

**INQUIRY INTO UPDATING PROGRESS ON RAILWAY
LEVEL CROSSING SAFETY**

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AUSTRALASIAN RAILWAY ASSOCIATION INC

Association Number A03958 ABN 64 217 302 489

Mr Geoff Corrigan MP
Chair
Staysafe Committee
Parliament House
Macquarie Street
SYDNEY NSW 2000

RISSB/OUT/2009/05

30 January 2009

Dear Mr Corrigan,

PARLIAMENTARY JOINT STANDING COMMITTEE ON ROAD SAFETY SUBMISSION

I refer to your letter of 2 December 2008 to Mr Don Telford, Chairman of the Australasian Railway Association (ARA) seeking a submission to update the Parliamentary Joint Standing Committee on Road Safety (Staysafe) regarding level crossing safety developments that have occurred since the Committee's last report was tabled in December 2006. At Mr Telford's request, the ARA is providing a submission on behalf of the rail industry.

The ARA commends the Staysafe Committee for continuing to examine the level crossing issue and welcomes the opportunity to update the committee. The ARA looks forward to continuing to work co-operatively with the Australian Government on issues relevant to the rail industry.

Yours sincerely,

Bryan Nye

Chief Executive Officer

Australasian Railway Association



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**SUBMISSION TO THE NEW SOUTH WALES
PARLIAMENTARY JOINT STANDING COMMITTEE ON
ROAD SAFETY (Staysafe)**

30 January 2009

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1. EXECUTIVE SUMMARY

Level crossing safety is the rail industry's highest safety priority. As the member-based organisation representing the interests of the Australian and New Zealand rail industry, the Australasian Railway Association (ARA) applauds this review for focusing government attention on this major safety issue.

As requested by the New South Wales (NSW) Parliamentary Joint Standing Committee on Road Safety (Staysafe) Committee Chair, the following submission provides an update on level crossing safety developments and actions that have occurred after the Committee's report was tabled in December 2006.

During 2006, the rail industry embarked on an Australian transport industry first in the development of the National Rail Level Crossing Behavioural Coordination Group. The development and success of this group are detailed as the key deliverables of the group.

In 2007, an Industry Level Crossing Strategy was developed with a focus on education, enforcement and engineering initiatives aimed at reducing the number of level crossing collisions. Importantly, the ARA has implemented a number of action items within the strategy in its efforts to boost level crossing safety on a national scale.

The cost of upgrading level crossings is significant. To combat this and provide alternative upgrade solutions, intelligent transport systems (ITS) are available. The ARA believes the NSW Government should take the lead by trialling ITS safety options at NSW level crossings. Successful trials could potentially be adopted nationally.

Also in 2007, the Rail Industry developed the Co-operative Research Centre for Rail Innovation (CRC). The CRC is currently examining the causal factors surrounding level crossing collisions, alternative low-cost control options for regional and occupational level crossings as well as identifying and prioritising new level crossing projects to contribute to level crossing safety in Australia.

Historically, responsibility and ownership issues between road and rail authorities have surrounded level crossings. In response to this, a national model Rail Safety Bill was developed in 2006 mandating Interface Coordination Agreements (ICA's). Enacted by the NSW Parliament in late 2008, ICA's are a risk mitigation measure that brings road and rail authorities together to jointly manage level crossing safety.

More recently, the ARA has joined forces with the Australian Trucking Association (ATA) to include a level crossing education section within the ATA's educational vehicle, 'The Road Ahead'. This project will spread level crossing safety messages throughout regional and rural Australia.

For the benefit of all rail and road users, the ARA believes it is critical that level crossing safety measures are applied uniformly in a nationally coordinated approach throughout Australia.

2. THE LEVEL CROSSING SETTING

The rail industry considers level crossing safety to be its highest safety priority.

Nationally, approximately 100 level crossing collisions occur every year. According to the Australian Transport Safety Bureau (ATSB) these crashes result in the death of 37 people annually. Compared to the Australian road toll, this statistic is minor. Unfortunately because of this railway level crossing safety initiatives have been continually underfunded by Governments and road authorities. However, level crossing crashes, especially those involving heavy vehicles, have the potential to be catastrophic in terms of loss of life, economic and political impact for those directly and indirectly involved. The ARA acknowledges that some Governments have increased their priorities for railway level crossings but this tends to be reactive and not deliberate.

Upgrading level crossing infrastructure from passive to active status requires considerable funding. For instance, "the capital cost to upgrade a crossing and provide fail-safe train-activated flashing

lights can be between \$250,000 and \$350,000¹. Depending on the number of railway tracks and the width of the road, these costs escalate to between \$350,000 and \$450,000 to include boom barriers².

Level crossing safety is a multi-faceted issue that needs to be approached in a nationally coordinated manner. It is important that Governments maintain railway level crossings as a priority within their public works programs and increase expenditure accordingly. This view is reflected in a 2008 report by the Road Safety Committee of the Parliament of Victoria into improving safety at railway level crossings.³

More than 3,800 level crossings are located in New South Wales (NSW), most of which have passive controls and are located in regional areas. Whilst these railway level crossings exist, none of these sites are risk-free.

