistent policy on the installation of telematics in heavy vehicles with a view to all vehicles meeting the required standards as a priority.

Recommendation 4

The Committee recommends that the NSW Government work with the Commonwealth Government to adopt a policy of identifying heavy vehicle safety technologies which are currently available and can be practically installed or retro-fitted, such as electronic stability control, roll over stability control, and autonomous emergency braking, with a view to all vehicles being fitted with these technologies in an agreed timeframe.

Recommendation 5

The Committee recommends that, given the lack of industry consensus, the New South Wales Government examine the relative merits of accreditation and licensing, and the various models of regulation which they impose, with a view to determining how to achieve the most road safety improvements at the most efficient cost.

Recommendation 6

The Committee recommends that the NSW Government examine the value of an incentives scheme with the aim of assisting small operators and operators least able to afford converting or replacing their vehicles, to acquire new technology.

Consulting with industry and stakeholders

2.121 In its submission, Transport for NSW reported on industry and stakeholder consultation at both the national and state levels.

2.122 The National Heavy Vehicle Regulator engages with the heavy vehicle industry on both the national law itself, and on how to promote continuous safety improvements, especially via joint initiatives between government and industry.[239] The Regulator has established an Industry Reference Forum and five industry operator groups to facilitate this engagement. The Forum, described by the Regulator as its key advisory body, includes representatives from across the heavy vehicle industry including operators and their advocates, driver representatives, major customers, other regulators, and local government. The

[239] Submission 42, Transport for NSW, p83

Forum addresses published terms of reference and publishes communiques outlining matters considered at its meetings.[240]

2.123 In New South Wales, the NSW Government has established the Road Freight Industry Council through which it engages with the heavy vehicle industry.[241] The Council includes industry representatives selected by the Minister for Roads who meet to consider safety and efficiency in freight transport and logistics.[242] Further as discussed above, Road Safety Plan 2021 includes a priority action to develop a heavy vehicle safety strategy. Mr Bernard Carlon, Executive Director, Centre for Road Safety at Transport for NSW advised the Committee that a subcommittee of the Road Freight Industry Council would be tasked with designing the heavy vehicle road safety strategy.[243]

2.124 In its submission Ron Finemore Transport called for greater cooperation between government and industry so that the best road safety options were identified collaboratively rather than governments act reactively.[244]

2.125 Cement, Concrete and Aggregates Australia recommended to the Committee a range of consultation and collaboration mechanisms for government and industry to work together on identifying and implementing road safety solutions. These included a Heavy Vehicle Safety and Technology Forum to ensure decisions about technological solutions were better informed and better data sharing between government and industry to improve industry's response to non-compliance.[245]

2.126 The Transport Workers' Union argued that any steps to mandate the use of technology in heavy vehicles must be made in full consultation with the industry and particularly with truck drivers.[246]

2.127 The Amy Gillett Foundation focused in its submission on the interaction between heavy vehicles and vulnerable road users, and the technologies being developed to manage this interaction more safely. The Foundation recommended that all new technologies be reviewed by vulnerable road user experts before their introduction.[247]

Committee comment

2.128 We note the relative transparency of the national consultation arrangements when compared with the practices of the NSW Road Freight Industry Council, and support calls by stakeholders for thorough and effective consultation.

[240] NHVR website, https://www.nhvr.gov.au/about-us/engaging-with-industry/industry-reference-forum, accessed 15 May 2018
[241] Submission 42, Transport for NSW, p84
[242] NSW Transport, Roads and Maritime Services website, http://www.rms.nsw.gov.au/about/what-we-do/committees/road-freight-industry-council.html, accessed 15 May 2018
[243] Mr Bernard Carlon, Transport for NSW, transcript of evidence 9 April 2018, p59
[244] Submission 21, Ron Finemore Transport, p4
[245] Submission 22, Cement, Concrete and Aggregates Australia, pp2-3
[246] Submission 31, Transport Workers' Union, p12
[247] Submission 9, Amy Gillett Foundation, p9

Recommendation 7

The Committee recommends that the New South Wales Government review its current heavy vehicle safety consultation arrangements to ensure the needs of industry, drivers, workers, stakeholders and the community are being met.

Chapter Three – The road toll

Introduction

3.1 As stated in Chapter One, the Hon Melinda Pavey MP, Minister for Roads, referred an additional term of reference to the Committee and requested that the Committee expand its inquiry into heavy vehicle safety technology to inquire into and report on the holiday road toll in the period 15 December 2017 to 1 January 2018. This is the period during which the NSW Government conducted Operation Safe Arrival, and in which a spike in road fatalities was experienced when compared to the same period in 2016-2017.

3.2 The Committee resolved to expand its inquiry as the Minister requested, and adopted the period 1 December 2017 to 31 January 2018 for its investigation. The Committee adopted this extended period in which to examine the holiday road toll in response to a continuing spike in the road toll, and in particular to several fatal accidents involving heavy vehicles which occurred at the beginning of 2018.

The 2017-18 holiday road toll

Summary

3.3 Transport for NSW made two submissions to the Committee's inquiry on behalf of the NSW Government. The second submission, received 20 March 2018, addressed the inquiry's fifth term of reference, the road toll during the period commencing 1 December 2017 through to 31 January 2018.

3.4 The second submission from Transport for NSW provided a detailed analysis of the holiday road toll in the context of the total number of fatalities for 2017 and factors including economic and population growth, and increasing exposure to risk as trips continue to grow.

3.5 Transport for NSW reported that preliminary results for the period from 1 December 2017 to 31 January 2018 record 80 fatalities, the highest for this period since 2005/06 and a 41 per cent increase in fatalities over the average for the previous four equivalent periods.[248]

3.6 The preliminary analysis showed speed to be the largest contributing factor to fatal crashes (45 per cent), followed by fatigue (23 per cent), and seatbelt non-usage (eight per cent). The contribution of speed and fatigue were both higher in 2017-18 while seatbelt non-usage was lower. Transport for NSW advised their analysis of alcohol as a contributing factor was incomplete.[249]

[248] Submission 42a, Transport for NSW, p4

[249] Submission 42a, Transport for NSW, p11

3.7 Country roads accounted for the majority of fatalities in NSW and country residents accounted for the majority of country road fatalities.[250]

3.8 In summary, Transport for NSW advised that the characteristics of holiday fatalities and fatal crashes experienced between 1 December 2017 and 31 January 2018 were not significantly different to previous holiday periods.[251] While acknowledging the increase in fatalities recorded in the 2017-18 holiday period, Mr Bernard Carlon, Executive Director, Centre for Road Safety at Transport for NSW, said:

> …the characteristics of those fatalities and fatal crashes during the same period were not significantly different from those during the previous December-January periods—that is, they were largely fatalities of vehicle occupants, fatalities on country roads involving run-off-road crashes or opposing head-on crashes appearing on single-lane, undivided carriageways and at high speeds.[252]

Road toll trends

3.9 Transport for NSW provided a detailed analysis of the trend in the road toll, both in overall terms and broken down by a variety of factors, including:

- road user type
- gender and age group
- urbanisation
- behavioural factors
- road user movement
- type of location
- posted speed limits
- type of crash
- residence
- licence type
- vehicle age
- key vehicle role in first impact.

[250] Submission 42a, Transport for NSW, p4
[251] Submission 42a, Transport for NSW, p4
[252] Mr Bernard Carlon, Transport for NSW, transcript of evidence 9 April 2018 pp57-58

3.10 The Committee has not included the full statistical information provided by Transport for NSW in its submission which has been published as Submission 42a on the Committee's website.[253]

3.11 Transport for NSW reported a downward trend in the NSW road toll from its peak of 1,384 fatalities in 1978 to a low of 307 in 2014. It reported the 2017 road toll as 392 fatalities, 12 more than 2016, the third consecutive annual increase, and an increase of 28 per cent over 2014.[254]

3.12 In answer to a question from the Committee at the public hearing on 9 April 2018, Mr Carlon confirmed that the 2017 road toll figure, while higher than previous years, was also the fifth lowest road toll on record.[255]

3.13 With regard to heavy vehicles, Transport for NSW reported a 32 per cent increase in fatalities from heavy vehicle crashes from 2016 to 2017, and that this increase occurred on country roads.[256]

3.14 Cars were involved in 71 per cent of fatal crashes in the holiday period, and heavy vehicles in 13 per cent, slightly down on the previous holiday period (14 per cent) but up on previous 4 year average (10 per cent). The proportion of heavy vehicle crashes during the past five December-January holiday periods was 19 per cent below the involvement of heavy vehicles in crashes for the whole of 2017.[257]

3.15 In heavy vehicle crashes, the heavy vehicle was the key vehicle in 33 per cent of crashes. This was down 64 per cent from the 2016-17 holiday period, but Transport for NSW cautioned that these statistics were based on very small numbers.[258]

