ROAD SAFETY COMMITTEE

Inquiry into Safety at Level Crossings

Melbourne—3 March 2008

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Witnesses

Mr A. Osborne, Director, Public Transport Safety Victoria; and

Mr C. McKeown, General Manager, Safety Systems, Public Transport Safety Victoria.

The CHAIR—Welcome to the public hearings of the Road Safety Committee's inquiry into 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 that you make outside the hearing may not be afforded such privilege and we are recording, as you can see, the evidence and we will provide a proof version of *Hansard* transcript at the earliest opportunity so you can correct it as appropriate. Members of the committee here today are Terry Mulder, Craig Langdon, chair John Eren, deputy chair David Koch, Sean Leane and Paul Weller; executive officer Alex Douglas and our research officer Laurie Groom. If you could state your name and organisation that you belong to and proceed with your submission and if possible we will ask questions as we go.

Mr OSBORNE—Yes, we would be very happy with that. My name is Alan Osborne, I am the director of Public Transport Safety Victoria, and Chris McKeown, who I know presented the last time to the out of session committee. Chris is general manager, safety systems. Chris is the technology arm of PTSV. I would like to thank the chair and the committee for taking our evidence today. Technology, as you know, which is slightly ironic given that it is an inquiry into technology, the technology has failed us somewhat. There are, I gather, some slides coming along but first and foremost I will use the low tech version.

The first thing I really wanted to cover was in the letter that I submitted to the committee there was only really one small change from the last time that we submitted and that was a typo in relation to an acronym. What we were meaning to say was 'low cost level crossing warning devices', and what appeared in the previous submission was a phrase called 'low cost advance warning signs'. That change has been made in the form of a letter.

What is the role of PTSV in relation to railway safety at level crossings? First and foremost we have a new act in the piece of legislation that we administer which is a fairly chunky document called the Rail Safety Act. I heard the committee mention it several times before, so I am not proposing to go through an exposition of the Rail Safety Act, perhaps to say that in terms of PTSV's role we do really two things in all this: we accredit railway operators based on their competency and capacity to manage safety risk in a railway sense. That is the kind of primary thing we do, and we do that in the form of applications that are given to us. We assess those applications and we either accredit a rail operator or we do not. That is the first job. That is a snapshot in time. We obviously need to keep our surveillance systems working to make sure that there is ongoing compliance with the Rail Safety Act.

The second important task that we do is to carry out compliance inspections and we have a fairly robust inspection process which gets refreshed on an annual basis. The third thing I wanted to mention is that within this legislation is a legal test. That legal test, the phrase is, that the railways must be safe so far as is reasonably practicable, and that is something that will no doubt get tested out through the courts over the years. It has already had some testing through occupational safety and health legislation already. For me, in very simple terms, it is about balancing risk against cost and that is essentially the mandate that we are given in the Rail Safety Act. That does not mean as a rail regulator we can go in and insist on disproportionate things being done in relation to that risk. There has to be a cost dimension to it. Therefore, all that we do is geared by that legal test. Indeed, the operators also have to achieve that level of safety.

The key question is are our railways safe as far as is reasonably practicable at this point in time. My answer to that at this point in time is that in overall terms, yes, they are. Within that list of risk priorities, level crossings do present themselves as one of the highest risks in terms of train occupants. The other sorts of risks that we look at are obviously train derailments, train collisions. You see through time occasional train accidents in Australian history involving trains running into each other, trains derailing, trains running into other objects and so on. Level crossing is one risk amongst a number that PTSV monitors. Level crossings, in terms of the train passenger component of that risk, are coming out as the highest level risk across all of those risks. It is really important that we keep a focus on level crossing safety and that is particularly important because safety risk will not stay still because it is a function—and this is the last of the four dot points—we do have increased volumes of road traffic and we do have increased mass of heavy road vehicles. We are looking at an increased number of train services to cope with demand, and we are also looking at increased speed of rail services. This question of being safe as far as is reasonably practicable is a bit of a moving feast: to keep in tune with what is happening to risk, what is happening with technological advancement and are those technological advancements possible to be implemented at a cost proportionate to the risk.

Over the page, this is a 10-year snapshot of fatalities at level crossings. The darker blue are the fatalities as a result of occupants of road vehicles; the purple colour is the pedestrian fatalities that occur at level crossings, and the paler blue is the total train occupants. In 2002 that was the Benalla accident; in 2006 that was the Trawalla accident; and 2007, 11 fatalities due to the Kerang accident.