The ARA believes the NSW Government should embark on a rationalisation of level crossings particularly where there are level crossings in close proximity to each other. Additionally, at high risk level crossings, grade separation may be the only answer.

Following the Committee's first review of its report in December 2006, and until 30 June 2008, 12 level crossing collisions between trains and road vehicles have occurred in NSW⁴.

The data does not include level crossings fatalities however figures exist on the number of people seriously injured. In a 2008 report, The Australian Institute of Health and Welfare (AIHW), stated:

From 2001–02 to 2005–06, there were on average 50 persons seriously injured in Australia each year due to a transport accident involving a collision with a train at a level crossing, with 249 persons seriously injured over the five-year period. There was a relatively even spread of hospitalisations over the six-month periods. Victoria had the highest number of level crossing-related hospitalisations with 129, followed by Queensland with 50, South Australia with 28 and New South Wales with 27⁵.

3. NATIONAL RAILWAY LEVEL CROSSING BEHAVIOURAL CO-ORDINATION GROUP

In 2003, the Australian Transport Council (ATC) approved the National Railway Level Crossing Safety Strategy. It was developed in response to major level crossing collisions around Australia and growing recognition of the level crossing safety issue. Interestingly the same issues are prevalent today.

The Strategy aimed to address the complex road user, pedestrian and train interface safety issues at level crossings. The strategy's objective is to reduce the number, cost and trauma of crashes between trains and road users in the most cost-effective means.

To implement the strategy and its accompanying action plan on a national scale, the ATC formed the Australian Railway Crossing Strategy Implementation Group (ARCSIG). This Group consisted of road and rail authorities, government and the ARA; ARCSIG's brief encompassed railway level crossing safety, rail infrastructure and level crossing policy.

¹ Parliament of Victoria, Road Safety Committee (2008) *Inquiry Into Improving Safety at Railway level crossings*, page 33.

² Parliament of Victoria, Road Safety Committee (2008) *Inquiry Into Improving Safety at Railway level crossings*, page 33.

³ Parliament of Victoria, Road Safety Committee (2008) *Inquiry into Improving Safety at Railway level crossings*.

⁴ ATSB (2008) *Australian Rail Safety Occurrence Data, 1 January 2001 to 30 June 2008*, page 10.

⁵ Australian Institute of Health and Welfare (2008) *Serious injury due to transport accidents involving a railway train, Australia, 2001–02 to 2005–06*, page 13.

As a member of the ARCSIG, the ARA was tasked with implementing behavioural initiatives to increase safety at crossings. To improve the execution of these behavioural programs, the ARA, in conjunction with senior government representatives, proposed the creation of the National Railway Level Crossing Behavioural Coordination Group (BCG). Endorsed by senior government road and rail authorities, the ATC approved the proposal for the BCG in June 2006 for a two year period.

The formation of the BCG represented a first within Australian transport as government road and rail senior managers from all jurisdictions collaborated with the rail industry in a nationally co-ordinated approach to improve road user behaviour at level crossings. The BCG oversaw the development, delivery and evaluation of research and projects that aimed to improve road user behaviour by implementing education, awareness, enforcement and technological initiatives. The group carried out its projects within a budget of \$400,000 per annum. \$120,000 of this was an 'in-kind' contribution by the rail industry, whilst each jurisdiction contributed funding proportionate to their population.

The BCG enabled resources, funding and initiatives to be approached in a pooled effort as the group effectively and efficiently contributed to national level crossing safety measures. The collaborative development of behavioural programs between jurisdictions produced national outcomes that benefited each State and Territory at a fraction of the cost had they gone it alone. Furthermore, smaller jurisdictions were able to participate and benefit from projects they may otherwise have been unable to fund.

The BCG was highly successful in the Australian level crossing environment. It implemented a number of behavioural initiatives that were the first of its kind within the country. Noting the success of the BCG, the rail industry welcomes the creation of the Rail Level Crossing Group (RLCG) that will address the national level crossing problem on behalf of the Safety and Security Working Group (SSWG).

The key deliverables of the BCG are discussed in the following paragraphs.

3.1 National Rail Level Crossing Road User Behavioural Study

In 2007, the BCG commissioned the first National Rail Level Crossing Road User Behavioural Study across all jurisdictions. This project links to the Staysafe Committee's recommendation 56 in the 2004 Report on Safety of Railway Level Crossings.

Three focus groups and 25 in-depth interviews were followed by a quantitative survey of over 4,400 road users around Australia. The study identified self-reported behaviours and attitudes to measure participant's awareness, knowledge and perceptions of the road rules and risks associated with level crossings. It also measured how respondents view and interact with level crossings.

Participants were road users aged 18 years and older in possession of a current driving licence who had travelled over a level crossing at least once within the past six months (exclusive of being a passenger). The study intentionally over-represented regional and rural Australians in an effort to mirror the prevalence and location of Australian level crossings.

