# **ROAD SAFETY COMMITTEE**

# INQUIRY INTO IMPROVING SAFETY AT LEVEL CROSSINGS

## Melbourne — 31 March 2008

### Members

Mr J. Eren Mr T. Mulder
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Mr C. Langdon Mr P. Weller
Mr S. Leane

Chair: Mr J. Eren Deputy Chair: Mr D. Koch

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### Witnesses

Dr J. Potter, senior manager, safety, and

Ms J. Powning, manager, policy, National Transport Commission.

**The CHAIR** — Welcome to the public hearings of the Road Safety Committee inquiry into safety at level crossings. All evidence taken at this hearing is protected by parliamentary privilege as provided by the Constitution Act 1975 and further subject to the provisions of the Parliamentary Committees Act 2003. Having said that, any comments you make outside the hearing may not be afforded such privilege. The evidence is being recorded; a proof version of the Hansard transcript will be provided to you at the earliest opportunity for you to correct as appropriate. Could you please state your full name and the organisation you belong to and proceed with your presentation?

**Dr POTTER** — My name is Jeffrey Potter, and I am the senior manager, safety, for the National Transport Commission.

**Ms POWNING** — I am Jan Powning, and I am the manager of policy at the National Transport Commission.

**Dr POTTER** — Thank you very much for the opportunity to come and give evidence before you today. I should start by saying that there is nothing on the current or past NTC work program that specifically deals with technology at level crossings, so please do not feel, as I talk through what we are doing in terms of improving safety at level crossings and our involvement with national ones, that there is a big bang coming at the end and we pull out the technological innovation that we are working on.

At least currently that is not the case, but as I hope will become clear during the recitation, it is part of our role to look as broadly as we can to where we can add value to improve safety and productivity across the national system.

## Overheads shown.

**Dr POTTER** — I will start by outlining what the National Transport Commission is. We are an independent commission that was established in 1991 with intergovernmental agreements and commonwealth legislation as the National Road Transport Commission, and after a review that was undertaken in 2002 that organisation was replaced, again by commonwealth legislation, with the National Transport Commission and a new intergovernmental agreement with an expanded role to deal with regulatory and operational reform in road, rail and intermodal transport rather than purely with road transport as in the original brief of the National Road Transport Commission.

The commission reports to the Australian Transport Council, which as I am sure you know, is all state, territory and commonwealth ministers for transport. I have lifted a quote directly from our intergovernmental agreement which is that we have the goal of 'improving transport productivity, efficiency, safety and environmental performance and regulatory efficiency in a uniform or nationally consistent manner'. We do not have any role in the actual delivery or management of the transport systems in the jurisdiction. We are very much there as a reflection of the constitutional reality that although there is a desire and a need for national outcomes in transport in virtually every area connected with land transport, all of the authority resides in the states, so we are there to negotiate that agreement. It is then up to the states and the territories to pass the agreed legislation to implement it.

In terms of railway level crossings, what I want to touch on today is just some of the areas where the NTC has had involvement over the few years, since our creation, with rail as well as road responsibilities — that is, we are observers in the Australian Rail Crossing Strategy Implementation Group (ARCSIG). We are also on the rail level crossing behavioural coordination group, which is a much shorter-term task group that is drawing towards the end of its original tenure.

I will talk briefly about the work we have done in road network classification guidelines in terms of the criteria that road authorities need to undertake to ensure the safety and appropriateness of road networks, particularly for performance-based standard vehicles and larger higher-productivity vehicles than some that are currently on the road network.

Finally I will talk about the national rail reform, the Rail Safety Bill and particularly the rail safety model bill interface agreements. We have a very large amount of detail on the slides on those, which I do not think we will need to talk through, but we will leave those with you with the detail of how those agreements between the various parties need to work.

Just briefly about these two national groups in which the NTC is involved, but in which we are participants rather than parents of these as they both pre-date our involvement in them: the rail strategy implementation group established the national railway level crossing safety strategy which was agreed to by the ATC in 2003. That is a group which is largely composed of representatives of the state rail level crossing groups as well as Austrade's rail safety regulator representative and industry representatives.

NTC has been an observer on that since we became involved in rail through the rail reform process, just to ensure t there was a flow of information between what the rail reform process was doing and what the priority

issues were for this aspect of rail operations and the rail crossing safety strategy.