Mr KOCH—Alan, how long before 2002 do we experience train occupants losing their lives, going backwards down into the 90s? Was it ahead of being quite a period of time—

Mr OSBORNE—It was quite a period of time, yes. These spikes that we are seeing here are a new phenomena and are probably a function of the things I mentioned on the previous slide in terms of volumes.

Mr KOCH—Thank you.

Mr OSBORNE—It is quite difficult to drill down into these small numbers in that sense, but behind these numbers are collisions—actual collisions where fatalities have not been caused—and also near misses. Probably, as the committee know, the reporting culture around near misses is very difficult to get behind and to understand, particularly with the definitions of near misses in terms as to where the data works in railways. If a train driver has to adjust his driving pattern in the form of braking up to a level crossing and does not hit a vehicle, then that will be counted as a near miss, but if a train vehicle was very close to that vehicle and did not have to apply his train brakes, then that would not really be counted in the data as a near miss. This is something that we are looking at nationally as definitions.

There is also another issue in terms of reporting of near misses. If a road driver goes across a passive crossing, goes straight across there, and suddenly remembers, 'Oh, I must have gone through a level crossing,' we obviously would not get to know about that kind of information and we do know that those kinds of events do happen. That is a snapshot of fatalities.

Mr KOCH—I might be misreading this. Is that for the state of Victoria?

Mr OSBORNE—Victoria.

Mr KOCH—Last year we only had two vehicle occupants killed at level crossings?

Mr OSBORNE—In 2007 calendar year, correct.

Mr KOCH—Yes, and only two pedestrians for the whole year.

Mr OSBORNE—Correct.

Mr KOCH—Our statistics were saying something more than that this morning.

Mr LANGDON—Weren't they doing seven-year averages?

Mr OSBORNE—Yes, they were.

Mr LANGDON—It was not year by year.

Mr KOCH—Well, pedestrians were 26 this morning which is more than two.

The CHAIR—These are yearly ones. These are yearly totals. It is not the average over seven years.

Mr KOCH—The only two people we lost in vehicles last year were a truck driver at Lismore, and one other.

Mr OSBORNE—The next page shows you three fatalities that have occurred this year, 2008—Mornington, Hockings Road and in Bendigo. Over the page: safety risk mitigations under way. A lot of this

was covered this morning, so I am not intending to dwell on this. There is an unprecedented amount of funding that is going into trying to address this risk. That program is risk based. I know there are some discussions around the ALCAM system and the risk ranking and those sorts of things, but certainly from a regulatory perspective I do not know how else you could do it than other than on a risk based approach. I believe the ALCAM data is currently being compiled in a way that will give us a risk ranking—and that we will be able to see that around about April is my understanding—of a different formatting of risk and therefore a new program which will emerge as a result of that. I really think having a risk based approach to this is very good and is something that has been in place in other states of Australia for a little while.

New mitigations that have been trialled, you heard about those this morning—active advance warning signs, rumble strips and enforcement cameras and, for the future, behavioural research of various kinds and also new technology based mitigations being evaluated further.

Mr KOCH—Before you move from this page, unprecedented funding, can you expand on that?

Mr OSBORNE—For the 10-year period that we are in there is more funding—circa $250 million—going into upgrades and the increased funding for the new program of rumble strips and enforcement cameras et cetera. Within that $250 million there is also a grade separation with Middleborough Road as well. If you go back in time you will find a lower level of funding addressing this risk.

Mr WELLER—What period of time do you say the 250 million was for?

Mr OSBORNE—It started, I believe, last year. The new upgrade program was approved last year. It is for the next 10 years.

Mr WELLER—It is 25 million a year or an average of that.

Mr OSBORNE—Yes. If the committee would like more evidence on that, I am happy to do some more work on that.

The CHAIR—Yes.

Mr OSBORNE—Okay.

Mr KOCH—Alan, are there any early outcomes in relation to these mitigations being trialled, particularly the cameras?

Mr OSBORNE—The cameras—it has not happened yet.

Mr KOCH—They are not switched on yet?

Mr OSBORNE—Sorry?

Mr KOCH—The cameras are not switched on yet?