Some key survey takeouts follow:

- 24% reported engaging in illegal usage of a level crossing one or more times. This constituted:
 - crossing when a train was visibly approaching,
 - not stopping at a stop sign,
 - accelerating to pass under a lowering boom gate,
 - not waiting for the lights and boom gates to cease operation before proceeding across train tracks,

- avoiding the boom gate by driving around it, and
 - becoming trapped between lowered boom gates in their effort to rush across a level crossing.
- approximately one in five acknowledged they had travelled over a level crossing and not realised until after they had crossed;
 - one in five were unaware of any penalties for breaking level crossing road rules while 66% believed they were less likely to be penalised for breaking rules at level crossings than driving at speeds exceeding the speed limit;
 - driver inattentiveness and impatience were collectively identified as the greatest factors contributing to increased risk at level crossings;
 - one in four reported risky behaviour at level crossings yet not all classified crossing when a train is approaching as risky; and
 - 16 – 25 year old drivers were identified as the group most at risk at level crossings. This group was self-aware of their heightened risk yet older drivers were less aware of their risks.

The findings from this national survey are available to each jurisdiction and are currently being utilised in conjunction with the education and enforcement pilot (detailed in 3.2) to tailor a national communications package (detailed in 3.5).

3.2 Exemplar Education and Enforcement Pilot

In 2007, the BCG conducted the Exemplar Education and Enforcement Pilot. A ‘before and after’ study of road user behaviour at level crossing sites in metropolitan and rural Victoria was undertaken. Additionally the results of a mining company’s level crossing initiatives in the Northern Territory were examined with appropriate deductions drawn.

In Victoria, behaviour was monitored at nominated level crossings to measure compliance. These sites included passive crossings with ‘Stop’ or ‘Give Way’ signs, as well as active crossings fitted with flashing lights only, and those with flashing lights and boom barriers. A local education and enforcement campaign was then conducted in these areas for four weeks. Following this month long education period, behaviour was remeasured at the test sites and control sites to determine the effectiveness of the education and enforcement programs.

The Victorian pilot was conducted to provide a basis on which guidance materials could be developed for rail organisations in each jurisdiction to engage enforcement agencies in level crossing safety. It also aspired to create guidance resources for rail organisations to engage local road safety agencies to conduct community awareness campaigns.

This study recognised that increased compliance with road rules will decrease the number of level crossing crashes and that enforcement is a critical element of heightened level crossing safety.

The ARA participated in the program with the Victorian rail regulator, Public Transport Safety Victoria, and the state’s arterial road authority, VicRoads. Three Community Road Safety Councils delivered local education campaigns whilst Victoria Police conducted enforcement at the sites. The pilot demonstrated that enforcement has a positive effect on road user compliance with Stop signs at crossings.

The second aspect of the pilot was conducted in the Northern Territory, examining a mining company’s compliance program. After unsuccessfully stationing a security guard at a level crossing to enforce a Stop sign, the company introduced a log book. Drivers had to exit their vehicle and sign the log book before travelling over the level crossing. The book remained for four months before being replaced intermittently with security. During three months of monitoring, non-compliance was

almost eliminated and remained very low over the following five months. Only the occasional heavy vehicle failed to comply.

As the sample size of the Victorian pilot was relatively small, it is believed this project will be utilised as preliminary work. However, it does suggest very low compliance levels at level crossings and potential benefits for controlled education and enforcement to improve safety. The findings from this project and national survey are currently being incorporated into a communications package for all jurisdictions.

3.3 National Workshop

On 21 February 2008, the BCG in collaboration with the ARA held the Safer Road User Behaviour at Level Crossings – A National Workshop. This initiative links to the Staysafe Committee's recommendation 67 of the 2004 Report on Safety of Railway Level Crossings.

Senior representatives from Australian and State Government authorities, (including rail regulators, investigators, coronial officials and enforcement agencies) the rail and trucking industry and trade unions, participated in the workshop, which was labelled a success by the ARA, BCG and attendees.

The workshop presented key initiatives completed by the BCG and provided an environment for stakeholders to discuss future level crossing safety options. During the workshop, attendees formed groups and participated in interactive sessions to brainstorm ideas and future projects that could reduce level crossing collisions and injuries as well as safety initiatives for possible implementation by groups outside the BCG.

These brainstorming sessions produced a number of suggestions, including the following that were identified by three or more of the seven groups. In essence, workshop participants agreed that effort had to be applied to:

- revitalise and renew the National Strategic Plan,
- build a framework leading to systems integration,
- undertake technology trials with ITS at specific sites,
- establish a method to build near miss information into data,
- trial cameras on locomotives to collect data on crashes and near misses, and
- establish a national database with pooled crash data.

The ARA strongly supports the progression of any of the above listed projects but would argue that these should be approached nationally rather than a State-by-State.

3.4 Communications Package

A communications package is being produced using the findings from the National Rail Level Crossing Study, Exemplar Education and Enforcement Pilot, and overseas awareness and education programs.