The other national level crossing group we are involved with is the behavioural coordination group. This was established in 2006 with funding for two years provided by all jurisdictions, and a secretariat provided by the Australasian Railway Association. It looks very much at the behavioural interventions to improve the safety of railway level crossings. Unlike the ARCSIG group, it is heavily represented by road authorities, particularly road safety authorities, which brings a different perspective to the sorts of projects that group has been undertaking. It also has police as well as rail safety and rail industry representatives.

**Mr KOCH** — Jeff, will there be some recommendations out of a report coming from the behavioural group?

**Dr POTTER** — There will be. There are some specific projects that are just in the process of being finalised, and the group is actually meeting in Brisbane on Friday to finalise, firstly, the survey of level crossing users' behaviour and attitudes, which I think produced some quite surprising findings to many of us about the lack of awareness among road users of the behaviour expected of them at level crossings. Even such simple things as something like 20 per cent of the respondents of that survey, which was over 4000 respondents around the country, were not aware of any penalties associated with non-compliance with level crossing rules.

Ms POWNING — And there is a percentage of risk-takers too. That was about 24 per cent.

**Dr POTTER** — That is right.

**Mr KOCH** — Who were prepared to show their hand?

**Ms POWNING** — Yes, prepared to say they had taken a risk.

**Dr POTTER** — That they would regard themselves as risk-takers. It is quite an interesting report. It has not yet been produced by the group, and, as I said, I am a player rather than an owner in that, so I am reluctant to pre-empt the finalisation and release of the report.

**Mr KOCH** — We look forward to its production; we really do.

Ms POWNING — Most interesting.

**Mr KOCH** — In saying that, Jan, do you play a policy position on the back of some of those recommendations from the NTC's point of view, or — —

Ms POWNING — No, those recommendations have come out of committees which have generated the policy. There are some actions that will come out of these reports, and the NTC will look at its role in terms of implementation but not a policy role — —

**Mr KOCH** — A reflection.

Ms POWNING — Yes.

**Dr POTTER** — The second specific project is the pilot enforcement education program which was conducted at four level crossings in Victoria which had boom gates and lights, lights only, stop-sign control or give-way sign control, and also one level crossing in the Northern Territory that was the site of a particular crash. Virtually all of the traffic at that level crossing was within the direct control of a mining company to which it was provided. They now assure us that the only reason why that mine does not have a soft drink machine anywhere on site is because the contractor delivering it failed to stop at the level crossing and had a bit of an argument with the security guard at the mine about it. The entire organisation was black-banned from ever entering the mine site. That is one of the most frightening examples of the power of commercial engagement to influence behaviour when you are in that sort of position to control them. It is very serious. There is also a website for information exchange that is hosted by the Australasian Railways Association. Its website is a sort of one-stop shop for jurisdictions to find out what is being done, what initiatives are being pursued by all states and territories, and the flow of information to it to facilitate information sharing and picking up best practice from their counterparts. Recently a national workshop was held on level crossing safety where some of the preliminary results of these were presented. The group's funding expires at the end of June this year, and it is seeking to get an extension to continue the work. It has begun, but with the changes to transport policy management nationally with the transport framework plan that has come out, it is a little uncertain at this stage as to just how these things are going to be picked up and taken forward. It should become more clear over the next month or so, but I am not really sure what its future is at the moment. Also it is developing some template publicity, based on those findings, that can be picked up and used around Australia by relevant target groups.

The third thing I was going to mention is the road network classification guidelines, which are part of the materials that have been produced for performance-based standards and B-triple networks, to provide guidance for road authorities in assessing the levels 1, 2, 3 and 4 routes that correspond to the different performance requirements of the vehicles. The performance-based standards scheme is based around regulating vehicle access to the roads on their performance against particular key safety criteria, rather than on

just dimensional characteristics without regard for things like stopping distance, ability to maintain a straight line, and swept path as it turns a curve.

In terms of matching the vehicle's performance to the suitability of the road to carry a vehicle of that type of performance, we have produced the road network classification guidelines, which specifically include the consideration of: are there level crossings on the route and, if so, are there issues such as sighting distance and available stopping time, particularly in terms of uphill or downhill grades on the approach to them; and, in the case of a controlled intersection, whether, when they start, the length of time between the red lights commencing to operate and the boom gates commencing to come down are going to be sufficient for a vehicle — that is, within its stopping distance — to clear it before the boom gates come down? I know that this has been an issue in some jurisdictions with very large mining operations, with the boom gate clipping the back of B-doubles or road trains.