Mr OSBORNE—I believe there has been an issue around the technology and what it looks at on the lens of the red flashing eye. It is an LED light which has had to be switched over to incandescent bulb. It has taken a little bit longer to get in place.

Mr KOCH—Put in place, that is all right.

Mr OSBORNE—There have been some police exercises at some level crossings, I am not sure exactly where, but there have been some enforcement actions that have not involved technology. What risk treatments are available for level crossings. They really range from give way signs right the way through to grade separation. The question in my mind is, along that spectrum we have a whole range of things in between. There are other things also that could go in between. That is one area that we would like to explore with the committee. I would like to say from a risk management perspective that even full protection is not a

risk-free risk treatment. Accidents do occur and people get caught in the gates, and on the half-boom barriers, people's behaviours—they zigzag between the boom gates. I think it would be wrong to consider boom gates as necessarily the panacea to eliminate risk and get to risk for zero safety.

I would probably go a stage further than that and even say that there was an accident last year where somebody managed to drive off a road bridge onto a railway line out at Geelong. Even grade separations carry some level of risk as well, albeit it does take a chunk of risk out of the system.

Mr LEANE—Did the car get hit by a train?

Mr OSBORNE—The train just managed to stop. I think the police alerted the signal control and it brought the train to a halt, but the car was trying to avoid a booze van at the time, from memory. Behavioural issues are always with us. Going back to my test that I have to work with, the 'SFAIRP' principles, so far as is reasonably practicable, we have to make sure that whatever mitigations we put in place are commensurate with risk. If we were to upgrade all level crossings to a certain level of treatment that would be a big cost. It would not necessarily eliminate risk completely and that also leaves, from my perspective, some other risks on the railway which also need to have appropriate treatment. We were talking earlier about train collisions and derailments and so on. The point I am trying to make is there does need to be a balanced approach to funding safety risk issues, and that really is given to me through the Rail Safety Act, and it is something I will have to be cognisant of. The question is—the last bullet point on this slide—what more can we do to optimise a safety benefit for the investment that is going in.

The next slide talks about low cost level crossing warning devices. Active regional level crossing installations cost around about $500,000 each. Cost to upgrade 1,441 passive crossings in Victoria is therefore high. Overseas—particularly in Canada, and there are some devices in operation in Germany as well—they have been trialling low cost level crossing warning devices. It is my view that there is some relevance for these systems for Victoria.

Mr LEANE—What do they do? Are they booms and bells?

Mr OSBORNE—You can put a boom barrier on but essentially they go to an active form of protection with bells and lights.

Mr LEANE—Using the solar technology I would imagine the load on the batteries of the boom, you would struggle?

Mr McKEOWN— It depends on the number of train movements. As a concept, it is no problem. These are contemplated really for areas that are currently passively protected and they will be ones that generally have low train movements. If you do have power supply available it is just one of the costs, then you would use the power supply that is available. It is the cost of getting power to a site.

Mr LEANE—Why are they not failsafe?

Mr McKEOWN—I was going to say we probably have that covered elsewhere. Failsafe is specific railway terminology and has specific meaning to railway signal engineers.

Mr LEANE—Can you expand and give us a definition.

Mr McKEOWN—I can. In our previous submission we had a detailed definition and we will give you that again, but off the top of my head the principle is that should it fail, it fails in a manner that does not cause danger, an increased risk. In a signalling system, which is where the technology comes from, and you have a failure in the signalling system, instead of failing to a green light it fails to a red light to stop the train. If the active booms fail, they fail in the down position. It is notionally a safe—

Mr LEANE—If you have not got booms in, you have lights and bells?

Mr McKEOWN—Generally, I do not think anybody could argue that bells and lights could be

failsafe. The only way you could that is for redundancy, you have some redundancy between bells and lights. It is unlikely that a bell and a light would both fail, unless you have lost the power supply. A redundant system is not, strictly speaking, failsafe. We do speak a little bit more about our view, the regulator's view, of failsafe and non-failsafe technology. All equipment can fail, wrong side failure. Even though it is designed with the best intentions to achieve a safe failure, there is still a small probability that there will be an unsafe failure.

Mr LEANE—These low cost level crossing warning devices—

Mr McKEOWN—They are not strictly failsafe.

Mr LEANE—Why not?