The package is currently in the final stages of production and includes print, radio and television advertisement materials. These materials will be available to each jurisdiction, providing nationally consistent resources for level crossing safety communication campaigns.

Whilst individual users need to fund the distribution of the materials, the national availability of such resources will save time and money whilst providing effective communication tools that are easily and quickly obtainable, based on research and has been market-tested to ensure ultimate message take-out.

These materials will help distribute consistent and effective safety messages to the appropriate target groups as identified within the national survey and education and enforcement pilot.

3.5 Inventory

The BCG compiled an inventory of Australian level crossing behavioural programs. Details of targeted safety education programs, mass media campaigns, enforcement programs and community awareness campaigns have been collected and put into a specific location on the RISSB website. The inventory provides points of contacts for further information regarding specific campaigns and programs that have been conducted in each state and territory.

3.6 Website

Level crossing safety web pages containing relevant information on level crossings and safety behavioural initiatives are located on the Rail Industry Safety and Standards Board (RISSB) website under safety matters. These pages contain information on the key deliverables of the BCG as well as other ARA/RISSB level crossing projects. In addition, links to useful Australian and overseas level crossing websites are also provided.

4. RAIL INDUSTRY LEVEL CROSSING STRATEGY

In 2007, the ARA developed a National Strategic Plan indentifying seven strategic objectives for the Australasian rail Industry to pursue over the next 10 years. Strategic objective five focuses on level crossing safety and aims “to bring about the introduction of measures that substantially reduces level crossing collisions”. To achieve this outcome, an Industry Level Crossing Strategy was produced in consultation with relevant stakeholders.

The strategy recognises that level crossing crashes are traditionally a low priority for road authorities and acknowledges the need for the rail industry to lead the way in level crossing safety initiatives.

An action plan has been prepared, and the main focus for 2008-09 is education, enforcement and engineering initiatives. These incorporate a wide range of measures that sees industry working with government and other stakeholders to reduce level crossing fatalities, injuries and collisions. A copy of the strategy’s action plan is at attachment 1.

4.1 Advocacy

In April this year, Victorian Public Transport Minister, Lynne Kosky, announced speed reductions at 72 Victorian level crossings and increased level crossing infringement penalties. Enforced by a heightened Police presence, the first initiative implements 80km/hr speed zones around major highway level crossings. The latter initiative increases level crossing infringement fines from \$182 and a loss of three demerit points to \$551 and a loss of four demerit points. Similarly, in July 2007 the Northern Territory Government announced \$500 fines and the loss of three demerit points for level crossing infringements.

The ARA strongly supports speed reductions and harsher infringement penalties at level crossings accompanied by appropriate enforcement measures. The ARA has written to Transport Ministers urging them to adopt the 80km/hr speed zones around level crossings on high speed roads as well as boosting level crossing infringement penalties to reflect the potentially catastrophic nature of level crossing collisions.

The rail industry believes that these two measures are essential to improve road – rail safety throughout Australia. **The ARA submits that heightened, nationally consistent level crossing infringement penalties supported by increased enforcement will increase the number of drivers that obey level crossing signage and controls.** Similarly, by lowering surrounding speed limits at level crossings located on high speed roads will better enable drivers to make decisions on whether it is safe or not to continue through a level crossing.

4.2 Updating the Level Crossing Incident Costing Model

In 2003, the ATSB released the ARRB prepared report, *Prospects for improving the conspicuity of trains at passive railway crossings*. This report states that the average annual cost of level crossing crashes, is estimated to “be at least \$24.8 million”⁶.

This figure however does not include losses incurred by rail companies involved. Accordingly, *the ARA believes that the calculations are an inaccurate representation of level crossing collision costs. Instead, the ARA argues that the cost of level crossing collisions is much greater.*

For example, the costs associated for the May 2006 level crossing crash at Lismore in Victoria is estimated by the ATSB to have exceeded \$30million in damages. Similarly, although the ATSB has not released the investigation report for the June 2007 Kerang level crossing collision, the ARA has been advised that the damages bill could exceed \$27 million.

Both crashes individually exceed the estimated annual costs for level crossing collisions. As a result, the rail industry is working with the Bureau of Infrastructure, Transport and Regional Economics (BITRE) to reassess the level crossing incident costing model. At this stage, rail safety managers and the BITRE have agreed on the data requirements needed to re-address this model.

Data is being collected for the 2008-09 financial year; at the conclusion of which the BITRE will re-examine the costs of level crossing collisions. This development links to the STAYSAFE Committee’s recommendation 26 of the 2004 Report on Safety of Railway Level Crossings.

4.3 National Rail Safety Week

The National Rail Safety Week (NRSW) was initiated by the ARA in 2006 to support the National Railway Level Crossing Behavioural Strategy. The NRSW was endorsed by the Australian Transport Council and NRSW. It has been designed to increase community awareness about rail safety and consequently improve road user behaviour at level crossings and around railways. Every jurisdiction conducts a variety of safety activities throughout the week, generating increasing media coverage each year. There is no doubt that NRSW is a success but room exists to improve it. And improvements are being made for NRSW 2009.

