ROAD SAFETY COMMITTEE

Inquiry into Country Road Toll
Inquiry into Crashes Involving Roadside Objects

Melbourne – 10 May 2004

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Necessary corrections to be notified to
executive officer of committee
**The CHAIR** — I will open this meeting. As you are aware, this is an inquiry of the Victorian parliamentary Road Safety Committee. It is running two concurrent inquiries at the present time, the first being an inquiry into the Victorian country road toll and the second an inquiry into crashes involving roadside objects. I would like to welcome representative from the RACV here this morning and thank them for their time and input into this inquiry, and also all our other inquiries. We are taking transcript today and will provide the RACV with a copy of the transcript in due course. We are also operating under parliamentary privilege, so what you say this morning cannot be held against you legally into the future. Having said all that, we do appreciate the RACV’s time and input, and I will hand it across to you, Ken, to provide a submission.

**Dr OGDEN** — Thank you, Chair. It is a pleasure to be able to give evidence to the committee on what we think is a very important subject. We have made written submissions on both terms of reference and we would be more than happy to answer any questions you might have on either of those. I thought I might begin by giving a brief overview of the two submissions and highlighting our major recommendations.

**Overheads shown.**

**Dr OGDEN** — It probably goes without saying that as the state motoring club the RACV has a very keen interest in road safety. We represent over 1.4 million members. That means that on average RACV has a member in two out of three households in this state. One of the key functions of RACV is to inform its members, and also advocate on their behalf across a range of mobility and consumer issues, of which, I think it would be fair to say, road safety is pre-eminent; We have made written submissions in respect of both inquiries and we have attempted to address all of the terms of reference that were in both those inquiries.

In terms of where the submissions came from, they were prepared in-house by our technical experts, led by our traffic and roads team headed up by Peter and our road user team headed up by Anne. They reflect the insights, the experience, the expertise that we have, and that we have developed through our ongoing advocacy and information work. In addition we did commission Monash University Accident Research Centre — whose representatives I understand are also appearing before you today — to prepare a report for us, analysing the data on the country road toll for the period 1997 to 2001. That work is summarised in section 2 of the country road toll inquiry. I will not go into any of that statistical information in my presentation, but obviously we would be happy to answer any questions you might have on that. I also mention one of our supporting documents, the report entitled *Lifeline — Situation Critical for Victoria’s Rural Arterial Network*, which coincidentally, was prepared during last year. I say coincidentally in the sense that it was not prepared for this inquiry, but in fact much of the analysis that went into that is particularly pertinent to the inquiry.

Turning to the submissions, they each contain an overview of the problem; and a statistical analysis of the situation; and on that basis they include a number of recommendations. In overview I think what we would say in respect of both submissions is that the country road toll and the crashes involving roadside objects is higher than it should be and certainly higher than we believe is acceptable. I say higher in the sense that there are strategies and there are countermeasures that can be brought to bear, we believe, in an eminently affordable fashion to address both of those problems.

With that overview of the situation if I could then drill down, because as in all of road safety issues, the old cliché about safety being safer people in safer vehicles on safer roads holds true, so I would like to talk about the roads, about the road users, and about the vehicles. Firstly, in relation to the road and the road environment — and I include in that the roadside — I think it is probably fair to say that this aspect of road safety has been a little bit on the backburner for the last 10 to 15 years. Most of our road safety endeavour has been directed at the road user in that time — and I am talking about speed, alcohol, fatigue and drugs. All of that is right and proper. With respect to vehicles, vehicles today are much safer than they were even 10 years ago. That, of course, is largely at the instigation of the consumer, and also paid for by the consumer. In other words the safety is built into the vehicle at a cost, and the consumer is paying for that. But the next aspect, the road and the road environment, I think has not received the attention, that it now deserves. What is paradoxical about that is that the road and the road environment is in fact the one area over which society has the greatest control. For the road user it is, of course, through education, information and enforcement; for the vehicle it is the vehicle manufacturer; and for the body public, the government or the state has a significant opportunity to influence the road and the road environment in terms of reducing the number of crashes and also reducing the severity of those crashes that do occur.
You are probably aware of the projections that were done, I think by MUARC, for the national road safety strategy. It said that nearly half of the forecast reduction in the road toll to the end of this decade would come about through safer roads — nearly half of the reduction in the road toll would be achieved through safer roads and a safer road environment. Our *Lifeline* report, which used analysis conducted for us by the consulting firm, ARRB Transport Research, estimates that up to 100 lives could be saved every year if Victoria’s rural roads were all of the standard of the safest rural road. I think that gives some dimension to the potential that can be obtained through concentration on the road and the road environment.