**Mr KOCH** — Or dropping on them.

**Dr POTTER** — Yes.

Mr MULDER — Does this pick up passively controlled level crossings as well?

**Dr POTTER** — It does, in terms of sighting distance on grades. It deals with both passive level crossings and other intersections where the same issues arise.

**Mr MULDER** — And all that information is on the Web?

**Dr POTTER** — Yes. I have a copy of the guidelines here, which I will leave with you, but it is all available on the NTC website.

**Mr MULDER** — Is that information available as a result of an ALCAM audit, or has some other type of audit picked that up?

**Dr POTTER** — It is drawn from the existing standards. It also references ALCAM and suggests an ALCAM audit, in association with actual site inspections and case-by-case consideration of the suitability. I guess with all the road network classification guidelines, one of the considerations for a road manager is: if you want this type of vehicle on this length of road, what do you have to do to upgrade it to a standard that can accommodate it? Certainly in that context, an ALCAM audit would be a valuable contribution.

In terms of national rail reform more broadly, Victoria is probably the last place that needs to be told this. I think all the national reform legislation has been passed in Victoria. In fact, the main bill was passed in Victoria before it was approved anywhere else, because of the close relationship between the Victorian rail regulators and the DOI reform program. ATC agreed that there needed to be a national policy on key safety issues and a consistency in the regulatory framework for rail safety. This led to the national model rail reform bill. Jan, you might like to speak a little bit to this, as this is very much your doing.

Ms POWNING — We want to talk specifically about the interface agreements for rail-road safety. The context for that is the national rail reform program which, as Jeff said, was initiated in 2005. A large part of it has been legislatively implemented in Victoria. I will quickly give you an overview of what the national rail reform comprises. It is the rationalisation of the regulatory instruments, particularly the development of one national model rail safety bill, which was passed by the ATC in June 2006, and model regulations, which were passed in November 2006.

We have those in place as a national model and they come into effect as each jurisdiction adopts them into their own legislation. COAG set the date for doing that as July 2007 and to date only Victoria has met that deadline. In other jurisdictions, there is a lot of goodwill. There seem to be parliamentary counsel complications. In Queensland and New South Wales there has been a debate over how OHS duties will impact on rail safety. I will not go into that, but that is one reason why there is a delay. New South Wales, Queensland and South Australia are aiming to have the legislation in place by July this year. The other jurisdictions are talking about 2009.

Also as part of this rail reform, in December 2007 the first set of six national rail safety guidelines, which have a very comprehensive subject matter, were approved. There has also been a review of the institutional framework that sits underneath legislation. Phase A has been completed and phase B, looking into train driver licensing and a case for and against a national regulator, is being conducted at the moment.

Interface agreements are agreements between road infrastructure managers and rail infrastructure managers. They come from an ongoing dialogue that has been undertaken for some time. Rail infrastructure managers and rail operators are of the view that level crossing incidents are one of the major causes of fatality and potentially catastrophic incidents, and they are terribly concerned about them, but on the general road statistics that are kept, they are not such a large category, so you get a bit of a mishmash there of the perception of the priority of them. The emergence of the interface agreements in the national model legislation is really quite a breakthrough in terms of putting mutual obligations on road and rail infrastructure managers to mutually come together to tackle the question of safety at road and rail interfaces.

**Dr POTTER** — Road managers still have the obligation to allocate their funds in accord with all the risks they face. This is a means of making sure that the level crossing risks make it onto that list for prioritisation, which has not always happened with every road operator around the country.

Ms POWNING — That resulted in the ATC approving in December 2007 the amendment bill no. 2, which amends the national model legislation. It was unanimously approved and deals with interface agreements. There is a three-year transitional period for implementation. That means that the infrastructure managers for road and rail have three years from the point of its adoption in each jurisdiction. In Victoria that was included in an amending bill in December. I would need to check. I know that the proclamation date has already passed, but I cannot be categorical about whether it has come into effect in Victoria or the implementation date is still to be reached. However, this is now within the rail safety legislation and there is a three-year transitional period for the parties to put the interface agreements in place.

It provides for new complementary obligations on rail transport operators, rail infrastructure managers and road authorities and the owners and managers of private roads to jointly manage the safety risks where two or more railways meet or if there is a road and rail interface. There is a broad definition there of road or rail crossings. It not only includes the obvious one, which is rail level crossings where we are used to seeing them, but it also includes parallel running. In this state that occurs probably in regional areas, but in Perth, in its metropolitan system, a large amount of the metropolitan rail runs parallel to the roads, so there is a safety issue there.