NRSW 2009 will be held throughout Australia and New Zealand from Friday 24 to Friday 31 July 2009. In recognition of the week’s importance in the rail safety calendar, 2009 will be launched with an ARA dinner at the State Library of Victoria in Melbourne on Friday 24 July 2009. State and Federal Transport Ministers have been invited along with media representatives and industry to participate in an evening solely focused on raising awareness and understanding of level crossing safety. Invitations have also been extended to other high profile Australians. Chris Cairns, international cricketer and founder of the New Zealand Chris Cairns Railway Level Crossings Foundation will be guest speaker for the evening.

New South Wales has been a strong supporter of NRSW. But more can and should be done by NSW, and the other States, during NRSW. *Accordingly the ARA recommends that the NSW Government increases its commitment to NRSW as there are only positive benefits to be gained by raising the profile of Railway Level Crossing Safety in NSW.*

4.4 Visibility Standards

In 2006, the RISSB developed and published a rail industry standard on Lighting and Rolling Stock Visibility for locomotives, infrastructure maintenance, freight and passenger rolling stock to address train conspicuity. Following its accreditation as a Standards Development Organisation by Standards Australia in July 2007, the RISSB reproduced the Lighting and Visibility Standard as an Australian Standard (AS 7531) in December 2007.

⁶ Cairney, P (2003) *Prospects for improving the conspicuity of trains at passive railway crossings*, P vii

The main purpose of the standard is to “reduce the risk of level crossing accidents and to have sufficient illumination to enable safe operating and maintenance activities”⁷.

With the media frequently addressing train visibility issues, particularly in reference to level crossings, the ARA under direction from the ARA Executive, conducted an audit in 2008 to determine Industry compliance with the standard as operators anticipated them to be at 1 July 2008. These figures were requested to be indicative percentages of fleet compliance.

The audit demonstrates that the Rail Industry as a whole is 78 per cent compliant with the standard in just over six months. Commercial rail operators are 83% compliant with the Standard.

- This percentage will improve as rolling stock undergo maintenance.

Heritage operators (members of the Association of Tourist and Heritage Rail Australia) are 52% compliant with the Standard.

- A key factor in the lower levels of compliance by heritage operators is their desire to preserve the heritage values of their locomotives and rolling stock. Additionally some heritage operators do not have level crossings on their networks.

The development of this standard can be linked to the Staysafe Committee’s recommendation 49 of the 2004 Report on Safety of Railway Level Crossings.

4.5 B-Triple Network

The rail industry holds strong reservations about the proposed B-Triple Network and the effect it could have on level crossing safety.

The rail industry is determined to view risk assessments of all level crossings located on the B-Triple Network. The safety issues raised by the proposed network lie primarily with the infrastructure surrounding level crossings. **The ARA questions whether the infrastructure is adequate to accommodate the length of B-Triples.** Town planning was not conducted with B-Triples in mind. As such, trailer ends could potentially hang onto rail lines when B-Triples are stopped at adjacent intersections leading to a level crossing collision.

Two recent collisions illustrate the potential loss of life and financial costs that were a direct result of a heavy vehicle and train colliding. In May 2006, a loaded rigid tipper truck and quad axle trailer collided with the second locomotive of a freight train in Lismore, Victoria. The impact alone derailed 41 of the train’s 64 wagons and reached a damages bill that exceeded \$20M. In June 2007, a semi trailer collided with the second and third carriages of a V/Line passenger train causing the loss of 11 lives and 20 significant injuries. These horrific collisions are a direct reflection of the rail industry’s concerns with the B-Triple Network and the potential catastrophe that could occur if B-Triples are granted access to level crossings and the surrounding infrastructure without conducting suitable risk assessments.

Some rail industry members have sought copies of level crossing risk assessments regarding heavy vehicles. Despite these requests, they are yet to be provided with any risk assessments. Failure to provide these documents only exemplifies level crossing safety concerns within the industry.

The ARA Chief Executive recently wrote to each State and Territory Department of Transport requesting copies of risk assessments conducted on level crossings located on the B-Triple Network. On 30 January 2009, the ARA is yet to receive any responses. **The ARA urges the NSW Government**

⁷ Australian Standard 1742.7-2007 *Manual of Uniform Traffic Control Devices Part 7: Railway Crossings.*

to ensure that risk assessments of Level Crossings on the proposed B Triple Network are undertaken before any decision are made on the Network.

5. INTELLIGENT TRANSPORT SYSTEMS

In February 2008, the ARA in concert with the Intelligent Transport Systems (ITS) peak body, ITS Australia, conducted an ITS workshop for Railway Level Crossings Workshop. Road and rail industry experts, government transport officials, and technology researchers and manufacturers, attended the workshop and were briefed on the effect that advanced technology could have to improve safety at level crossings.