Mr McKEOWN—The key thing is in the detection of the train. A normal level crossing will use something called a track circuit, and the track circuit is failsafe because normally if you interrupt the track circuit it fails safe. Unfortunately it does also have an unsafe failure mode as well. The detection part track circuit is quite an expensive part of technology, possibly up to $300,000 worth. There are other train detection type technologies that are regarded as failsafe, and what I am talking about here is axle counters. We specifically mentioned that last time. You can use those as a lower cost mixed into this technology and still end up with what we would call a low cost warning system. We would get the reliability up quite high. That is worth investigating.

Mr LEANE—Is an axle counter an inductive loop?

Mr McKEOWN—It is a sensor that sits on the rail edge and it counts wheel flanges going through. It is effectively a metal detector and they are already used in signalling grade applications. They do have a very good failsafe track record. They have some advantages over track circuits, in fact.

Mr LEANE—They are a lot cheaper?

Mr McKEOWN—They are lot cheaper. That is the sort of area where we believe there is room to investigate and do some development and we could therefore improve safety at the current passive protected crossings.

Mr LEANE—What do they cost in comparison to the 500K—

Mr McKEOWN—The numbers I have heard quoted—total crossing or the—

Mr OSBORNE—About 20 per cent of a normal—so 100K rather than 500K.

Mr LEANE—You can get five of them for one—

Mr McKEOWN—That is the sort of thing—

The CHAIR—That includes the boom gates?

Mr OSBORNE—We think there is a possibility of being able to add some kind of boom gate on, but it would not be of the sort that we currently have. It would almost be like carpark barrier type arrangement. That could probably be added on for not much extra cost.

Mr LEANE—It does not matter as long as its down. Is that because of the weight, it would be a lighter weight?

Mr McKEOWN—We would be looking for a lighter-weight unit and a unit that is already in mass production. The railway one is quite a sophisticated, heavy rated design but it is designed for quite a lot of operation.

The CHAIR—Would they be longer than currently what we have?

Mr McKEOWN—That depends on your lane width on your road, and the country roads—

The CHAIR—Normally what we have is one for that side, and one for that side. It gives the opportunity for some of those people that like to take risks out there to zigzag through. If they were longer would that prevent those people—

Mr McKEOWN—That is a separate question. That introduces a new risk of the booms coming down and somebody being trapped. Some overseas countries do have the longer two quadrate booms; others have four quadrate booms where they have two on each side, but you do risk somebody being trapped there. That is the downside. Generally what they have to do in that case is make them frangible. In Sweden recently they have had to put directions in Swedish that if you are trapped to drive through the boom. They have had a marketing campaign to get people to do that.

Mr LEANE—It disengages, does it, very easy?

Mr McKEOWN—It breaks off—

The CHAIR—That would be a normal reaction, wouldn't it, for some people?

Mr McKEOWN—Not necessarily.

The CHAIR—They would simply—

Mr KOCH—It would not be my reaction, I can tell you.

The CHAIR—We have had a bit of a—

Mr OSBORNE—Okay. I did not want to hop over the slide that was out of sequence, which I have now lost. Level crossings from a road safety perspective. Again I know you covered some of this this morning but car fatalities at level crossings are a small proportion of the total road toll around two per cent on 2006 numbers. Road driver behaviour does seem to be a significant factor in the majority of level crossings accidents in my time in the role. I do not think I can in 18 months recall of any occasion where the equipment was malfunctioning or any particular issue. It does tend to come down to driver behaviour.

Mr KOCH—Is that driver behaviour more focused on motor vehicles or heavier road users?

Mr OSBORNE—I personally think it is both.

Mr KOCH—Equally?

Mr OSBORNE—I do not think I could give you that off the top of my head, but certainly my guys went out to investigate a level crossing accident the other week and the police were present with the flashing lights going. It was at a level crossing with stop signs and I do not think hardly a driver stopped at the level crossing, even though the police with the flashing light was going. This is at a stop sign and people were going straight through. I do think there are some significant issues to be addressed in driver behaviour terms. The last point on here which is a really important point and it is a very simple point, that the technology really if it does not aid driver behaviours at level crossings, if we do not know that that really works then we have probably wasted our money. Looking at this from a behavioural point of view and a human factors point of view is absolutely fundamental.