The mutual obligations enable all the parties above, listed here, to jointly or separately identify and assess risks and to adopt the identification and assessment carried out by the other party, so that is what they would be coming together to do jointly in an interface coordination context. Rail transport operators have to identify and assess the safety risks, determine measures to manage the risks and seek to enter into an interface agreement with the other party. For the first time we have the rail safety legislation and that also puts a mutual obligation on managers of public roads and managers of roads other than a public road. With the manager of roads other than a public road, the instigator can be the rail infrastructure manager who would advise the road manager that an interface agreement or steps to enter into an agreement would be necessary.

**Mr LEANE** — Can I just go back — there needs to be a risk management done on where a rail and a road run parallel by both the road authority and the rail authority?

Ms POWNING — Yes.

**Mr LEANE** — And I know in Victoria a lot of our rail runs parallel to a road as well. Do you know what sorts of risks have been identified as far as where they do run parallel?

Ms POWNING — Those steps have not yet been put into place in Victoria because this legislation would have only come into place at the beginning of this year, but the types of risks that occur are that the train, for example, can derail off that rail onto the road, and that has been known to occur. There was a terrible incident in the UK where that actually happened.

**Mr LEANE** — The other risk would be the opposite?

**Ms POWNING** — The opposite, particularly if you have a large heavy vehicle or a heavy vehicle carrying dangerous goods, for example, so yes, really we are talking about the possibility of there being some kind of exit off their own track.

**Dr POTTER** — The definition of rail crossing includes a grade separation, so something like a concern of a fuel tanker coming off a bridge over a railway line is a risk that needs to be identified and managed as part of this process. It is not really as broad as can be to try to ensure the safety of the whole operation.

Ms POWNING — This slide goes through the parties who are affected by the new laws: state government authorities who own and control public roads, and that is a vast majority of roads, particularly large arterial roads; local government controlled public roads — many are LGA controlled roads; Crown land, where the interfaces occur on Crown land, the Crown becomes effectively another road authority with the same obligations, or the government department responsible for the lands, rather; owners or persons responsible for roads other than public roads, so it could affect also farmers, individual land-holders and commercial companies, particularly mines which might be in a remote area with a large road network criss-crossing; and rail infrastructure managers.

There is joint work that does not necessarily come at a very high cost that can be undertaken to reduce the risk, coordinating the timing of level crossing signals and boom gates with traffic lights, for example, and another one of the issues listed here, with the departure time assigning priority to road traffic departing in an area where a level crossing exists. In Victoria at the Nunawading intersection and level crossing on Nunawading Road there was a camera put there on the level crossing. You probably may be aware of that. That has been monitoring driver behaviour for some time. One of the very early issues found was that there

needed to be better coordination between the intersection lights and the level crossing, so that pilot actually showed up that issue. But it is an issue which can potentially occur with better planning, which also again may not necessarily be high cost because you are doing something preventively in advance. So it is coordinating the level crossing signals and boom gates with traffic lights, moving warning signs, considering the level crossing safety issues when planning heavy vehicle routes and installing interlock advance warning signals. Clearing vegetation is an obvious one. There were a lot of other suggestions which were already in the Australian standard.

**Dr POTTER** — The interface agreement requires them to assess the risks and come to an agreement. It does not prescribe what that agreement has to entail. There is a range of things that will be in it depending on the specific circumstances and what needs to be dealt with.

Ms POWNING — I will not go through this in as much detail as on the slide, but these slides set out what is covered by the legislation as to what comprises an interface agreement, so it covers not only the scope of the assets that have come within the ambit or should come within the ambit of the agreement but also the processes which the two parties or more than one party would follow to identify and assess the risks to come up with measures on which they can agree to deal with those risks, how they are going monitor it, how they are going to keep it updated. It can apply to multiple parties, more than one location, and it can be a generic agreement for all of the interfaces, all the like interfaces that the party might have, so in terms of costs there has been some concern, of course, about does a rail company or a local government have to make 200 assessments and 200 agreements. They can come up with one agreement in which they can categorise or cluster their particular interfaces and implement like measures for those particular interfaces.

**Mr MULDER** — Can I just ask a question there? In terms of cost, the costs of the works are actually identified under the agreement. How is that structured? Who picks up the cost for the works that are identified under these agreements?