The Workshop provided an opportunity for participants to examine a range of technological issues and initiatives. It aimed to stimulate interest in ITS by presenting the various options available to improve road and rail safety at level crossings.

The ITS workshop supports the Staysafe Committee's recommendations 30 and 31 in the 2004 Report on Safety of Railway Level Crossings.

If ITS were to be implemented into state and territory transport systems, the ARA believes that the systems have the potential to reduce level crossing crashes by alerting drivers to hazards or even controlling the operation of rail and road road vehicles. At these crossings, ITS could automatically:

- alert rail and road central control systems, individual trains and road vehicles and users of the presence of up-coming hazards such as a level crossing or an approaching train or vehicle;
- alert vehicle drivers of the need to moderate their approach speed to an up-coming crossing;
- manage the passage of vehicles as they approach and pass through level crossings by limiting their speed to the posted speed limit;
- inform rail and road central control systems, including enforcement authorities, if the train or vehicle exceeded the posted speed limit;
- inform road central control systems, including enforcement authorities, if the road vehicle did not stop, as required at an active or passive crossing; and
- inform rail and road central control systems of a crash.

The ARA believes that the NSW Government could play a vital role supporting the development, trial and implementation of ITS applications at NSW level crossings. Successful measures could potentially be rolled out nationally with NSW setting the benchmark.

6. CRC FOR RAIL INNOVATION

In 2007, the rail industry established a Co-operative Research Centre for Rail Innovation (CRC) with leading universities in Australia.

In 2008, the CRC released a major report, the Level Crossings Research Database, which investigated the effectiveness of engineering, enforcement and education approaches to improving safety for motorists and rail users at level crossings.

Within the CRC's research program there are several important level crossing projects, namely:

- a Survey of Railway Level Crossing Safety Research a major project to utilise motor vehicle simulators to establish the relevant human factor components that lead to level crossing crashes; and
- a study into low cost level crossing control systems for crossings in regional areas, and occupational crossings with high-speed passenger trains. This project recognises that the major limitation of providing active level crossing controls is the high cost of track-circuit-based boom

barrier systems. Increasing the affordability and cost-effectiveness of level crossing controls will allow a greater number of crossings to be controlled with train-activated measures.

The CRC is also currently conducting workshops to identify and prioritise key level crossing safety research projects into a three to five year strategy. Workshop participants include rail experts, road and rail authorities and government agencies. The workshops aim to identify projects regarding all level crossing safety issues; education, engineering, enforcement and technology. Whilst the CRC will take on a number of the projects, it is likely government agencies will adopt other key research initiatives. The ARA encourages the NSW Government if it were to take on some of the projects identified during these workshops.

For more information regarding these projects, please visit www.railcrc.net.au.

7. INTELLIGENT ACCESS PROGRAM

The ARA is currently exploring the use of GPS tracking technology as a measure to oversee the operation of heavy vehicles at level crossings with Transport Certification Australia (TCA). TCA is a government owned organisation that has developed the Intelligent Access Program (IAP).

The IAP, using GPS monitoring, aims to facilitate improved road access for heavy vehicles granted by road authorities, in exchange for agreement that the vehicles are monitored on their compliance with the conditions of access, such as permitted route and time of travel. National model legislation has been developed and enacted by some state governments.

An IAP-type solution to level crossing safety could be developed with TCA. An IAP could monitor a vehicle's location and in combination with in-locomotive and at-crossing devices, would generate an alert or warning about the approach of a hazard for both the heavy vehicle driver and locomotive.

An IAP, although developed for heavy vehicles, has the potential to be introduced into all vehicles. Importantly, it could operate at passive level crossings, and has the potential to be used for enforcement purposes.

This development can be linked to the Staysafe Committee's recommendation 53 in the 2004 Report on Safety of Railway Level Crossings.

8. INTERFACE COORDINATION AGREEMENTS

Historically, ambiguity existed between the Australian road and rail industry in terms of who was responsible for level crossings. This was primarily due to the fact that the only section of the road system road authorities were not responsible for was level crossings.

Road and infrastructure maintenance at level crossings was the rail stakeholder's responsibility however in some jurisdictions, this responsibility was unclear.

In 2006, the National Transport Commission developed a national model *Rail Safety Bill 2006* with representatives of all rail jurisdictions, the rail industry and unions⁸. The NSW Parliament enacted the model Rail Safety legislation in late 2008. The new *Rail Safety Act 2008* (NSW), commenced on 1 January 2009.

A crucial feature of the new Act is the obligation on rail infrastructure managers and road authorities to jointly manage risks at level crossings. The new provisions, which will be implemented over a three-year transition, require infrastructure managers and road authorities to enter into interface co-ordination agreements (ICA's), also known as safety coordination agreements.

ICA's will require rail infrastructure track managers and relevant road authorities, including councils, to identify potential risks at individual level crossings and share the ongoing safety management responsibilities. However, on-going work needs to continue to ensure that existing crossings,

⁸ National Transport Commission website viewed on 3 January 2009.

whether they have active or passive controls, fully comply with the current Australian Standard and are properly maintained.

