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SUBMISSION TO

**THE HOUSE OF REPRESENTATIVES STANDING
COMMITTEE ON INFRASTRUCTURE,
TRANSPORT, REGIONAL DEVELOPMENT &
LOCAL GOVERNMENT**

**INQUIRY TO UPDATE THE COMMITTEE'S 2004
REPORT INTO SOME MEASURES PROPOSED TO
IMPROVE TRAIN VISIBILITY & REDUCE LEVEL
CROSSING ACCIDENTS**

January 2009

Background

The Australian Rail Track Corporation (ARTC) owns and leases interstate rail tracks in WA, SA, Victoria and NSW. It also leases and operates the extensive coal network in the Hunter Valley region of NSW.

It also maintains under contract the extensive regional rail network in NSW on behalf of the Rail Infrastructure Corporation.

There are therefore a significant number of level crossings on the ARTC network.

ARTC is a member of the Australian Railways Association (ARA) and have participated in the preparation of the ARA submissions to this inquiry and supports that submission.

ARTC also participates in a number of other forums especially state based co-ordinating councils or committees.

ARTC is therefore aware of the issues being raised by stakeholders before this enquiry and notes that there is emerging national agreement of the key issues associated with level crossing safety management.

This submission is intended to highlight the key issues from an ARTC perspective.

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1. Executive Summary

- ARTC believes there has been an appropriate response to train illumination issues and the focus should shift to other issues associated with management of safety at level crossings.
- Management of safety at level crossings needs national coordination; funding and policy & standards and ARTC notes recent progress has been made in this regard.
- Risk at level crossings should be managed by those in the best position to control risk and therefore road authorities who control use; vehicle characteristics and controls on driver behaviour have a key role in managing those risks.
- The approval of longer; heavier vehicles on an increasing number of routes introduces new risk and the approval process needs to be reviewed and be risk based.
- National coordination of research programs and education campaigns will eliminate duplication and needs further encouragement and support.
- Road user behaviour (especially not responding to traffic control measures) has been clearly established as a major risk at level crossings.

This issue is being dealt with primarily by education but enforcement is a real and viable option.

- In the long term the risk will be best addressed by eliminating level crossings and that should be done on a coordinated basis with genuine commitment to the process.
- In the meantime advanced warning lights; road speed restrictions on the approach to level crossings; and removal of queuing and stacking issues provide acceptable solutions.
- Low cost level crossing protection systems should also be pursued.

2. Response to the Committees 2004 report entitled “Train Illumination”

The report published in 2004 focused on four key issues in its recommendations and also covered a range of other issues. We will focus only on the recommendations in this response.

a. Train Conspicuity

ARTC believes that when put in context of the accident data which shows that in excess of 75% of all level crossing accidents occur in daylight hours the adoption by industry of the new train conspicuity standard means this issue is now satisfactorily dealt with.

AS 7531.4 – 2007 Railway Rolling Stock – Lighting and Rolling Stock Visibility not only prescribes lighting standards and the requirement for reflectorized strips but also deals with livery colours to address the issue of daytime visibility.

Whilst there has been some debate about additional forms of lighting (strip lighting; strobes; and rotating beacons) there has been little if any conclusive evidence that they;

- 1 Provide any greater enhancement than existing lighting; and
- 2 Are cost effective for the perceived benefits

b. Use of ALCAM

All Australian States have now adopted the Australian Level Crossing Assessment Model (ALCAM) which has been developed from the model known as LCAM and developed in Queensland.

The model has been enhanced since its early development and in particular to measure road configuration issues such as queuing and stacking.

ARTC supports the continued use and development of ALCAM and note that there is a need to establish clear governance and ownership arrangements for it.

c. Rumble Strips

Rumble strips (including train activated rumble strips) are amongst a range of what are described as perpetual countermeasures which help motorists identify a change in road conditions ahead.

There has been considerable research into the effectiveness of these measures in Western Australia and there are large numbers currently being installed in Victoria.

Before further adoption of these treatments is recommended there should be a proper evaluation of the installation of them in Victoria

We note that the committee suggested that train activated rumble strips be investigated.

One of the largest costs of active crossings is installing train detection systems and we believe that once having achieved cost effective train detection that standard treatments

such as flashing lights and/or boom gates is a more effective treatment.

d. Operation Lifesaver

Later in this submission we will deal with the issues of education but note that key elements of operation lifesaver have been implemented within a number of education programs in Australia.

3. Management of Safety at Level Crossings.

a. Context

Level crossing issues have been managed on a State basis consistent with the historical management of the State based railways systems.