**Ms POWNING** — The parties would.

Mr MULDER — So is it local government or is it the rail authority or is that a negotiated outcome? Dr POTTER — It depends very much on what the work is, who is responsible for it and, as you say, what agreement they can negotiate between them. If it is a very high risk or one party that has the responsibility for the other that does not have any possibility of paying for it, then it may well be that that is part of the obligation that is on them to manage their risks as low as possible. The power of this is that it does force that negotiation to occur. It does ensure that both parties have to come to the table and assess the risks

Ms POWNING — It is an issue for local government — and there was 12 months or so consultation — on the need to bring this potential legislation to the attention of local government, both at national level and in each of the jurisdictions, so that they were aware of the issues that they could be facing. Yes, the cost is a consideration for them.

**Mr KOCH** — These agreements are more than obligations? They are binding — —

Ms POWNING — Yes.

and identify jointly how they can deal with it.

**Mr KOCH** — And have penalties on them?

Ms POWNING — Yes, they are. The legislation does not actually say that you must agree because parties cannot be forced to agree, but the legislation says they must enter into the steps to aim to achieve an interface agreement. Can we go to the next slide? If they negotiate for some period of time and then cannot reach an agreement then the legislation allows for an authorised person to step in to broker that agreement, and that could be the state's rail safety regulator or a person appointed by the minister to have power to bring the parties together to either broker an agreement between them or — —

**Mr KOCH** — Bring resolution.

**Ms POWNING** — Bring about some action; reach a resolution.

**The CHAIR** — Is there a time frame for that agreement?

Mr KOCH — Three years?

**Ms POWNING** — No, three years is the implementation.

**Mr KOCH** — Sorry, it is the implementation.

**Ms POWNING** — Actually I cannot answer that. I cannot remember that point of the legislation. I would have to put that on notice, but it is an important question.

Just before I finish, because that is the last slide, would you mind going back? These give you the typical steps they would go into, so it is quite comprehensive. There is a guideline as well, an information sheet, which is on the National Transport Commission website, and has been developed by the industry jointly with the jurisdictions — the rail safety regulators of each state — to generate an information sheet, which was motivated by the need to inform local government associations in particular.

Again, going back to the last slide please, Jeff, to wind up, just to remind you again that from the point of implementation here in Victoria, all I am saying is that I cannot give you the precise date. We are talking about really the start-up of this legislation in this state now — the three years. That is because the parties concerned, the local government or the rail and road infrastructure managers, could have many interfaces that come within their responsibility. Ministers decided on that. The ATC chose three years for implementation. It is actually quite innovative legislation. With Victoria having this in place in advance it will be interesting to see the steps that are being taken.

**Mr KOCH** — It is being tested?

Ms POWNING — Yes, it is.

**Dr POTTER** — That really covers what we prepared to present to you today. If there are any questions about that or about any other matter that you think we can help you with, we are very happy to answer them.

Mr WELLER — Jeff, are there any programs in other states that could be used here in Victoria? Dr POTTER — At the moment Victoria is probably trialling more specific plans to address level crossings than any other state, which is not surprising given the recent unfortunate history of events in Victoria. Probably the one that stands out as novel is the intervention in the Northern Territory where a large proportion of the volume of traffic on the Ban Ban Springs level crossing is tied to a single employer that has taken some very strenuous steps to ensure that they get compliance not just by their employees but by anyone coming and doing business with them. They began by threatening instant dismissal for any driver who did not come to a full stop at the level crossing, get out to have their card marked in a box beside it to be sure there was no train coming, and get back in. They then eased that back so that drivers must come to a full stop and wait and see before moving. As I mentioned before, they have no tolerance for any other company with which they have a contractual arrangement that does not comply with that.

Since they introduced that they have had six months with only three incidences of non-compliance with the stop sign at their level crossing with a reasonably high load. Two were contractors and I think the third was a private vehicle that had got lost. It is a specific solution to a set of circumstances where you have a high proportion of traffic volume that is linked to a single body that has some influence over them.

Mr LEANE — How do they monitor that, Jeff? How do they monitor that cars are actually stopping?
 Dr POTTER — There could be a camera there. They have had a security guard there intermittently, particularly in the early stages to modify and to explain to non-employee drivers what was expected of them.

**Mr LEANE** — Have they only got one crossing?

**Dr POTTER** — They have two crossings that it relates to, but that was the only one that was part of the particular evaluation trial.