3.16 Transport for NSW concluded that by comparing fatalities for the December-January holiday period to fatalities in the whole financial year, holiday period fatalities for the past 17 years were not disproportionately high. The 80 fatalities recorded in the 2017-18 holiday period was the highest since 2005-06, but still generally in line with underlying trend.[259]

[253] Submission 42a, Transport for NSW, https://www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-submission-details.aspx?pk=%2060334 , accessed 15 May 2018
[254] Submission 42a, Transport for NSW, p6
[255] Mr Bernard Carlon, Transport for NSW, transcript of evidence 9 April 2018 p64
[256] Submission 42a, Transport for NSW, p7
[257] Submission 42a, Transport for NSW, p13
[258] Submission 42a, Transport for NSW, p14
[259] Submission 42a, Transport for NSW, p14

Table 3: Holiday period road toll

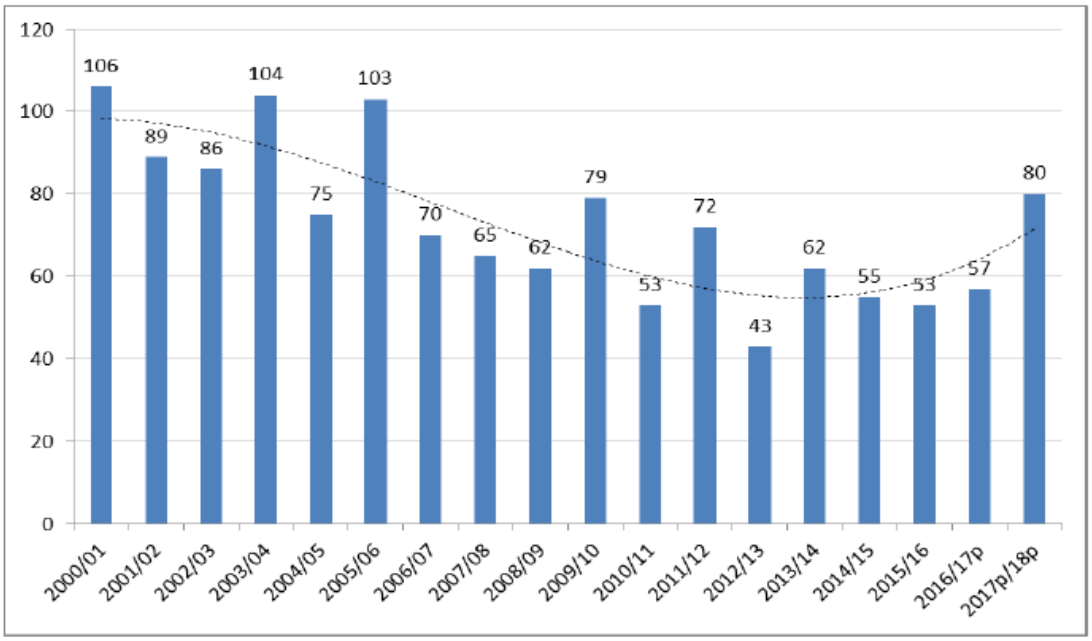

Figure 11: Number of fatalities during Dec00/Jan01 to Dec17p/Jan18p

Managing road safety

3.17 Transport for NSW outlined its approach to managing road safety, and particularly the Safe System approach which guides Road Safety Plan (RSP) 2021. RSP 2021 sets road safety priorities and actions in NSW with the aim of achieving a 30 per cent reduction in road fatalities by 2021 over the 2008-2010 levels.[260]

3.18 Transport for NSW takes a multi-faceted approach to achieving road safety outcomes. The effect of this approach is not to view any particular aspect of road safety in isolation, but as part of a coordinated approach. Many of these aspects were discussed in evidence received by the Committee, including:

- Crash analysis and research
- driver and community education and training
- enforcement of penalties
- road infrastructure improvements
- safer vehicles and technological innovation.[261]

[260] Submission 42a, Transport for NSW, p4

[261] Submission 42a, Transport for NSW, p17

Stakeholders' views on the road toll

Increasing fatalities

3.19 Several stakeholders commented on the increasing number of fatalities on NSW roads, both since 2014 and during the 2017-18 holiday period.

3.20 Natroad (the National Road Transport Association), representing road freight operators, commented that the spike in the NSW road toll in 2017 had not been observed in other states, and queried whether there was a unique problem in NSW.[262]

3.21 Toll Group warned that the NSW spike was being used in other jurisdictions to argue that heavy vehicle safety enhancements were unnecessary. It argued for a longer term examination of the road toll to be undertaken so that the causes of truck crashes and potential solutions could be properly identified.[263]

3.22 The Australian Logistics Council, representing major companies participating in the freight logistics industry, advised that nationally, in 93 per cent of fatal crashes involving a heavy vehicle, the heavy vehicle driver is not found to be at fault.[264] The question of who is at fault in an accident involving a heavy vehicle was a common theme amongst stakeholders when considering where action to address increasing fatalities should be focused.

3.23 Transport and Road Safety (TARS) Research discussed whether a specific analysis of road fatalities in the 2017-18 holiday period would discover different crash characteristics to analyses carried out in the past in response to holiday road tolls. TARS described their participation in reviewing the causes of crashes in the 2000-01 holiday period. This review identified that the highest risk behaviours were not different from previous years, notably speeding, drink driving, fatigue, and non-seatbelt wearing, as well as particular attributes which were characteristic of holiday periods such as high speed rural roads. TARS concluded that a similar analysis for 2017-18 would likely identify the same factors and that an effective response to the increasing road toll might be to target known risk factors.[265]

3.24 When asked at the public hearing on Monday 9 April 2018 why he thought road fatalities were increasing, Mr Ron Finemore AO, Executive Chairman of Ron Finemore Transport told the Committee there was no one single contributing factor:

> …it is a combination of everything coming together. I think that we were riding for something to get a spike because we had done very well beforehand.[266]

[262] Submission 3, Natroad, p5

[263] Submission 39, Toll Group, p8

[264] Submission 24, Australian Logistics Council, p5

[265] Submission 34, Transport and Road Safety (TARS) Research, pp8-9

[266] Mr Ron Finemore AO, Ron Finemore Transport, transcript of evidence 9 April 2018, p21

3.25 Mr Bernard Carlon, Transport for NSW, offered his analysis to the Committee when questioned at the public hearing, as to why fatalities had increased since 2014:

> There is some very clear evidence as to what the underlying drivers were for the increase in fatalities over this period, including…a significant increase in the actual number of heavy vehicles registered in New South Wales that are operating.
>
> ….
>
> The second part is that on high-speed roads in the country areas, there has been a significant increase in both the fatigue-related crashes and the speed-related crashes. To a large degree, approximately 50 per cent, those crashes are actually the other key vehicle—the light vehicle.[267]

3.26 Mr Carlon added further information about other factors which need to be considered when examining the increase in fatalities including significant growth in population and numbers of registered vehicles, and behavioural and vehicle changes in the past 5 to 10 years:

> We see a larger proportion of our fleet are actually now in the dual cab, utility and delivery van, so the light truck segment has increased significantly. If you crash in one of those vehicles the safety features of those vehicles are not as high a standard of the safety features in our passenger vehicles. So part of the underlying increase is a shift in the fleet.
>
> Another is the continued, particularly in regional New South Wales, increase in speed-related fatalities on high-speed roads where the quality of the roads do not match the quality of the roads in metropolitan areas. So there is that increase in population and economic growth and activity, and clearly there is a correlation with the speed environment in which those accidents are happening and an increase in speed-related crashes.[268]

3.27 Mr Carlon also cited an increase in fatigue-related crashes and the prevalence of alcohol-related fatalities on country roads, as well as an increase in crashes where illicit drugs were detected.[269]

The benefits of technology

3.28 As discussed in earlier chapters, most stakeholders held generally positive views about the benefits of heavy vehicle safety technology. Some added a qualification that technologies should not be adopted until proven safe. On the question of whether technology is the answer to increasing fatalities, however, the stakeholders who expressed a view generally saw heavy vehicle safety in a broader context.