The agreements will require the creation of one or more plans to combat identified risk at each level crossing. Not only will ICAs provide an environment to further manage risk at level crossings, they will ensure that road and rail authorities work together to formulate measures that manage and alleviate identified risks at each site. The legislation calls for periodic formal reviews to ensure that the risk management plans are up-to-date and practical.

This is a very important development which will help replace a culture where road and rail authorities often worked independently to combat level crossing risk.

There is the possibility that these ICAs could impose budgetary pressures on some road authorities. Clearly reducing basic level crossing safety initiatives because of a lack of money is in no one's interest. **Accordingly the ARA recommends that the NSW Government provide the appropriate level of funding assistance to those road authorities with funding pressures so that they can satisfy their remit in accordance with the terms of ICA.**

'THE ROAD AHEAD' WITH THE AUSTRALIAN TRUCKING ASSOCIATION

In 2008, the Australian Trucking Association (ATA) invited the ARA to participate in its mobile education campaign, 'The Road Ahead'.

The national campaign uses a state-of-the-art Volvo semi-trailer equipped with road safety interactive displays and other materials, to tour regional and rural Australia providing participants with important safety tips on sharing the road safely.

The ATA recognises that level crossing safety is an integral part of a safe road system and has invited the ARA to fund a level crossing education section within the trailer. The ARA believes this is a fantastic opportunity for the rail and trucking industries to increase awareness and understanding of level crossing safety.

The inclusion of a level crossing educational section is anticipated to be complete around mid 2009.

For more information, please visit <http://www.atatruck.net.au/mobile.html>.

9. CONCLUSION

Clearly there is much to do in level crossing safety. The ARA welcomes the opportunity to update the Staysafe Joint Standing Committee on Road Safety regarding level crossing safety actions and developments conducted since December 2006.

The BCG was extremely successful at implementing an array of research projects and initiatives to increase level crossing safety. It demonstrated how jurisdictional governments can work very effectively with Industry to produce cost-effective behavioural outcomes. The BCG brought jurisdictions together, pooling funding and resources so Australia worked towards safer level crossings as a nation rather than separate entities.

The Industry Level Crossing Strategy is seeing a number of successful level crossing initiatives move forward yet more is required.

A rationalisation program should be embarked upon to remove redundant level crossings and eliminate crossings in close proximity of other crossings to mitigate the risk in NSW.

Behavioural change would be assisted if the road speed limit on approach roads to level crossings located on high speed roads were reduced to 80km/hr. Similarly, the rail industry believes compliance at level crossings will improve if the penalties are increased and enforced by a greater police presence.

All level crossings have risk. This fact and the rising trend in heavy vehicle level crossing collisions reinforces the rail industry's desire to view risk assessments of level crossings located on the B-Triple Network.

In addition, there needs to be a nationally co-ordinated effort to support and undertake research and cost-effective counter-measures to improve safety for rail and road users at level crossings. Possible ITS, IAP and CRC research projects should be supported and trialled by the NSW Government.

The ARA believes every level crossing fatality is avoidable and zero deaths at level crossings is achievable.

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AUSTRALASIAN RAILWAY ASSOCIATION LEVEL CROSSING STRATEGY

1. EDUCATION:

1.1 Review driver licence tests and push for standardisation:

- 1.1.1 Conduct a State by State review of the present RLX safety content in Driver License education and test materials, and assess adequacy
- 1.1.2 Develop standard framework and recommend changes via NTC/State Government agencies
- 1.1.3 Investigate developing Learner Driver school curriculum material
- 1.1.4 Seek to run pilot program on NRMA driver training courses or similar

1.2 Create a School education program for inclusion on national curriculum:

- 1.2.1 Develop education syllabus content for schools (based on NZ and Canada)
- 1.2.2 Advocate the inclusion of RLX safety in personal safety component of National Core Curriculum

1.3 Advocate for Increased Education, Training and Oversight of Truck Drivers:

- 1.3.1 Create a RLX induction training module for Truck Drivers with Victorian Trucking Association to pilot in Victoria. (funding by Vic Govt)
- 1.3.2 Establish dialogue and create collaboration with leading trucking companies targeting truck business owners to better understand materials in use
- 1.3.3 Engage with insurance industry to seek incorporation of RLX safety in driver competency assessment as a standard practice
- 1.3.4 Engage NTC to establish an annual safe-driver certification programme for truck drivers that includes RLX safety
- 1.3.5 Advocate for equivalent health standards/ criteria to be applied to truck drivers

1.4 Continue National Rail Safety Awareness Week (NRSAW):

- 1.4.1 Organize the staging of a mock collision exercise in NRSAW 2009
- 1.4.2 Influence road authorities and enforcement agencies to conduct safety activities for truck drivers, car drivers and school children based on materials developed at 1.1 to 1.3

1.5 Continue with the National Railway Level Crossing Behavioural (BCG):

- 1.5.1 Lobby appropriate Government groups to support BCG continuation
- 1.5.2 Continue supporting BCG research