In terms of trials, there have been some trials in Australia on these low cost systems—one in South Australia. Our understanding is that the system there performed to its design specification and it logged 4,372 events and detected about .02 of a failure rate in that. Whether that is quite where we wanted to be yet, I am not sure. These things, even though they are not designed to be failsafe, can be designed to be very reliable indeed.

Mr McKEOWN—That one in particular did not use axle counters, it used normal road level type

detection.

Mr OSBORNE—There may be ways of getting the reliability up even further.

Mr LEANE—What is the issue using that?

Mr McKEOWN—Using the road level detection?

Mr LEANE—Yes, what are the negatives?

Mr McKEOWN—The positives are it is cheap; the negative is that the failure modes may not lead to a safe failure, its reliability.

Mr LEANE—The failure as in it does not detect the train?

Mr McKEOWN—That is right.

Mr LEANE—Why?

Mr McKEOWN—Why might it not do that?

Mr LEANE—Yes.

Mr McKEOWN—Because something in the electronic system has failed.

Mr LEANE—That can happen?

Mr McKEOWN—That can happen, at very low probabilities, we believe.

Mr LEANE—If the circuit broke you would go to failsafe because the input would be there—

Mr McKEOWN—Well, it depends on the design of the detector. Electronic systems certainly can detect that sort of thing. I do not know whether this particular sensor was designed to do that but, yes, you can certainly improve the ruggedness of an electronic system to detect its own failure.

Mr LEANE—That is my understanding what they do at traffic lights, that if the one in the side street, the loop breaks down and fails—

Mr McKEOWN—It reverts then to a time—

Mr LEANE—A little concert input so at least the side street will keep running, yes.

Mr MULDER—Who are conducting the tests at the moment?

Mr McKEOWN—I do not know that the tests are currently under way. They were formerly conducted by VicTrack at VicRoads. The equipment is still there I understand though.

Mr OSBORNE—Okay. That is South Australia. There have been trials of these kinds of systems, and in Victoria—Creswick—the view there was that there is a very real and practical option for using these, particularly at rural rail crossings. They are certainly cheaper and lower cost. Adoption: yes, there are some legal issues to be gotten through; probably also require a change to the current Australian standard 1742.7, and these legal issues will need hammering out, but I personally feel that that is not insurmountable. Certainly our position as a regulator would be to accept technology that was not deemed to be failsafe and what you have to do is look at the benefits on the other side, as well as the failsafe. There are some of these accustomed to relying on the system and they expect it to work 100 per cent of the time. There are some legal issues though that will need to be looked at.

Other technology initiatives: the committee are probably aware of the ITS technology but it is showing some promise. There is a trial in WA by the Department of Main Roads in WA who linked together 50 vehicles communicating between locomotive, level crossing and cars with a technology box that—

Mr McKEOWN—Wireless technology, really to do with something similar—a warning device like a flashing light would do, but it goes straight from the locomotive to the level crossing and it appears in the car, so whatever the warning device, whether it was a flashing light or it is an audible or both, the car itself gets that signal from the level crossing.

Mr OSBORNE—This is a very recent trial.

Mr MULDER—That is through the car radio?

Mr McKEOWN—I am not sure in detail—car radio would be one option but we do not have enough detail to say that.

Mr TRESIZE—It is an interesting, there is a few of us at the ITS on Friday and George Mavroyeni from VicRoads was saying that when he was in Denmark—

Mr LEANE—Was already operational, that type of technology. It is nothing that—well, it is new but it has obviously been well and truly trialled and is in operation in other parts of the world.

Mr KOCH—Was that through the car radio?

Mr McKEOWN—Through the radio.

Mr LEANE—Your radio can be off, but that technology has to be in new vehicles. It is not like you could it for ours now. But the radio could be off and all of a sudden through your speakers you are told that you are approaching a level crossing and there is a train coming.

Mr TRESIZE—Not only a train but it could be used for an ambulance.

Mr LEANE—Yes.

Mr OSBORNE—It shows a lot of promise and it would be good to see some work on that. A lower cost option would be linking GPS systems in a similar way through your car radio or indeed through satellite navigation systems being able to map those systems. I know there has been some adverse press over the weekend about satellite navigation systems distracting drivers but this system we would envisage kind of talking to you and telling you that there is a level crossing approaching. One of the questions this morning was, is there an Australian supplier that would be interested in doing this and there have been some approaches from Australian manufacturing.