Within each State the arrangements vary but essentially they can be characterised by three factors:-

1. there is a division of responsibility between road authorities and rail authorities at the interface
2. there are co-ordinating councils or committees in all States generally convened by State Departments of Transport
3. there is specific funding for level crossing programs which vary over time and between States

There has been some attempts at National co-ordination under the auspices of the Australian Transport Council and the Standing Committee on Transport.

These initiatives have been more effective in very recent years and has recently gained some impetus with the adoption of model National Rail Safety Legislation.

That legislation requires road and rail authorities to enter into interface agreements to manage the risk at level crossings.

The only national standards that apply to level crossings are those contained in the Australian Standard 1742.7 – Manual of Uniform Traffic Control Devices, which is effectively a road standard governing road signage of which part 7 is specifically related to level crossings.

The effect of these management arrangements over time has led to :-

- 1 duplication of research and improvement work
- 2 differing technical standards in all States
- 3 lack of clear accountability for management of the risks

In recent years the issue of the consequences of incidents and accidents at level crossings has been raised to a high profile especially as a result of extreme consequence events such as the one that occurred at Kerang in 2008. However, the available data indicates that there has been an improvement in recent years in both the overall number of accidents and incidents at level crossings.

When compared to the cost and impact of other road accidents and incidents from other causes the image of this issue seems to be disproportionate.

The ARTC view of trends in recent years can be crystallized into three statements:-

1. Anecdotal evidence combined with research results on the matter indicate that there are significant driver behaviour issues especially failure to obey traffic controls at level crossings
2. increasing traffic volumes have changed the risk profile at a number of level crossings and associated with that is the impact of land use planning and development
3. heavy vehicles are increasingly the type of vehicle involved in these type of accidents

With respect to the first of these observations, a National Level Crossing Behavioural Study has been completed in a joint collaboration between the Federal & State Government and the rail industry through the Australasian Railways Association.

This study indicates that motorists do not pay appropriate attention to road rules and warning signs at level crossings. This supports the perception gained from incident investigations; monitoring and train drivers reports that road user behaviour is a significant issue.

This is exacerbated by the consequences of incidents involving heavy vehicles compared to those involving passenger vehicles. These consequences are exhibited both in terms of loss of life and injury as well as damage to and disruption of train services. Combined with this is the issue of queuing and stacking of long road vehicles and the time taken to clear the level crossing, which increases the risk associated with these classes of vehicles.

With respect to the second observation an emerging risk issue arises from increased traffic usage and associated road developments.

Again in a National approach all States have agreed to use ALCAM (the Australian Level Crossing Assessment Model) which is an analytical tool used to assess risk at level crossings and prioritise work. Since the introduction of two road risks into the ALCAM model (queuing and stacking) the priority of risk sites has changed.

Queuing is where traffic queues back across a level crossing because of delays at adjacent road intersections. Stacking is where long vehicles stopped at an adjacent road intersection (such as a road train) has its rear still not clear of the level crossing. This is a clear indication that many of the risks at level crossings are controllable by road authorities.

Changes in land use planning can dramatically change risk at level crossings and therefore this risk needs to be considered as part of the planning process.

With respect to the third issue, recent data indicates heavy road vehicles are over represented in level crossings incidents and accidents.

Finally, we would like to comment on the issue of who should be responsible for managing risks at level crossings. ARTC's view is that risks should be controlled by

whoever has the capability of and accountability for implementing the desired controls. Therefore we believe that road authorities who control use, vehicle characteristics and driver behaviour on roads have a key role to play in managing risks at level crossings.

b. Heavy Vehicles

Associated with the trend to longer heavier road vehicles are a number of issues that concern ARTC including;

- The number of accidents that involve heavy vehicles (9 out of 12 accidents investigated by the ASTB between April 2006 and December 2007 involved heavy vehicles)
- The approval process for B-double and B-triple routes
- The capacity of heavy vehicles to meet the underlying standards in AS4292.7 (the ability to clear a level crossing within the time allowed)
- Road configuration and associated queuing and stacking distances.

With respect to the approval process ARTC is unaware that road authorities (who approve route access for heavy vehicles) conduct formal risk assessments as to the suitability of the route from a level crossing perspective and especially with the interfaces.

By way of simple example if a route is approved for B double use on a highway from A to B the assessment includes any level crossings on the direct route.

In many cases the railway line parallels highways and there is nothing to prevent the longer vehicles accessing or leaving the highway crossing the railway line on minor or private roads.