3.29 The Transport Workers' Union (TWU) submitted that road safety outcomes which involve heavy vehicles are the result of management and commercial practices in the freight industry. The TWU said that there is no 'silver bullet in technology'

[267] Mr Bernard Carlon, Transport for NSW, transcript of evidence 9 April 2018, pp59-60

[268] Mr Bernard Carlon, Transport for NSW, transcript of evidence 9 April 2018, p64

[269] Mr Bernard Carlon, Transport for NSW, transcript of evidence 9 April 2018, p64

and a decrease in heavy vehicle crashes will only flow from addressing unsafe work practices.[270]

3.30 Natroad was concerned that crash investigation and data collection focus on the immediate causes of accidents relating to unsafe driver behaviour when crashes were actually the result of a complex interaction of multiple factors in the broader transport environment. It criticised Operation Rolling Thunder, which was carried out by NSW road safety authorities during the 2017-18 holiday period partly in response to some notorious heavy vehicle accidents. Natroad submitted that the operation was a 'knee-jerk reaction to a problem that cannot be solved by targeting truck drivers'. It said that comprehensive and objective investigations were essential before conclusions could be drawn about the causes of accidents, recommending that the Australian Transport Safety Bureau (ATSB) be responsible for these investigations.[271]

3.31 Ron Finemore Transport also submitted that a 'two month snapshot' was an insufficient period in which to consider the road toll.[272]

Crash analysis

3.32 The Staysafe Committee considered the quality of crash data reporting and analysis in its report on 'Driver education, training and road safety', tabled in September 2017. The Committee found that the crash data collected by Transport for NSW was comprehensive, thorough and robust, but could be improved by collecting additional data and better data sharing across government and non-government agencies. The Committee recommended that Transport for NSW report on how it could improve crash data collection and analysis.[273]

3.33 Like Natroad, quoted above, a number of stakeholders who submitted to this inquiry argued for improved crash analysis and data collection before the causes of crashes and the increasing road toll could be properly understood. Natroad proposed that a dedicated, independent authority such as the Australian Transport Safety Bureau (ATSB) be assigned to investigate all serious truck accidents, and the findings reported publicly.[274]

3.34 The Australian Trucking Association (ATA) submitted that current crash investigation techniques are not attuned to investigating the causes of accidents where technology and software are involved. Like Natroad, the ATA nominated the ATSB as an agency independent of transport regulators, policy makers and service providers , which could provide expert and independent crash investigation. The ATA recommended to the Committee that the NSW

[270] Submission 31, Transport Workers' Union of NSW, p2
[271] Submission 3, Natroad, p5
[272] Submission 21, Ron Finemore Transport, p7
[273] Report 3/56, September 2017, Staysafe Committee report on Driver education, training and road safety https://www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-details.aspx?activetab=Reports&pk=2422,
accessed 15 May 2018
[274] Submission 3, Natroad, p5

Government seek the agreement of the Australian Government to extend the jurisdiction of the ATSB to NSW heavy vehicle crashes.[275]

3.35 Similarly, the Livestock, Bulk and Rural Carriers Association nominated the ATSB as their preferred crash investigator on the grounds of independence and objectivity.[276]

3.36 Professor Ann Williamson, Director, Transport and Road Safety (TARS) Research queried current crash investigation techniques when answering the Committee's questions at the public hearing on Monday 9 April 2018. She questioned several aspects of current investigations including key vehicle determination and suggested that current road crash investigations are very limited:

> They only look backwards from the moment of the crash for a very short period; they do not look at the broader circumstances. I think there is a huge opportunity to do more work.[277]

Enforcement and compliance

3.37 Stakeholders noted the imminent introduction in 2018 of stronger requirements under the Heavy Vehicle National Law (HVNL) and implications for heavy vehicle drivers put under pressure by operators and customers to make unsafe driving decisions in order to meet deadlines.[278]

3.38 Improving compliance, however, needs to be seen in the context of accountability for all parties. Natroad submitted that a significant proportion of enforcement actions focus on minor technical breaches which are not critical to ensuring safety.[279]

3.39 This view of enforcement was supported by Ron Finemore Transport (RFT) which argued for a compliance regime focused on the most effective use of limited resources. RFT wrote with regard to recent enforcement activities that 'nit-picking enforcement…creates anxiety and tension on the road' and does not lead to broader compliance and getter outcomes.[280]

3.40 The Waste Contractors and Recyclers Association of NSW brought to the Committee's attention interstate differences in the management and licensing of waste disposal resulting in a significant number of unnecessary long haul journeys by heavy vehicles arguably not fit for this task. It advised that this caused a risk to public safety and invited the Committee to consider this issue in chain of responsibility terms.[281]

3.41 Stakeholders had differing views on the role of speed limits and speed enforcement in achieving heavy vehicle safety. While some authors submitted

[275] Submission 23, Australian Trucking Association, p9
[276] Submission 28, Livestock, Bulk and Rural Carriers Association, p7
[277] Professor Ann Williamson, Transport and Road Safety (TARS) Research, transcript of evidence 9 April 2018, p20
[278] Submission 3, Natroad, p5
[279] Submission 3, Natroad, p5
[280] Submission 21, Ron Finemore Transport, p5
[281] Submission 7, Waste Contractors and Recyclers Association of NSW, p5

that lower heavy vehicle speed limits would improve reaction times and safety margins for all drivers,[282] others submitted that lower speed limits would exacerbate fatigue and driver frustration.[283]

3.42 Transurban submitted that point-to-point cameras are associated with high levels of speed limit compliance, and encouraged the NSW Government to consider using the cameras to capture all speeding behaviour, not just heavy vehicles.[284]

3.43 The Pedestrian Council of Australia submitted a detailed analysis of the value of point-to-point cameras in improving compliance with speed limits.[285]

Operation Rolling Thunder

3.44 As discussed above, the most recent enforcement operation which attracted the attention of stakeholders was Operation Rolling Thunder, conducted by NSW authorities during the 2017-18 holiday period in response to several notable heavy vehicle accidents.

3.45 Assistant Commissioner Michael Corboy, NSW Police Force Traffic and Highway Patrol Command, described the operation to the Committee at the public hearing:

> …we had three incidents in two days that cost the lives of five people. As with all these things…the top end of the industry has newer trucks and a whole range of other things, but there are significant differences between those high-end fleets, primary producers and also the truck and dog industry around the metropolitan area, which has different rules.
>
> I contacted my colleagues in the other eastern States, who were quite willing to come on board with an operation basically to see what was happening across eastern Australia in relation to compliance around the trucking industry generally. My interest was that we needed to actually see what the compliance rate was on a particular day, in and out of New South Wales. We ran that operation over 12 one-day periods. We did not pre-warn anyone it was going to happen.[286]

3.46 Mr Corboy went on to inform the Committee about the results of the operation:

> In relation to the 5,000-odd trucks that were stopped around Australia, there were 2,000 defects, which have been described as minor defects, and there were a number of higher ones. However, that 26 drivers had returned a positive drug test was a concern for us. But in the comments I made at the time, quite publicly, we were not targeting those groups that did the right thing; we were targeting those people, those industries and those trucking organisations and individual operators who were running unroadworthy trucks, running unregistered trucks, running drivers who were fatigued and not complying with the systems.[287]

[282] Submission 2, Mr Col and Ms Jan Easterbrook, p1
[283] Submission 30, Welsh Freight Services Pty Ltd, p3
[284] Submission 25, Transurban, p11
[285] Submission 44, Pedestrian Council of Australia Limited, p1
[286] Assistant Commissioner Michael Corboy, NSW Police Force, transcript of evidence 9 April 2018, p67
[287] Assistant Commissioner Michael Corboy, NSW Police Force, transcript of evidence 9 April 2018, p68

3.47 Mr Corboy told the Committee that Operation Rolling Thunder gave the New South Wales and interstate authorities good information about which operators were meeting their obligations and which were not. He also commented on the operation for its public education value:

> I was quite pleased with the operation, which not only raised the profile of the enforcement but I think also raised awareness across the eastern seaboard around our tolerance to heavy vehicle crashes.[288]

3.48 Mr Carlon endorsed Operation Rolling Thunder for its deterrent effect:

> **…**more than 40 per cent of our fatal crashes involve a driver who is licensed interstate. Around 23 per cent of all of our casualty crashes involve a driver that has a licence from interstate. Operations like Rolling Thunder that attempt to address us as a through State are absolutely critical in getting a deterrent effect out there in relation to that fact—that we do have a significant number of interstate licensed drivers involved in our fatal crashes.[289]

3.49 Most stakeholders who commented on the operation were negative.

3.50 Road Freight NSW submitted that Operation Rolling Thunder did little to instil confidence in the trucking community as it was conducted without an understanding of the causes of the January 2018 incidents. It suggested that a better approach would have been to focus on industry education and compliance in a less adversarial way.[290]

3.51 One confidential submission gave a detailed critique of Operation Rolling Thunder, concluding that it was a knee jerk response and the real issue for heavy vehicle safety is the ease with which a driver heavy licence can be obtained.[291]

3.52 Mr Steve Bent concluded that Operation Rolling Thunder was a revenue raising exercise, and that poor heavy vehicle awareness by other road users should be addressed.[292]

3.53 The Transport Workers' Union gave its support to enforcement actions like Operation Rolling Thunder, but drew the Committee's attention again to the Union's view that economic factors are the chief cause of poor heavy vehicle safety.[293]

Driver distraction

3.54 Ron Finemore Transport cited the behaviour of other road users as a particular problem on country roads. It gave its support to recent campaigns addressing