Mr LEANE — Are they doing this as a response to an accident, or because — —

**Dr POTTER** — Yes. To a truck collision with the Ghan on the Ban Ban Springs level crossing. **Mr TREZISE** — How do we determine what is occurring not only nationally but internationally?

Are we members of any association? Is there any type of strategic steps we can take to ensure we are up-to-date with what happens internationally?

**Dr POTTER** — I guess we are corresponding members, principally through the association with the Australasian Railways Association, with some of the programs such as Operation Lifesaver and its annual series of level crossing safety seminars and I think it is also in Europe. Of those probably the Canadian and North American ones are of the most relevance to Australia partly because there are relatively few non-grade separated crossings through Europe now. They really have not been making them for a while, but certainly they have the same issues. So not through membership of an association but certainly through regular correspondence with the people involved.

**The CHAIR** — How will the implementation of uniform rail safety legislation improve safety at a level crossing?

**Dr POTTER** — There are a couple of elements to that. One is the ability for the rail operators to know they are dealing with a single set of rules and risk assessments for use through the uniformity that comes with the interface agreements that is going to bring all of the road authorities to the negotiating table, if you like, to address these risks and properly prioritise them for addressing problems. In terms of level crossings probably the biggest measure that is going to be an advantage is the fact that — —

It is always the problem with level crossing crashes that there are so many with a comparable level of risk that it is hard to know what of 10, 50 or 100 apparently identical level crossings around the country is going to be the one where a particular crash is going to occur at any given time. This provides the rail operators who identify this risk on their system with the ability to get all of the corresponding road authorities to come to agreement as to how to address those problems in what we hope is going to be the best practice and most

effective way to reduce the risk as far as possible.

Mr KOCH — Once all that is aligned we come into the area of driver behaviour. That is the next phase. It is probably as important a phase as any. Lining it all up as the NTC is doing currently with these agreements I think is one thing, but then we have got to actually enact that with the driving public or the using public. Are there any areas there that you see that we should be concentrating on further as a committee to assist with the outcomes that have been put together under these agreements?

**Dr POTTER** — The reason why we are involved in the behavioural coordination group and the ARCSIG group is to be able to identify where there is somewhere where we can get in and add value when things emerge. We are certainly looking at the enforcement of education trials to see whether there is value at this stage or whether it is too soon to develop some national enforcement guidelines built on the findings of that study. I think that is still not certain. The range of things which are being trialled in Victoria at the moment — four of those five sites were Victorian because of that concern about what can be done and the willingness to experiment with different and properly evaluated measures. I think that is probably the most important thing.

I am sure that during the course of your hearings you will have a very wide range of suggestions offered to you as to what could be done and what might have a benefit. It is absolutely critical that an evaluation program comes along that is measuring them all against the same yardstick.

Ms POWNING — For example, Jeff talked about the reports that are soon to come from the railway level crossing behavioural coordination group. One of the reports that we mentioned will cast some quite interesting light on driver behaviour in terms of their knowledge of the law and penalties, their risk behaviour and that sort of thing. There are also reports on behaviour in relation to technological and other trials. For example, slowing down traffic and the speed at which vehicles cross level crossings is being trialled at present in Victoria, so other parties will be able to talk about that in more detail. It is about behavioural responses to putting up traffic lights rather than the traditional bells and whistles. Drivers are understood to have different behaviour to traffic lights than to railways, so again more trialling is needed to see whether that is effective. I understand that people coming to talk to you will be able to mention that in more detail since it is being tested out here.

**Mr KOCH** — We see a lot of the principles being lined up, and that is fine; it is the practicalities of the usage of the crossings and that behavioural area which is the primary one. I do not think it is the secondary; I think it is the primary.

**Dr POTTER** — I would say there are some things that came through, and of course the research that is being done particularly by CARRS-Q in Queensland with rural level crossings. There is an alarmingly high belief among drivers that a train will stop, but the train cannot stop. We all know that, but unfortunately not everyone out there — —

**Mr KOCH** — But I think in Victoria recent history is saying to us that rumble strips are fine in principle but not effective in practice.

**Dr POTTER** — The point that is always raised as a barrier to doing anything is that it is so expensive to treat a level crossing, and it is that expense that makes it so critical that the evaluation is done right so that when the money does get spent, it gets spent on the right thing.

Mr KOCH — Very true.

The CHAIR — Thank you very much.

**Dr POTTER** — Thank you very much for your time.

Ms POWNING — Thank you.

Witnesses withdrew.