This can create risk including;

- When the truck is waiting to enter the highway it could conveniently hang back over the level crossing (known as queuing);
- When waiting to gain access to the highway long vehicles hang back over the level crossing (stacking)

ARTC believes that approval of the use of longer and heavier road vehicles needs to be the subject of risk assessments which includes risk at the interfaces and the capability of heavier vehicles to operate within existing standards.

c. Co-ordination of research and programs

Because of the State based approach to level crossing management a number of research and trial initiatives have been replicated in several States.

ARSIG previously operated under the auspices of SCOT (the Standing Committee on Transport) as a means of coordinating these activities and seeking to develop National consistency.

Such initiatives include:-

- use of red-light camera technology to enforce behaviour
- use of rumble strips
- use of advanced warning lights
- development of low cost level crossing treatments for passively protected crossings
- education and awareness campaigns

In each state there are also effective councils or committees working on policy and strategy but they are not formally linked nationally.

ARTC supports the development of a revised national strategy for level crossings which provides clear linkages between all relevant authorities to achieve a nationally consistent approach to the management and funding of safety at level crossings.

4. Road user Behaviour at Level Crossings

a. Current Understanding

In recent times there has been emerging evidence that motorist's behaviour at level crossings is a significant contributor to safety issues at level crossings.

That evidence includes;

- The ATSB Rail Safety Bulletin issued in April 2008
- The National Road Users Survey undertaken by the Behavioural Coordination Group
- The targeted empowerment and education trial also conducted by the Behavioural Coordination Group

The latter study found that less than 20% of vehicles stopped at the stop signs at the level crossings used in the study.

Clearly whilst elimination of level crossings or alternatively risk mitigation by engineering is important, changing road user behaviour at level crossing is the highest priority.

b. Education

There is a clear need to treat road user behaviour at level crossings in the same way as other road user rules and we would support the use of public awareness campaigns.

Several States have developed public awareness campaigns using targeted advertising and events such as Rail Safety Week which has in successive years focussed on level crossing behaviours.

There is as we have pointed out elsewhere would benefit from national coordination.

Again the information from the National Behavioural Study should provide guidance.

c. Enforcement

Whilst train drivers often report incorrect behaviour at level crossings it is difficult for them to obtain vehicle licence plate numbers and to follow up with local Police.

Several States have been investigating use of red-light camera technology to provide for targeted enforcement.

This initiative should be pursued.

There is a case for the police to undertake targeted enforcement of road rules at high use level crossings and where there are regular reports of inappropriate driver behaviour.

The greater visibility of police enforcement action will provide greater reinforcement of road rules and revenue base to offset additional police costs.

5. Eliminating Risk

a. Rationalisation of the Number of Level Crossings

The simplest way to eliminate level crossing risk is of course to eliminate level crossings

In addition to public road crossings there are extensive numbers of crossings which across the country are commonly called private or occupational crossings which typically provide limited access to private properties.

Many of these have existed for a long time and circumstances have changed where, for example, alternative areas to the property is available or properties have been amalgamated.

There is also the capacity to rationalise public level crossings.

ARTC believes that a constant process of reviewing and rationalising level crossings is an important process which should be maintained on an ongoing basis.

b. Advanced Warning Lights

The use of advanced warning lights prior to protected level crossings has been in use for some time in Australia and are now described in AS1742.7

We believe it is generally accepted that the use of these systems enhances the effectiveness of level crossing protection systems.

c. Speed Restrictions on the Approach to Level Crossings

An alternative to advanced warning signs is to create a change in state of the road conditions approaching level crossings by introducing speed limits.

d. Removal of Queuing & Stacking Issues

Road authorities should examine the circumstances where these issues arise and apply the appropriate treatment which would include use of slip lanes; integrated controls with traffic lights and roundabouts at adjacent road intersections.

In light of the recent ATSB report, there is also a need to ensure that the approval of routes for heavy vehicles (especially long heavy vehicles) takes into account both the ability of the vehicle to clear the crossing within standard times and also that issues will not arise from stacking.

e. Low Cost Level Crossing Protection System

ARTC supports Victorian and other States initiatives to develop a low cost enhanced warning system for passively protected level crossings.

Many crossings are protected by stop signs and the cost to upgrade to full protection systems (booms and flashing lights) is prohibitive.

As many of these crossings are in remote areas there are no train detection systems for signalling and the cost of power supplies are very high.

A simple enhanced warning (such as an orange flashing light) could be run off solar power.

The characteristics of such a system should:-

- Be able to run on solar power
- Have the same reliability levels as road traffic signals
- Have a simple and reliable train detection system, if the system fails the underlying protection is relied on (the stop sign remains effective)
- The system should be incorporated into the appropriate standard

The use of such a system provides a good opportunity to maximise risk reduction.