[288] Assistant Commissioner Michael Corboy, NSW Police Force, transcript of evidence 9 April 2018, p68
[289] Mr Bernard Carlon, Transport for NSW, transcript of evidence 9 April 2018, p68
[290] Submission 38, Road Freight NSW and Teletrac Navman, p7
[291] Submission 13, Confidential, p3
[292] Submission 19, Mr Steve Bent, p1
[293] Submission 31, Transport Workers' Union, p6

safe driving on country roads, and proposed harsher penalties for mobile phone use while driving.[294]

3.55 In answer to a question from the Committee, Mr Ron Finemore AO suggested that mobile phone use by both heavy vehicle and other drivers is a serious issue. He advised that Ron Finemore Transport uses blocking technology and messages to its drivers to address mobile phone use while driving.[295]

3.56 Similarly Professor Ann Williamson, Director, Transport and Road Safety (TARS) Research suggested that driver distraction is probably under-reported and needs to be reassessed.[296]

3.57 Mr Bernard Carlon, Transport for NSW, referred to vehicle design as a way to guard against in-vehicle distraction. He advised that updating the regulatory framework to account for new devices was an ongoing task, and noted new road rules which addressed mobile phone use in cars.[297]

Road conditions

3.58 As discussed above, Transport for NSW provided to the Committee statistics which show that country roads account for the majority of fatalities on NSW roads.[298]

3.59 The Transport Workers' Union submitted that many roads are not designed to accommodate the growth in road freight traffic being experienced.[299]

3.60 Transurban offered its motorway network as evidence of a purpose built network for heavy vehicles which offers safety advantages through safe design as well as reduced travel time.[300]

3.61 The Australian Trucking Association advised that investing in better roads is critical for improving road safety, and proposed that crash investigation be better used to guide road investment.[301]

3.62 The Livestock, Bulk and Rural Carriers Association called on local councils to deliver better road infrastructure.[302]

Roadworks and signage

3.63 Heavy vehicle accidents during the 2017-18 holiday period encouraged scrutiny of the management of roadworks and signage. The poor visibility of signage,[303] and the practice of leaving temporary signs in place for extended periods,

[294] Submission 21, Ron Finemore Transport, p6
[295] Mr Ron Finemore AO, Ron Finemore Transport, transcript of evidence 9 April 2018, p14
[296] Professor Ann Williamson, Transport and Road Safety (TARS) Research, transcript of evidence 9 April 2018, p21
[297] Mr Bernard Carlon, Transport for NSW, transcript of evidence 9 April 2018, p66
[298] Submission 42a, Transport for NSW, p4
[299] Submission 31, Transport Workers' Union, p5
[300] Submission 25, Transurban, p5
[301] Submission 23, Australian Trucking Association, p10
[302] Submission 28, Livestock, Bulk and Rural Carriers Association, p4
[303] Submission 4, Mrs Gretchen Sleeman, p1

resulting in driver frustration and complacency, was raised by some stakeholders.[304] The need to remove signage as soon as roadworks were completed was emphasised.[305]

Driver training

3.64 The Staysafe Committee in its report on 'Driver training, education and road safety', tabled in September 2017. While this report did not specifically address heavy vehicle issues, it made 30 recommendations for improving the training and education of drivers of all ages and types.[306]

3.65 As discussed above, many stakeholders discussed the incidence of accidents involving heavy vehicles where the at-fault driver was not the heavy vehicle driver. Some concluded that light vehicle drivers needed more training about driving around heavy vehicles.

3.66 Welsh Freight Services Pty Ltd submitted that all road users need better education, and that the quality of driver trainers needed to be reviewed.[307]

3.67 Mr Steve Bent called for an advertising campaign to raise driver awareness about how to drive around heavy vehicles.[308]

3.68 Cement, Concrete and Aggregates Australia (CCAA) quoted 2015 statistics that in fatal collisions involving a heavy vehicle and a car, the third party was at fault 93 per cent of the time. CCAA advocated for novice drivers to receive road sharing training in order for drivers to better understand the specific needs of heavy vehicle drivers.[309]

3.69 CCAA also argued for stronger licensing standards for heavy vehicle drivers. They advised their members had observed a decreasing quality amongst newly licensed heavy vehicle drivers and that in response, members had provided additional training and induction for drivers they employed. CCAA proposed that Roads and Maritime Services review the licensing requirements for heavy vehicle drivers and the accreditation requirements for training providers with a view to ensuring better training in fatigue management, log book reporting, load management, and defensive driving techniques.[310]

3.70 The Australian Trucking Association (ATA) also reported a highly variable quality of training and assessment of truck drivers, and called for training reviews in areas similar to those identified by CCAA. ATA also noted that Austroads had recently completed a review of the National Heavy Vehicle Competency

[304] Submission 30, Welsh Freight Services Pty Ltd, p3
[305] Submission 32, UNSW Canberra and Macquarie University, p6
[306] Report 3/56, September 2017, Staysafe Committee report on Driver education, training and road safety, https://www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-details.aspx?activetab=Reports&pk=2422,
accessed 15 May 2018
[307] Submission 30, Welsh Freight Services Pty Ltd, p2
[308] Submission 19, Mr Steve Bent, p1
[309] Submission 22, Cement, Concrete and Aggregates Australia, p4
[310] Submission 22, Cement, Concrete and Aggregates Australia, p5

Standards which had not yet been released.[311] In its submission, Austroads advised that the review was considering the need for raised driver training standards, and national consistency in assessor and instructor eligibility, and was expected to be released in the second half of 2018.[312]

3.71 The Livestock, Bulk and Rural Carriers Association also lent their support to road sharing training for car drivers, including in-school training for pre-drivers.[313] Cement, Concrete and Aggregates Australia advised that its members provide road safety education in schools close to quarry sites, focusing on risk minimisation in and around heavy vehicles.[314]

Public information campaigns

3.72 In addition to driver training, many stakeholders called for public education campaigns to enhance driver knowledge of heavy vehicles and their needs, via the print, broadcast and social media.

3.73 Transport for NSW listed a number of road safety advertising and community campaigns addressing heavy vehicle safety in its submission, including the Be Truck Aware campaign, the use of variable message signs, online safety information, and work undertaken through the Local Government Road Safety Program.[315]

3.74 The Livestock, Bulk and Rural Carriers Association proposed a media campaign designed not only to raise awareness, but also to counter negative perceptions of the heavy vehicle industry by publicising the at-fault statistics referred to above.[316]

3.75 The Australian Trucking Association gave its support to the 'Be Truck Aware'[317] campaign being conducted by the Centre for Road Safety within Transport for NSW. Mr Bill McKinley, the Association's Chief of Staff, appeared at the public hearing on Monday 9 April 2018, where he described the campaign as excellent. However, he endorsed 'hands-on experience' as superior to media campaigning when reaching novice drivers:

> The key is to actually have a truck for learner drivers to look over, to sit in the cab and understand, "Yes, if I am immediately to the driver's left, the driver cannot see me." There is no substitute for that hands-on experience.[318]

Industry-led safety initiatives

3.76 Several stakeholders noted industry-led initiatives to address road safety both inside their businesses and to the wider community. These included Cement,

[311] Submission 23, Australian Trucking Association, p13
[312] Submission 20, Austroads, p2
[313] Submission 28, Livestock, Bulk and Rural Carriers Association, p8
[314] Submission 22, Cement, Concrete and Aggregates Australia, p4
[315] Submission 42, Transport for NSW, p77
[316] Submission 28, Livestock, Bulk and Rural Carriers Association, p9
[317] Transport for NSW, Centre for Road Safety, http://roadsafety.transport.nsw.gov.au/campaigns/be-truck-aware/index.html, accessed 15 May 2018
[318] Mr Bill McKinley, Australian Trucking Association, transcript of evidence 9 April 2018 p8

Concrete and Aggregates Australia who advised of extensive industry education programs as well as programs delivered to high school students on truck safety,[319] and Linfox Logistics which works with road safety agencies to educate its customers.[320]

Vulnerable road users

3.77 The Amy Gillett Foundation advised the Committee of its research relationship with Monash University and Toll Logistics. As part of this relationship, the partners examined cycling fatalities and subsequent coronial recommendations. With regard to heavy vehicle safety technology, the Foundation found coronial recommendations focused on visibility and maximising a driver's capacity to see road users outside the cabin. The Foundation proposed that all new heavy vehicle technologies be reviewed by vulnerable road user experts to reduce safety risks to cyclists and pedestrians.[321]

Committee Comment

3.78 The Committee agrees that the recent upturn in road fatalities is disturbing, especially given the long term trend in fatalities being consistently down until the low point in 2014.