1.6 Undertake More Frequent Periodic PR Campaigns:

- 1.6.1 ARA to distribute cautionary media releases for holiday periods and Kerang anniversary (05.06.08)
- 1.6.2 Target relevant motoring and trucking industry publications as well as general press for awareness campaigns and press releases

1.7 Engage other stakeholders:

- 1.7.1 Engage motoring associations to include RLX safety in their agenda and to identify other areas in which the industry associations might collaborate
- 1.7.2 Engage with coroners regarding expert witnesses in coronial inquests

1.8 Engage an identity to be the public 'face of rail' to promote rail safety.

2. ENFORCEMENT:

2.1 Incorporate enforcement guidelines in NTC's National Enforcement Strategy:

- 2.1.1 Engage with NTC to utilise BCG enforcement pilot outputs as a basis for national RLX enforcement guidelines
- 2.1.2 Encourage Government to adopt the guidelines/strategy and increased enforcement levels
- 2.1.3 Engage NTC to link chain of responsibility requirements to education for drivers accessing level crossings.

2.2 Create a central database and improve incident collection:

- 2.2.1 Prepare a consolidated database held by the ARA which records all incidents and near-misses since the start of 2006.
- 2.2.2 Work with rail operators, regulators and unions to improve communications

2.3 Work with state governments to increase police enforcement at rail industry identified black spots:

- 2.3.1 Identify specific black spots from data collection in each jurisdiction and draw these to the attention of the authorities and government
- 2.3.2 Encourage rail operators and police (and community road safety) to collaborate at a local level to initiate targeted enforcement activities based on near miss and collision data

2.4 Develop the case for application of automated camera technology:

- 2.4.1 Commission a feasibility report conducted by Rail Level Crossing Working Group (Road Modal Group) to assess potential for automated camera technology
- 2.4.2 Research cost benefit, practicality, prioritisation mechanisms to introduce automated cameras
- 2.4.3 Review incident data and work with industry to identify suitable crossings to conduct a pilot program
- 2.4.4 Advocate in each jurisdiction for trials at priority crossings

2.5 Seek for the RLX Incident Costing Model to be Updated:

- 2.5.1 Write to Commonwealth to formalise discussions with BITRE about reassessment of RLX collisions costs (based on altered risk due to B-triple network, increased number of trucks)

2.6 Foster the development of an Intelligent Access Program (IAP):

- 2.6.1 Liaise with Transport Certification Australia to explore options for IAP to enhance enforcement of heavy vehicles
- 2.6.2 Participate in ITS Working Group to identify suitable ITS solutions and promote adoption by Government, rail and road industry.
- 2.6.3 Develop plans for government and industry to adopt ITS (low cost technologies).

3. ENGINEERING:	
3.1 Precipitate a Review of the B-Triple Network:	
3.1.1	Commission an independent risk assessment/ review of a small number of (approx 20?) RLXs on the B-triple routes, as nominated by operators
3.1.2	Based on the assessment outcomes, call on Governments to review standards / processes and reassess approved B-triple routes at RLXs
3.2 Advocate for Road speed reductions around RLXs:	
3.2.1	Advocate national adoption of 80km/hr speed reductions based on Vic initiative
3.3 Liaise more closely with each of the State RLX Committees:	
3.3.1	Arrange for the Strategy Champion and/or Deputy ARA CEO to attend a meeting of each committee across the next 12 months
3.3.2	Coordinate communication between states
3.4 Push for Better Planning Controls:	
3.4.1	Write to each transport minister re two issues:
3.4.2	A: adoption of 'enough is enough' policy (no new RLXs unless grade separated)
3.4.3	B: ensure town planning and development consent is mandated where RLX safety may be affected
3.5 Develop a platform from which to seek selected RLX Closures:	
3.5.1	Develop a more detailed statement of policy, together with some real case studies, as a basis for future advocacy to all relevant Governments (federal, state and local). Lobby to secure selected closure of redundant crossings
3.5.2	Identify with industry the specific redundant RLX's to be targeted for closure (link with ALCAM and the near miss data)
3.6 Monitor Progress of Interface Co-ordination Agreements (ICAs):	
3.6.1	Liaise with track managers to monitor the implementation of ICAs with Road Authorities and provide support to remove blockages
3.7 Visibility Standards:	
3.7.1	Liaise with major operators and track managers to ascertain current status of compliance and compliance plans with RISSB standards
3.7.2	Liaise with Track managers to ascertain intent with requirement for compliance with RISSB standards for operation on their networks.
3.8 Commission the CRC to undertake research on RLX Controls and Standards:	
3.8.1	Develop a research brief that studies international RLX control systems and standards and conducts field trials in Australia to ascertain what control systems and standards produces the largest reduction in RLX incidents
3.8.2	Advocate implementation by Government and Industry of optimal controls and call for amendments to Standards
3.9 Approach IT Software companies producing geographical information systems (GIS) to seek the inclusion of level crossing locations in their software.	