The key point — and it is a point we make in the *Lifeline* report — is that much of Victoria’s country road network was laid down in the 1960s and 1970s. The country members around the table would recognise, and I can certainly remember from my own experience, that the emphasis then was on just getting a good sealed road from A to B. Safety was not the prime driver. In large part that reflects today the state of our road network. We believe there is scope to come back and look at that road network; not with big, glamorous multimillion dollar projects, but projects that upgrade the inherent safety of the road network through things like shoulder sealing, safer intersections, protection of the roadside environment; overtaking lanes; rest areas — relatively low-level, unglamorous, but extremely valuable features such as those.

**Mr BISHOP** — Ken, on that point, what about the audio tactile strips which we have heard some evidence about?

**Dr OGDEN** — We would certainly include those. That little checklist was certainly not exhaustive. This report here, the *Lifeline* report, on page 11 highlights a number of particular factors, and I suspect that line marking and guide posts are certainly there. The tactile edge lining is certainly a safety measure for lighter vehicles. I think it is less effective with heavier vehicles, and, of course, it does need ongoing maintenance, but with those caveats, yes, edge lining is certainly a proven safety measure.

**Mr BISHOP** — Have you ever looked at putting that same type of facility in the centre of the road?

**Dr OGDEN** — I am not aware of any particular research on that, but I would expect that it would show similar benefits. Its objective is to alert the driver to the fact that they are straying out of their lane. Whether they stray to the left or the right, I think it would be equally effective. I would like to refer to the TAC-funded black spot program — $240 million over four years — and in last week’s budget, of course, extended by a further two years at a cost of $130 million. We have gone on record as saying that that is extremely valuable and welcome, and we believe it is a highly cost-effective program. I think extending beyond that, what the former Blackspot Program did was to say, ‘Let us look at those sites on the road network where crashes are occurring and let us treat those sites’, and that has been highly effective. But by its very nature you must eventually run out of sites that have a proven accident record. That, of course, is not removing all the sites on the road network that have got those features that led to some sites being a black spot in the first place, so what we would like to see, particularly with the $130 million over the next two years and beyond that, are the lessons from the black spot program being applied across the network more generally, so that if, for example, you have one narrow bridge among six on a road and that narrow bridge is the one that has happened to have had three or four crashes and therefore is a black spot and therefore has been widened, if the same circumstances applied at the other three or four bridges, we should treat them as well in a proactive or programmatic sense rather than a reactive or bottom-up sense.

**The CHAIR** — We have met with something like 60 councils and organisations as we have tripped around Victoria. One of the criticisms of the black spot programs in smaller towns was that because the black spot sites were based on Crashstats, locals were saying, ‘We know where there are potential sites. You will never have the high crash statistics just because of the traffic, but if we have an accident there it is going to be a bad one’. Therefore there was criticism that the black spots were more reactive rather than proactive.

**Dr OGDEN** — We certainly support the proactive nature. It would worry me if somebody said, ‘We will never have a crash there, but we should nevertheless treat it’. I think what we are saying is yes, it needs to be data driven, but it needs to be data driven in the sense of identifying those crashes that have a high potential for crashes even if they have not had the actual crash record. So we treat the narrow bridges, the roundabouts, the pedestrian crossings, and the like, not just those where there happen to have been the two or three crashes over three or four years, but those that have those same characteristics but fortunately have not yet had the crashes.
The CHAIR — I think that is right. To me it is the potential, and the keyword is the potential. I suppose that is what the local communities were saying to us in rural Victoria — it is the potential that was there.