3.79 We also note with concern the evidence that the 2017-18 holiday road toll is the highest since 2005-06.

3.80 We agree with the several stakeholders who cautioned drawing early conclusions about both the upturn in fatalities overall and the upturn for the holiday period. These upturns have occurred over short periods and may not be evidence of changes to longer term trends. The fatality figures are still at historical lows and arguably remain within trend. In our view it would be a mistake to make significant changes to road safety strategies and approaches based on such limited data.

3.81 Perhaps, as one witness put it, the recent spike in fatalities contrasts to how well New South Wales was performing beforehand.

3.82 We do not contemplate a 'do-nothing' response. We endorse the current road safety strategies and approaches, including the special operations and campaigns during the holiday period.

3.83 We draw the NSW authorities' attention to the stakeholders' critical comments concerning Operation Rolling Thunder. The rationale for the operation was sound, as was the urgency given the public response to the incidents in early 2018. There is a lesson here for how such an operation is explained to the community, and particularly to the stakeholders likely to be most affected. Not responding to these incidents in this way, however, would have been inconsistent not only with road safety management generally, but would have been a lost opportunity to work with the neighbouring jurisdictions.

[319] Submission 22, Cement, Concrete and Aggregates Australia, p4
[320] Submission 37, Linfox Logistics, p2
[321] Submission 9, Amy Gillett Foundation, p9

3.84 The evidence of road safety researchers is particularly interesting with regard to the spike in fatalities. They report no reason to expect that the causes of fatalities in the most recent holiday period will be any different to previous periods. This evidence is a good reason to be cautious of making any precipitate changes to the current road safety strategies and approaches.

3.85 Regarding driver training and education, we draw attention to the recommendations of our previous inquiry into this subject. While our recommendations did not address the heavy vehicle industry in particular, we believe that our recommendations point towards dealing with driver skill and knowledge deficits in a rational and incremental way without making radical changes which could affect livelihoods and the reasonable expectations of drivers and all road users.

3.86 We wish to comment briefly on five aspects of the evidence reported above, namely the statistics regarding country road fatalities, calls for campaigns about driving safely around trucks and road sharing, driver distraction, management of roadworks, and crash investigation.

3.87 Country road fatalities remain stubbornly high. This fact is known to all who take an interest in road safety and is reflected in current road safety efforts. We endorse the focus on country roads taken by NSW authorities and stakeholders generally.

3.88 Heavy vehicle industry stakeholders were supportive of past and current efforts to communicate with road users about safe driving around trucks. Given both the statistic on truck safety, and the support for relevant campaigning, we endorse this type of campaigning and suggest it be earmarked for a continuation, of not a ramping, up in the road safety campaign program.

3.89 Driver and road user distraction, especially relating to mobile phone use, is a perennial issue for the Staysafe Committee. While it was not a specific matter for this inquiry, its being raised by witnesses again in relation to the holiday road toll must be noted.

3.90 We also note the references by stakeholders to the management of roadworks. While we do not wish to comment in any detail about individual road accidents, we note that one of the tragic incidents involving a heavy vehicle which took place during the 2017-18 holiday period occurred on a stretch of country road undergoing roadworks. The evidence from stakeholders about managing roadworks and driver frustrations is noteworthy.

3.91 Finally, regarding the evidence for changing responsibility for crash investigation, we believe that issue should be the subject of ongoing consultation with industry, especially in light of developments in telematics and data gathering.

Finding 10

The Committee finds that while the recent spike in the road toll is extremely concerning, fatalities in 2017 are the fifth lowest on record, and are not a reason to conclude that current road safety strategies are unfit for purpose. However, the New South Wales Government must continue to invest in road safety.

Recommendation 8

The Committee recommends that the NSW Government review its current road safety strategy in response to initial indications of causes of the spike in fatalities, by increasing the focus on:

- **safe driving on country roads**
- **driving safely around heavy vehicles, truck awareness and road sharing**
- **driver distraction**
- **management of roadworks.**

Appendix One – Terms of Reference

The Committee will inquire into and report on heavy vehicle safety and the potential for technology to improve road safety with specific reference to:

a) The management of heavy vehicle driver fatigue and other safety risks through in-vehicle technologies, including benefits, costs, availability and adoption by industry

b) The development of connected and automated vehicle technologies specific for the heavy vehicle industry and opportunities for further development in this space

c) The role of compliance and enforcement in maintaining the safety of heavy vehicles on our roads

d) Heavy vehicle safety strategies implemented in other jurisdictions, both domestically and internationally

e) The road toll during the period commencing 1 December 2017 through to 31 January 2018.

Appendix Two – Conduct of Inquiry

Terms of Reference
On 17 October 2017, the Committee received a letter from the Hon Melinda Pavey MP, Minister for Roads, Maritime and Freight requesting the Staysafe Committee to inquire into and report on heavy vehicle safety and the potential for technology to improve road safety.

On 18 October 2017 the Committee resolved to conduct the inquiry with the specific terms of reference provided by the Minister. These are set out in full at Appendix One.

On 17 November 2017, the Committee resolved to advertise the inquiry on its website and to issue a media release publicising the inquiry and inviting submissions by Monday 5 February 2018. In addition, the Chair wrote to around 115 organisations notifying the inquiry and inviting a range of relevant organisations to make submissions.

On 5 January 2018 the Minister wrote again to the Committee requesting the adoption of an additional term of reference specifying that the Committee report on the holiday road toll. In particular, the Minister requested that the Committee examine the period of operation of the joint NSW Police and Transport for NSW road safety campaign, 'Operation Safe Arrival', from 15 December 2017 to 1 January 2018. In her letter, the Minister informed the Committee that she had requested the Centre for Road Safety to prepare a report by Monday 29 January 2018 on the road fatalities which had occurred during the period of the holiday road safety campaign. On 17 January 2018 the Committee met to consider the Minister's request.

The Committee resolved to adopt the additional term of reference and, in order to more fully inform itself about the high number of road fatalities, to amend it by extending the period for examining the road toll from 1 December 2017 to 31 January 2018. The Committee further resolved to issue a second media release, published on 18 January 2018, notifying the expansion of the inquiry and extending the deadline for receipt of submissions from Monday 5 February 2018 to Sunday 25 February 2018. In addition, the Committee authorised the secretariat to promptly inform stakeholders of the additional term of reference by email.

Submissions
The Committee received 44 submissions. A full list is included in Appendix Three. The Committee resolved to publish the majority of the submissions. Two submissions were made confidential at the request of the authors and the Committee resolved that two further submissions should be published in part only. The published submissions can be viewed on the Committee's webpage at:
https://www.parliament.nsw.gov.au/committees/inquiries/Pages/inquiry-details.aspx?pk=2467#tab-submissions

An extension of time was granted to Transport for NSW to provide its submission in two parts. The first part which addressed the original terms of reference, 'a' to 'd', was provided by Transport for NSW on 12 March 2018. The second part, addressing the additional term of reference 'e' was provided on 20 March 2018.

Committee Briefings and Visit of Inspection

On 16 November 2017 the Committee was briefed on heavy vehicle technology and road safety issues by representatives of Transport for NSW and Roads and Maritime Services. On 14 February 2018, the Committee was briefed on the subject of heavy vehicle safety by Chief Inspector Phillip Brooks, Stakeholder Manager, Traffic and Highway Patrol Command, NSW Police Force.

On 12 March 2018 Committee Members inspected safety and driver assist technology installed in heavy vehicles at a Toll Group workshop in Western Sydney. In addition, the Committee examined how Roads and Maritime Services oversights the roadworthiness of heavy vehicles at its inspection station at Wetherill Park.

Public Hearing

On 6 April 2018, the Committee issued a third media release, announcing a public hearing to be held at Parliament House on Monday 9 April 2018. During the proceedings the Committee heard evidence from fourteen witnesses, representing heavy vehicle operators, researchers and the NSW Government, with regard to heavy vehicle safety and how technology can be used to improve it. A full transcript of the public hearing and responses to questions taken on notice by witnesses are also available on the Committee's website.