Mr LEANE—To supply—because the hardware is—

Mr McKEOWN—It is the mapping software, the database and objects that sit with the map.

Mr LEANE—Yes. Can you let us know who is looking at that?

Mr McKEOWN—Yes, certainly.

Mr OSBORNE—All the time we have to come back to this kind of human behaviour thing, if it is not impacting on human behaviour, and that really does need to be part of proper evaluated systems and technologies that we bring in.

Mr KOCH—Alan, you are in early investigations saying the use of GPS might be ultimately the one we are after, and if that were the case should we be dedicating more resources in trying to accelerate the outcomes on that? We have limited resources to use, we are looking for best results, and you guys are sitting

in the right position to evaluate more so in some cases than VicRoads or their counterparts.

Mr OSBORNE—At this stage I would be a little bit nervous about narrowing down the field too much on these technologies.

Mr KOCH—I was picking up on your conversation. I tend to think it was down the track a little bit. Where my colleagues were on Friday it is indicating that that technology is about and being very effective.

Mr OSBORNE—It is looking very promising. I certainly would agree with that.

Mr TRESIZE—The last point you make on that paper is right. At the end of the day if people are going to race a train they are going to race a train.

Mr OSBORNE—Heavier enforcement penalties are the only way that we are going to address the risk-takers.

Mr LEANE—A reinforced education program. If there was X amount of money in a bucket for this issue you would have to say—from the point you are making—that unless you change driver behaviour it might not be a good move to spend all that money in the bucket on technology when you might want to spend some on education.

Mr OSBORNE—If people do not understand why the technology is there and what it is trying to do for them, then you have to shift your overall objectives. In any program you would have to have some money that was allocated to the technology, some to communication, some to better enforcement. I feel in this whole issue that it is difficult to find a silver bullet to this. It is going to be a range of things that we do that is going to improve the situation. I also think that the new level crossing strategy that public transport division are bringing together as well have also a lot to offer in terms of this whole agenda. We need to keep it fairly broad. As we begin to realise certain things are going to give us greater benefits out of it, we need to back those particular aspects as we go forward. That is the end of our presentation, chair.

The CHAIR—Thank you.

Mr OSBORNE—We are open to any questions.

Mr MULDER—Alan, can I ask in relation to the upgrade of Metrol, where is that at the moment?

Mr OSBORNE—It is still going to be at least a couple of years away before we see it in place.

Mr MULDER—Westinghouse have the contract for that project?

Mr OSBORNE—I do not know the detail. You would have to talk to the public transport division about that. In terms of the issues that were raised in the chief investigator's report of Kerang, I do not think we can necessarily rely on the Metrol system to come on board before we take some actions in those areas on communication. Those actions do not necessarily need to involve complicated technology. It could be done on the basis of communication, information and education.

Mr MULDER—Can I ask a question in relation to some of the braking issues with the trains at very close level crossings where you have a railway station and a level crossing very close by. Has that been concluded as to what the problem was?

Mr OSBORNE—It concluded that there certainly have not been any for a long time, so I am taking some comfort from that. Whether or not all of the things that Connex were going to put in place have happened yet—I do not believe that they have, there are still some modifications to take place—but it does seem to have addressed the issue on the actions that they have taken so far.

Mr MULDER—But you accredit them and you would be investigating that as part of your ongoing accreditation process and certification process, wouldn't you, that those trains are safe—

Mr OSBORNE—Yes.

Mr MULDER—and how those issues have been dealt with?

Mr OSBORNE—I mean, a whole range of issues around the braking issues. It is interestingly another one of those interesting railway interface issues, interface issues to level crossings, road and rail. There are a whole number of them in railways, and the other one Chris, as a railway engineer, will know that the rail interface is another one of those areas that is quite complex and that is where Connex and Siemen's investigations went to. It does appear to have addressed the issue. I do know that there are further modifications coming through to further assist that problem.

Mr MULDER—With your auditing process, do you conduct full compliance audits on your rail operators, suppliers and their subcontractors? How far does your auditing go?

Mr OSBORNE—Our audit looks at the safety management system of the accredited operator. If you are talking about V/Line then we will look at the safety management system. A component of that safety management system will be contractor management and we will look at, depending on what we find, the policy level, and at the local level we might go further down and look at a particular contract but we would not necessarily do it unless there were some issues that were of concern.