Appendix Three – Submissions

1	Mr Peter Kleinig
2	Mr Col Easterbrook
3	Natroad
4	Mrs Gretchen Sleeman
5	J.J Richards & Sons Pty Ltd
6	National Transport Commission
7	Waste Contractors & Recyclers Association of NSW
8	Mobileye, an Intel Company
9	Amy Gillett Foundation
10	Mr Chris Kropp
11	Confidential submission
12	Mr Kevin Forbes
13	Confidential submission
14	Mr Scott Jose
15	Mr Dan Bedford
16	Mr James Lea
17	Mr Mark Reynolds
18	Mr Greg Bassett
19	Mr Steve Bent
20	Austroads

21	Ron Finemore Transport
22	Cement Concrete and Aggregates Australia
23	Australian Trucking Association
24	Australian Logistics Council
25	Transurban
26	Seeing Machines Limited
27	Mr Andrew Dell
28	Livestock, Bulk and Rural Carriers Association of NSW
29	Mr Rod Hannifey
30	Ms Maggie Welsh
31	Transport Workers' Union of NSW
32	UNSW Canberra and Macquarie University
33	Grace Cheng
34	Transport and Road Safety (TARS) Research
35	Truck Industry Council
36	Transport Certification Australia
37	Linfox Logistics
38	Road Freight NSW and Teletrac Navman
39	Toll Group
40	National Heavy Vehicle Regulator
41	Local Government NSW
42	Transport for NSW

42a	Transport for NSW
43	TyreSafe Australia
44	Pedestrian Council of Australia Limited

Appendix Four – Witnesses

9 April 2018, Jubilee Room

Witness	Organisation
Mr Bill McKinley	Chief of Staff Australian Trucking Association
Mr Ron Finemore AO	Executive Chairman Ron Finemore Transport
Professor Ann Williamson	Professor and Director Transport and Road Safety (TARS) Research Centre, UNSW
Dr Rena Friswell	Research Fellow Transport and Road Safety (TARS) Research Centre, UNSW
Mr Michael Kilgariff	Chief Executive Officer Australian Logistics Council
Mr Kerry Corke	Policy Advisor Australian Logistics Council
Mr Royce Christie	Group General Manager, Government Relations Toll Group
Dr Sharron O'Neill	Senior Lecturer, UNSW Canberra
Associate Professor Louise Thornthwaite	Associate Professor, Department of Management, Macquarie University
Mr Paul Pulver	Policy Representative Livestock, Bulk & Rural Carriers Association
Mr Bernard Carlon	Executive Director, Centre for Road Safety Transport for NSW
Ms Melinda Bailey	Executive Director, Compliance and Regulatory Services, Roads and Maritime Services
Mr Philip Bullock	Acting Executive Director, Freight Industry Branch, Transport for NSW
Assistant Commissioner Michael Corboy	Commander, Traffic and Highway Patrol, NSW Police Force

Appendix Five – Extracts from Minutes

MINUTES OF MEETING No 20
18 October 2017
Room 1254, Parliament House

Members present
Mr Greg Aplin MP (Chair), The Hon Scott Farlow MLC (Deputy Chair), The Hon Thomas George MP, Mr Nick Lalich MP

Officers in attendance
Simon Johnston, David Hale, Jacqueline Isles, Christopher Herbert

The Chair opened the meeting at 1.12 pm.

1. **Apologies**
   Mr Adam Crouch MP, Dr Mehreen Faruqi MLC, The Hon Daniel Mookhey MLC, Ms Eleni Petinos MP

2. **Confirmation of minutes**
   Resolved, on the motion of Mr Farlow: That the minutes of Meeting No 19, held on 20 September 2017, be confirmed.

3. **Inquiry into heavy vehicle safety and use of technology to improve road safety**
   The Chair referred to the Minister's letter, received 17 October 2017 requesting that the Committee inquire into heavy vehicle safety as previously circulated.

   Resolved on the motion of Mr Farlow, seconded by Mr Lalich: That the Committee adopts terms of reference for an *Inquiry into heavy vehicle safety and use of technology to improve road safety*, as follows:

   The Committee will inquire into and report on heavy vehicle safety and the potential for technology to improve road safety with specific reference to:
   a) The management of heavy vehicle driver fatigue and other safety risks through in-vehicle technologies, including benefits, costs, availability and adoption by industry.
   b) The development of connected and automated vehicle technologies specific for the heavy vehicle industry and opportunities for further development in this space.
   c) The role of compliance and enforcement in maintaining the safety of heavy vehicles on our roads.
   d) Heavy vehicle safety strategies implemented in other jurisdictions, both domestically and internationally.

4. ***

5. **Next meeting**
   The Chair closed the meeting at 1.15 pm to reconvene on Wednesday 15 November at 1.00 pm in Room 1254, Parliament House.

MINUTES OF MEETING No 21
16 November 2017
Room 1254, Parliament House

Members present
Mr Greg Aplin MP (Chair), Mr Adam Crouch MP, The Hon Thomas George MP, Mr Nick Lalich MP, The Hon Daniel Mookhey MLC, Ms Eleni Petinos MP

Officers in attendance
David Hale, Jacqueline Isles, Christopher Herbert

The Chair opened the meeting at 1.10 pm.

1. **Apologies**
   The Hon Scott Farlow MLC (Deputy Chair), Dr Mehreen Faruqi MLC

2. **Confirmation of minutes**
   Resolved, on the motion of Mr Crouch: That the minutes of Meeting No 20, held on 18 October 2017, be confirmed.

3. *******

4. **Conduct of the Inquiry into heavy vehicle safety and use of technology to improve road safety**
   The Chair referred to the draft stakeholder list and proposed inquiry timeline, already circulated.

   Resolved, on the motion of Mr Mookhey: That the Committee select stakeholders to be invited to make a submission to the inquiry.

   Resolved, on the motion of Mr Crouch: That the Chair issue a press release publicising the inquiry and inviting submissions to the inquiry to be submitted by Monday 5 February 2018.

   Resolved, on the motion of Mr Lalich: That the Committee make a site visit in early 2018 to inspect the practical application of heavy vehicle safety technology.

5. **Presentation from Transport for NSW**
   The following representatives of Transport for NSW and Roads and Maritime Services were admitted:
   - Mr Bernard Carlon, Executive Director, Centres for Road Safety and Maritime Safety, TfNSW
   - Mr Damian Colclough, Executive Director, Freight Industry, TfNSW
   - Ms Melinda Bailey, Executive Director, Compliance and Regulatory Services, RMS
   - Ms Tasha Prabhakar, Director, Freight Policy and Government Relations, TfNSW
   - Mr Evan Walker, Director, Smart Innovation Centre, TfNSW

   Discussion ensued.

   The presentation concluded, the representatives withdrew.

6. Next meeting

The Chair closed the meeting at 2.00 pm to reconvene on Wednesday 14 February 2018 at 1.00 pm in Room 1254.

MINUTES OF MEETING No 22
17 January 2018
Room 813 Parliament House

Members present (by teleconference)
Mr Greg Aplin MP (Chair), The Hon Scott Farlow MLC (Deputy Chair), Mr Adam Crouch MP, Dr Mehreen Faruqi MLC, The Hon Thomas George MP, The Hon Daniel Mookhey MLC, Ms Eleni Petinos MP.

Officers in attendance
Elaine Schofield, Jacqueline Isles, Christopher Herbert

The Chair opened the meeting at 2.30 pm.

1. Apologies

Mr Nick Lalich MP

Conduct of the Inquiry into heavy vehicle safety and use of technology to improve road safety

2. Minister's request to expand the inquiry

The Committee considered the request of the Minister to adopt an additional Term of Reference:
'To inquire into and report on the holiday road toll during the period commencing 15th December 2017 through to the 1st of January 2018.'

The Committee deliberated and agreed to amend the Minister's proposal by removing the word 'holiday' from before 'road toll' and by extending the period for examining the road toll:

Resolved, on the motion of Ms Petinos, seconded by Mr George: That the Committee adopt an additional Term of Reference as item e) the road toll during the period commencing 1 December 2017 through to 31 January 2018.

The Committee considered a motion proposed by Mr Mookhey, seconded by Dr Faruqi: That the Committee adopt an additional Term of Reference:
'f) The role of driver remuneration in maintaining the safety of heavy vehicles on our roads'.

Discussion ensued. Question put – That the motion be agreed to –
The Committee divided.
Ayes –2 – Mr Mookhey and Dr Faruqi
Noes – 4 - Mr Aplin, Mr Farlow, Mr Crouch, Mr George, Ms Petinos

Question negatived.

3. Response to the Minister

Resolved, on the motion of Mr Crouch: That the Committee write to the Minister confirming that the additional Term of Reference has been adopted, as amended, and notified publicly on the inquiry webpage and by media release.

4. Media Release

Resolved on the motion of Mr George: That the Chair issue a media release notifying the expansion of the inquiry with an additional term of reference as item e) the road toll during the period commencing 1 December 2017 through to 31 January 2018.

5. Stakeholders

Resolved on the motion of Ms Petinos: That the Committee authorise the secretariat to inform stakeholders of the additional term of reference by email as soon as possible.

6. Extension of the timeframe for submissions

Resolved on the motion of Dr Faruqi: That the Committee extend the deadline for receipt of submissions from Monday 5 February to Sunday 25 February 2018.

7. Next Meeting

To be advised.

The meeting closed at 2.57 pm

MINUTES OF MEETING No 23
14 February 2018
Room 1254, Parliament House

Members present
Mr Greg Aplin MP (Chair), Dr Mehreen Faruqi MLC, The Hon Thomas George MP, The Hon Daniel Mookhey MLC, Ms Eleni Petinos MP

Officers in attendance
David Hale, Jacqueline Isles, Christopher Herbert

The Chair opened the meeting at 1.02 pm.

1. Apologies
Mr Adam Crouch MP, Mr Nick Lalich MP, The Hon. Scott Farlow MLC

2. Confirmation of minutes
Resolved, on the motion of Ms Petinos, seconded Mr George: That the minutes of Meeting No 21, held on 16 November 2017, and Meeting No 22, held on 17 January 2018, be confirmed.

3. ***

4. ***

5. Inquiry into heavy vehicle safety and use of technology to improve road safety

5.1 Inquiry timeline: site visit and public hearing

The Chair referred to the draft inquiry timeline, previously circulated. Discussion ensued.

Resolved, on the motion of Dr Faruqi, seconded Mr George: That the Committee conduct a site visit on Monday 12 March 2018. Dr Faruqi advised that she would be an apology.

Resolved, on the motion of Mr George, seconded by Mr Mookhey: That the Committee conduct a public hearing at Parliament House on Monday 9 April 2018 to hear evidence for its inquiry.

5.2 Submissions

The Chair referred to the submission publication list including publication recommendations, for submissions received up to 9 February 2018, previously circulated. He noted that the closing date for submissions is Sunday 25 February 2018.

Resolved, on the motion of Mr George, seconded by Ms Petinos: That the Committee publish submissions numbered 1 to 6, on its website in full with the redaction of all signatures and personal contact details.

The Chair tabled submission number 7, and asked members to consider whether redaction of some statements may be required before publication. Discussion ensued.

Resolved, on the motion of Mr Mookhey, seconded Mr George: That the Committee publish submission number 7, with redaction of the second paragraph on page 3, from the third sentence commencing 'Prior to…' until the end of the paragraph.

6. Presentation by NSW Police Force

The Committee was briefed on the subject of heavy vehicle safety by Chief Inspector Phillip Brooks, Stakeholder Manager, NSW Police Force, Traffic and Highway Patrol Command.

The Chair thanked Chief Inspector Brooks for his presentation.

7. ***

8. Next meeting

The Chair closed the meeting at 1.44 pm. The next meeting will be held on Wednesday 14 March 2018 at 1.00pm in Room 1254.

MINUTES OF MEETING 24
14 March 2018
Room 1254, Parliament House

Members present
Mr Greg Aplin MP (Chair), Mr Adam Crouch MP, Dr Mehreen Faruqi MLC, The Hon Thomas George MP, Ms Eleni Petinos MP

Officers in attendance
David Hale, Leon Last, Jacqueline Isles, Christopher Herbert

The Chair opened the meeting at 1.02 pm.

1. Apologies
The Hon Scott Farlow MLC, Mr Nick Lalich MP, The Hon Daniel Mookhey MLC

2. Confirmation of minutes
Resolved, on the motion of Mr Crouch, seconded Ms Petinos: That the minutes of Meeting 23, held on 14 February 2018 be confirmed.

3. ***

4. Inquiry into heavy vehicle safety and use of technology to improve road safety

4.1 Chair's report – site visit
The Chair reported on a visit to the Tollgroup workshop at Eastern Creek and the RMS inspection station at Wetherill Park, undertaken by himself, the Deputy Chair and two secretariat staff on Monday 12 March 2018. Discussion ensued.

Resolved, on the motion of Mr George, seconded by Ms Petinos: That the Chair's report be noted.

4.2 Submissions
The Chair referred to the submission publication list including publication recommendations, for submissions received up to 14 March 2018, previously circulated. The Chair tabled submissions 42, 43 and 44. Discussion ensued.

Resolved on the motion of Mr Crouch, seconded Dr Faruqi: That the Committee publish submissions 8 to 44 on its website in full with the redaction of all signatures and personal contact details, with the exception of:

- submissions 11 and 13 which will be kept confidential to the Committee at the request of the authors
- submission 43 of which only pages 1 to 7 will be published
- submission 44 of which only the part headed 'submission 2' will be published.

Resolved on the motion of Ms Petinos, seconded by Mr Crouch: That the Committee delegate to the Chair and the Committee staff authority to publish any further submissions received subject to referral to the Committee for deliberation if the Chair so deems.

4.3 Public Hearing
The Chair tabled a list of eight proposed witnesses for the Committee's public hearing on Monday 9 April 2018 for consideration, as follows:

- NSW Government (42)
- Australian Trucking Association (23)
- Australian Logistics Council (24)
- Livestock, Bulk and Rural Carriers Association (28)
- TARS (34)
- UNSW and Macquarie University (32)
- Ron Finemore Transport (21)
- Tollgroup (39).

Discussion ensued. The Chair noted consensus that members be invited to suggest further witnesses and that, if required, a second public hearing be held on Friday 13 April 2018.

Resolved, on the motion of Mr George, seconded by Mr Crouch: That the Committee invite the eight witnesses proposed by the Chair to appear before the Committee at its public hearing on Monday 9 April 2018; that the Chair publicise the public hearing by issuing a media release; and that the Committee staff issue invitations to the witnesses identified.

5. ***

6. Next meeting

The Chair closed the meeting at 1.15 pm until the next meeting on Monday 9 April 2018 at 8.45am in the Jubilee Room, Parliament House to precede the public hearing at 9.00 a.m.

MINUTES OF MEETING 25
Monday 9 April 2018
Jubilee Room Parliament House

Members present
Mr Greg Aplin MP (Chair), The Hon Scott Farlow MLC (Deputy Chair), Dr Mehreen Faruqi MLC, The Hon Thomas George MP, The Hon Daniel Mookhey MLC, Ms Eleni Petinos MP

Officers in attendance
Jonathan Elliott, David Hale, Leon Last, Jacqueline Isles

The Chair opened the meeting at 9.00am.

Apologies
Mr Adam Crouch MP, Mr Nick Lalich MP

1. Confirmation of the minutes of meeting 24

Resolved, on the motion of Dr Faruqi: That the minutes of meeting 24 held on 14 March 2018 be confirmed.

2. ***

3. ***

4. Inquiry into heavy vehicle safety and use of technology to improve road safety

4.1 Submissions
Resolved, on the motion of Mr Farlow: That the receipt and publication of submission 42a be noted.

4.2 Public hearing
Resolved, on the motion of Mr Farlow: That the Committee invites the witnesses listed in the notice of the public hearing for Monday 9 April 2018 to give evidence in relation to the inquiry into heavy vehicle safety and use of technology to improve road safety.

Mr Mookhey's abstention from this vote was recorded.

4.3 Media
Resolved, on the motion of Mr Farlow: That the Committee authorises the audio-visual recording, photography and broadcasting of the public hearing on 9 April 2018 in accordance with the NSW Legislative Assembly's guidelines for coverage of proceedings for parliamentary committees administered by the Legislative Assembly.

4.4 Transcript of evidence
Resolved, on the motion of Mr Farlow: That the corrected transcript of evidence given on 9 April 2018 be authorised for publication and uploaded on the Committee's website.

4.5 Answers to questions on notice
Resolved, on the motion of Mr Farlow: That witnesses be requested to return answers to questions taken on notice within 1 week of the date on which the questions are forwarded to the witnesses, and that once received, answers be published on the Committee's website.

5. General business

There was no general business.

The Chair adjourned the deliberative meeting at 9.10am.

The public hearing
The Chair opened the public hearing at 9.10am. Witnesses, the public and the media were admitted. The Chair welcomed the witnesses and the gallery.

The following witness representing the Australian Trucking Association was sworn and examined:

- Mr Bill McKinley

Evidence concluded, the witness withdrew.

The following witness representing Ron Finemore Transport was sworn and examined:

- Mr Ron Finemore AO

Evidence concluded, the witness withdrew.

The following witnesses representing Transport and Road Safety (TARS) Research were affirmed and examined:

- Professor Ann Williamson
- Dr Rena Friswell

Evidence concluded, the witnesses withdrew.

The following witness representing the Australian Logistics Council was sworn and examined:

- Mr Michael Kilgariff

The following witness representing the Australian Logistics Council was affirmed and examined:

- Mr Kerry Corke

Evidence concluded, the witnesses withdrew.

The following witness representing Toll Group was affirmed and examined:

- Mr Royce Christie

Evidence concluded, the witness withdrew.

The following witnesses representing UNSW Canberra/Macquarie University were affirmed and examined:

- Dr Sharron O'Neill
- Associate Professor Louise Thornthwaite

Evidence concluded, the witnesses withdrew.

The following witness representing the Livestock, Rural and Bulk Carriers Association was sworn and examined:

- Mr Paul Pulver

Evidence concluded, the witness withdrew.

The following witnesses representing the NSW Government were sworn and examined:

- Mr Bernard Carlon, Transport for NSW
- Mr Phil Bullock, Transport for NSW
- Assistant Commissioner Michael Corboy, NSW Police

The following witness representing the NSW Government was affirmed and examined:

- Ms Melinda Bailey, Roads & Maritime Services

Evidence concluded, the witnesses withdrew.