Mr MULDER—Those contractors are supposed to be accredited as well, are they not?

Mr OSBORNE—Contractors are not accredited in the Victorian system. It is the rail operator or the rail manager who is accredited.

The CHAIR—In relation to freight, obviously there is a lot of freight that is being distributed through the road networks. Is it forecast that the trains may be more utilised in terms of freight transport and would that reduce or increase risk?

Mr OSBORNE—I do not know what the planning assumptions are, John, in terms of going forward. A lot is going to depend on the negotiations that are currently occurring with growing crop and all those issues. I am not across those issues but it is good for society to be able to use freight for the task of moving goods around. Roads are always going to have a place in that process as well. The issue is when you start to look at the risk pinch points in a rail safety sense, which is where my locus is, is from time to time we continue to have discussions about the B-triples which could be operating in Victoria. That would be an area that would require a great deal of risk assessment before one could envisage the B-triples operating on our roads and across our level crossings. You go back to the spectrum of risk mitigations, I do not think a give way sign in that situation would be adequate. They are probably going to be at the other end with grade separation for the triple loads. That is my position on the big risk issues but I do not know what the planning projections are going forward.

Mr WELLER—Alan, who is responsible for the level crossings? Is it you, is it the Department of Infrastructure, is it VicTrack or is it VicRoads?

Mr OSBORNE—There is some sorting out at the moment around different roles and so on. In 2010, kicking into our new legislation, we will have the role to pretty much tell somebody they should have a safety interface agreement. At the moment we are not into that phase of the legislation and we have other vehicles called interface coordination plans. Each road and rail operator will have a coordination plan that they are essentially meant to talk to the affected parties, and that would include the road authorities and the local councils and so on. There is going to be a changeover between the current system and the new system. This is another area where there could probably be some tightening up in terms of who can tell who to remove long grass or vegetation, and you get into the whole issue around private landowners and councils' roles. Everybody at the moment has their part to play and they know what that part is, but there are a lot of players in the system.

Mr WELLER—It is not clear then?

Mr OSBORNE—It could be clearer is my view as a regulator, having looked at these things.

Mr WELLER—As I understand those interface agreements will make that a lot clearer and, as you say, you have the power to direct parties to enter into interface agreements.

Mr OSBORNE—Yes.

Mr WELLER—Do you have the power to direct them to—

Mr OSBORNE—I will have.

Mr WELLER—You will have, yes—to introduce new technology if you were to become aware of new technology that you believe could improve rail safety? Do you have the power to direct parties to take on board that technology?

Mr OSBORNE—The answer to that is yes, but from a rail perspective. I have to be perhaps a little bit more careful in terms of telling the road users what they must do. But once we have the safety interface agreement process in place I can direct and instruct people to have a safety interface agreement and I also have the ability to be able to look at the contents of those safety interface agreements. If I am uncomfortable that the risks have not been addressed then I can take action against the parties to that safety interface agreement, but that does not come into place until 2010. At this stage if we find an issue then we obviously communicate it to the various parties, if it is say long grass or vegetation implicated in a level crossing accident.

Mr WELLER—The process in relation to new technology, if there is some new emerging technology and that is proven and it looks as though it will work on our rail system, for instance, do you have the power to direct or do you have to go through the process of seeking ministerial approval to push the funding for such a proposal or how does that work?

Mr OSBORNE—Built into the legislation is the requirement on things that I direct people to do, that I have to do a cost benefit analysis, and that cost benefit analysis has to meet certain criteria, which is why I am very careful to be looking at the overall cost and risk in this whole issue, because I can really only direct on things that have a reasonable, positive cost benefit in terms of safety and costs. There is that issue within the legislation that I need to tackle. The answer is, yes, I can, but I would have to justify a cost benefit analysis.

The CHAIR—Any further questions?

Mr MULDER—Just one. What are the impediments for the implementation of technology that could improve safety at level crossings? I know we spoke earlier about the low cost level crossing safety system impediment perhaps being it is not failsafe and there are some legislative and legal requirements there. Are there any other impediments at all in terms of introduction of new technologies?

Mr OSBORNE—I do not believe so.

Mr McKEOWN—I guess you always want to know that the technology works, so you need to demonstrate it, trial and demonstrate it. The key one is the one you already mentioned.