The Chair closed the public hearing at 4.45pm.

The deliberative meeting
The Chair resumed the deliberative meeting at 4.45pm.

6. Documents tendered during the public hearing

Resolved, on the motion of Mr George: That the following documents tendered during the public hearing be accepted by the Committee and published on the Committee's website:

- *Improving heavy vehicle safety the Australian way – a position paper*, tendered by Mr Kilgariff
- *Chain of responsibility – understanding your obligations as a customer*, tendered by Mr Christie.

7. Additional questions for witnesses

The members agreed that any additional questions they wished asked of witnesses at the public hearing should be sent to the secretariat by close of business on Tuesday 10 April 2018.

8. Next meeting

The Chair closed the meeting at 4.50pm. The next meeting will be held at 1.00pm on Wednesday 23 May 2018.

MINUTES OF MEETING No 26
12 April 2018
Room 1254, Parliament House

Members present
Mr Greg Aplin MP (Chair), The Hon Scott Farlow MLC (Deputy Chair), Mr Adam Crouch MP, Dr Mehreen Faruqi MLC, The Hon Thomas George MP, The Hon Daniel Mookhey MLC**,** Ms Eleni Petinos MP

Officers in attendance
Jonathan Elliott, David Hale, Leon Last, Jacqueline Isles

The Chair opened the meeting at 1.30 pm.

1. Apologies
Mr Nick Lalich MP

2. Confirmation of minutes
Resolved, on the motion of Mr Farlow, seconded Ms Petinos: That the minutes of Meeting No 25, held on 9 April 2018 be confirmed**.**

3. Inquiry into heavy vehicle safety and use of technology to improve road safety

3.1 Additional questions for witnesses

The Chair referred to the additional questions for witnesses who appeared at the public hearing on Monday 9 April 2018 as submitted by Mr Mookhey and by Dr Faruqi and already circulated.

Discussion ensued.

Mr Mookhey and Dr Faruqi agreed to revise the questions for circulation to members out of session.

The Chair proposed that the issue be considered at a further meeting if consensus was not reached out of session.

4. Next meeting

The Chair closed the meeting at 1.54 pm until the next meeting on Wednesday 23 May 2018 at 1.00 pm.

UNCONFIRMED MINUTES OF MEETING No 27
24 May 2018
Room 1254, Parliament House

Members present
Mr Greg Aplin MP (Chair), The Hon Scott Farlow MLC (Deputy Chair), Mr Adam Crouch MP, Dr Mehreen Faruqi MLC, The Hon Daniel Mookhey MLC**,** Ms Eleni Petinos MP

Officers in attendance
Jonathan Elliott, David Hale, Leon Last, Jacqueline Isles

The Chair opened the meeting at 1.03 pm.

5. Apologies

Mr Nick Lalich MP, The Hon Thomas George MP

6. Confirmation of minutes

Resolved, on the motion of Mr Crouch, seconded Mr Farlow: That the minutes of Meeting No 26, held on 12 April 2018 be confirmed**.**

7. Matters arising from minutes

Matters arising from the minutes of Meeting No 26 were noted.

8. Inquiry into heavy vehicle safety and use of technology to improve road safety

The Chair tabled the draft report and invited discussion.

Dr Faruqi circulated proposed amendments for consideration.

Discussion ensued.

Resolved, on the motion of Dr Faruqi, seconded Mr Mookhey: That the following words be added to paragraph 1.10; 'However, the inquiry did receive evidence, both in submissions

and in hearings, which recommended measures other than technology to improve driver and heavy vehicle safety'.

Moved on the motion of Dr Faruqi, seconded Mr Mookhey: That the following four paragraphs be added after paragraph 1.41;

> The Transport Workers' Union state in their submission that heavy vehicle drivers have spoken about the pressures of working in the industry and factors that cause fatigue, such as unrealistic delivery times set by clients, including retailers.
>
> The Committee heard evidence from Transport and Road Safety (TARS) Research that "if heavy truck drivers have active and legal incentives to keep driving rather than to take the time needed for rest and recovery, implementing technology that monitors, detects and warns of fatigue will not be useful. It will only look at the symptoms of the problem; not deal with the heart of the fatigue problem".
>
> TARS also noted that "Working hours regulations allow Australian truck drivers to work longer hours and require them to have less rest time than almost all other countries with similar industries to ours (USA, Canada, European Union, New Zealand)".
>
> Fatigue is one of the leading factors for heavy vehicle crashes. In light of this, Chain of Responsibility laws need to be strengthened.

And that the following words be added after paragraph 1.64; 'The Committee recognises that driver fatigue is a consequence of the pressures of the industry including longer working hours, unrealistic delivery times and insufficient rest times which need to be addressed'.

The Chair put the motion.
Ayes 2: Dr Faruqi, Mr Mookhey
Noes 3: Mr Farlow, Mr Crouch, Ms Petinos
Motion lost.

Resolved, on the motion of Dr Faruqi, seconded Mr Mookhey: That Finding 7 be amended by deleting the words 'is not promising' and substituting the words 'is still emerging'.

Resolved, on the motion of Dr Faruqi, seconded Mr Mookhey: That Recommendation 7 be amended by adding the words 'drivers, workers,' after the word 'industry'.

Moved on the motion of Dr Faruqi, seconded Mr Mookhey: That Finding 10 be amended by deleting the words 'and are not a reason to conclude that current safety strategies are unfit for purpose' and substituting the words 'However, the New South Wales Government must continue to invest in road safety'.

The Chair put the motion.
Ayes 2: Dr Faruqi, Mr Mookhey
Noes 3: Mr Farlow, Mr Crouch, Ms Petinos
Motion lost.

Resolved, on the motion of Mr Farlow, seconded Mr Crouch: That Finding 10 be amended by adding the words 'However, the New South Wales Government must continue to invest in road safety'.

Resolved, on the motion of Mr Farlow, seconded Mr Crouch:
a) That the Committee adopts the recommendations as set out in the report.
b) That the draft report be the report of the Committee and that it be signed by the Chair and presented to the Parliament.
c) That the Committee staff be permitted to correct stylistic, typographical and grammatical errors.
d) That, once tabled, the report be published on the Committee's webpage.
e) That the Chair issue a press release announcing the tabling of the report.

Mr Mookhey and Dr Faruqi requested that their abstentions from the vote be recorded in the minutes. The Committee agreed.

The Committee discussed the conduct of the inquiry.

Moved on the motion of Dr Faruqi, seconded Mr Mookhey: That the Committee took an unnecessarily narrow interpretation of the terms of reference and restricted the types of questions on notice that could be asked.

The Chair put the motion.
Ayes 2: Dr Faruqi, Mr Mookhey
Noes 3: Mr Farlow, Mr Crouch, Ms Petinos
Motion lost.

9. Next meeting

The next meeting will be held at 1.00pm on Wednesday 6 June 2018.

The Chair closed the meeting at 1.21pm.

Appendix Six – Glossary

ABS	Anti-lock Braking System
ADAS	Advanced Driver Assistance Systems
AEBS	Autonomous Emergency Braking Systems
ADR	Australian Design Rules
ALC	Australian Logistics Council
ANCAP	Australian New Car Assessment Program
ATA	Australian Trucking Association
ATSB	Australian Transport Safety Bureau
Austroads	Association of Australasian Road Transport and Traffic Agencies
AV	Automated vehicle
CAV	Connected automated vehicle
CCAA	Cement Concrete and Aggregates Australia
CITI	Cooperative Intelligent Transport Initiative
C-ITS	Co-operative Intelligent Transport Systems
CLOCS	Construction Logistics and Community Safety Scheme
COAG	Council of Australian Governments
CRS	Centre for Road Safety
DMS	Driver Monitoring System
EC	European Community/Communities
ESC	Electronic Stability Control

EWD	Electronic Work Diary
EU	European Union
FUPS	Front Underrun Protection System
GPS	Global Positioning System
GVM	Gross Vehicle Mass
HVNL	Heavy Vehicle National Law
IAP	Intelligent Access Program
ISC	Intelligent Speed Compliance
ISM	Intelligent Speed Management
ITS	Intelligent Transport Systems
LBRCA	Livestock, Bulk and Rural Carriers Association of NSW
NATROAD	National Road Transport Association
NCAP	New Car Assessment Program
NHVR	National Heavy Vehicle Regulator
NTC	National Transport Commission
OBM	On-Board Mass
RMS	Roads and Maritime Services
RSP	Road Safety Plan
SAE	Society of Automotive Engineers
SPECTS	Safety, Productivity and Environment Construction Transport Scheme
TARS	Transport and Road Safety Research Centre, University of NSW

TCA	Transport Certification Australia
TfNSW	Transport for New South Wales
UK	United Kingdom
UNSW	University of NSW
TWU	Transport Workers' Union of NSW