Mr OSBORNE—Doing before and after evaluations is absolutely essential in new technology areas because we need to know that they work, and to do that the way that VicRoads have taken to trialling things and evaluating before we move on to a broader thing, it has to be the right approach.

Mr MULDER—Is there a fear in terms of the introduction of new technologies that everyone is always looking ahead in terms of what is emerging and what is going to be in place in the next five to 10 years and perhaps we wait to see what is coming out of other technological advancements; how quickly technology moves and how slowly—

Mr OSBORNE—There are always going to be concerns about that. My concern would be—this is a theoretical situation, but let's say somehow we managed to justify that we could grade-separate all of our level crossings, my fear there would be that ultimately some piece of technology will come along that will achieve the same level of safety for a much smaller amount of money, and we would have put a lot of money into grade separation. There is always that issue there. The other thing that perplexes me from time to time is we often look at the failure of a system—the tragedies and the fatalities that occur. We are talking on average here about a technology—a passive crossing, you would hardly call it technology but it is a system that has been in place for a number of years. It is generating somewhere between three and six fatalities a year which is a small proportion of the total road toll but nevertheless something that we should aim to try and reduce even further. I know the department's zero tolerance approach to this is coming out of that recent strategy.

In terms of the success side of level crossings, if you add together the number of level crossing transactions on an annual basis—1.25, roughly, billion transactions; in other words, cars going across level crossings per year—and that system fails on a number of occasions but it is not a high percentage in which it fails. I do not think it is right as your numerator of that equation the numbers of fatalities because if we could find all the near-miss data it would probably run into thousands of incidents, but even thousands divided by 1.25 billion is still a very small risk in terms of individual risks that we all take on when we travel over a level crossing. What I am saying is the technology has to be appropriate to the cost, it has to be appropriate to the risk because I am sure there are a whole lot of other risks out there that we also need to be tackling.

Mr TRESIZE—In relation to that point, a couple of people made this point and I think it is right, and as a matter of fact I may have made the point, that there is the risk of the catastrophe, it is that catastrophe that could occur, ie, Kerang, that really ensures state governments and authorities have to try and mitigate those risks because of the risk of that catastrophe.

Mr OSBORNE—Catastrophic risk is dealt with more sensitively than individual risk. I am not quite sure where that fits in societal expectations because it is complex. There is a societal ill feeling towards 11 people dying all in one event, versus 11 different events that occur in the system at different times. The cost benefit analysis that I have to do in terms of new things and new directions that I might make has to take some account of the aversion of society to catastrophic events; a slightly different way to 11 times the same event.

The CHAIR—Alan, are you aware of any measures, policies, programs, technologies that are currently operating elsewhere that we could benefit by implementing it in Victoria? We are enthusiastic about the Western Australian trial, we will wait and see those. They are the things that come across our desk.

Mr OSBORNE—That is a broader question than technology, isn't it? Can we perhaps come back to you on that. It is a big question and it deserves a bit of thought.

The CHAIR—Sure.

Mr MULDER—What triggers your decision to invite an outside organisation, such as the Australian Transport Safety Bureau, to assist you in an investigation? Is it lack of expertise in some particular areas? Is it a back-up support mechanism? What is it?

Mr OSBORNE—The first thing to describe is that my office as a regulator is different to the Office of Chief Investigator that we have in Victoria. Ian McCallum investigates essentially the big things that go wrong. My role is really ensuring that the accredited rail operators keep managing their risks and keep doing that in a best practice, good practice kind of way. There would not be a circumstance where I would bring in necessarily the [ATSB] from a particular incident, but there might be situations and human factors—the ATSB have some excellent people—where we might want to talk to them about a particular issue in relation to an issue that we have in Victoria but it would not be an investigation; they would not be coming in and investigating it.

Mr MULDER—What is your actual role with the investigator? How do you link with the investigator?

Mr OSBORNE—The investigator is part of the governance system for me, because as a regulator he may very well at some point say, 'I think the system of regulation has failed here,' and I may get some action out of those processes. In that sense, Terry, it is completely separate.

Mr MULDER—You don't accredit their processes at all?

Mr OSBORNE—No.

Mr MULDER—You don't look at their processes?

Mr OSBORNE—No.

The CHAIR—Thank you very much for your time.

Mr OSBORNE—Thank you.

Witnesses withdrew.

Hearing suspended.