Dr OGDEN — Yes. A very good example of that is guard fencing. If you have only put the guard fencing around the tree that caused the latest crash, then you ignore the fact that it could have been any tree that that errant vehicle could have run into. It applies to a number of programs. I think what I am saying is that with the bottom-up approach, using the crash data to identify black spots, Victoria has had tremendous success in treating those. I think there are limited returns in continuing down that path. It is rather learning the lessons of that and applying them on a system-wide basis.

The submission goes into a number of specifics in relation to such aspects as the design features of particular types of road. You would know that we have this M, A, B, C system in Victoria, each of which has a particular design ideal attached to it. We would like to see attention to that. We would certainly like to ensure consistency across municipal boundaries. With the Road Management Bill that is not, I think, guaranteed; where a road crosses a municipal boundary, if the two councils have different approaches to that road, then there may be discontinuity. I think that is something we need to be a bit careful about. We have drawn attention to the benefit of road safety audits, which is now I think very generally applied at state and federal programs. We believe there is a scope to extend that also to local government. I guess in short what we are saying is that there is benefit from a systematic upgrading of the inherent safety of the road network.

Just before leaving the road component, could I make two other comments that have more to do with procedures than specifics. I mentioned the Road Management Bill a moment ago. We have argued strongly that arterial roads should be the responsibility of VicRoads. The Road Management Bill philosophy I believe is exactly correct, that local roads, which, of course, are the great majority of roads in the network, should be the responsibility of local government and managed for local purposes. The arterial road network should be managed for regional or state or national purposes by a regional body. We do not believe it is fair that local government should have the responsibility, neither do we believe local prerogatives should get in the way of what are legitimate regional, state or national issues. There are a number of roads, especially on the fringe of Melbourne, which function as arterial roads, but which are currently the responsibility of local government. As I say, the Road Management Bill has sorted some of those out, but we think that has not gone as far as it should, particularly in the outer metro area.

The CHAIR — Have you made that point known to government?

Dr OGDEN — We made that point in our submission on the Road Management Bill, and I think there was a discussion paper prior to the bill, so yes, we have made that point. I must say that the emerging situation is better than it was. I do not think it has gone quite as far as it needs to or the way we would like to see it go, particularly as I say in that metropolitan fringe area.

The other situation I would like to refer to is the management of roadside and road verges. These are critical areas, but they do have a number of conflicting objects. They are certainly critical from a road safety point of view, but we recognise also that they are valuable in an ecological sense and in some cases in an aesthetic sense. Our concern is that the guidelines for the management of the roadside and the road verge are not sufficiently clear to all the parties, and one of the things we would be saying to this committee is to think about how we may have a roadside management strategy that reconciles all of those objectives — the ideal, of course, being a win–win outcome that preserves the ecological, aesthetic and environmental benefits of the roadside without compromising road safety. We do not believe we have such a system in place in the state at the moment, and I do not think any of the players are happy with the current circumstances.

Mr BISHOP — On that issue have you got a view on how that should be managed?

Dr OGDEN — I think what we have tried to do is put that issue on the table as a issue that needs addressing. We do not have the solution except to say that the outcome should be one that satisfies all parties, ideally in a win–win. What that might mean in practice is much more guard fencing so that the vegetation is preserved, but the guard fencing should be installed in such a way that it can actually operate because guard fencing does need to yield perhaps a metre or so behind the guard fencing. In some cases that may mean removal of vegetation. I emphasise I am not talking about wholesale clearing of road verges. I think the other aspect which is pretty much common practice with VicRoads on its major projects is where there is a road reserve, an existing two-lane road in that road reserve, with vegetation at the edge, if that road is being duplicated, I think VicRoads
practice to its credit for many years has been not to clear the vegetation to make room for the second lane but to actually purchase some land outside the road reserve and put the second lane in there. That is happening as we speak on the Calder Highway south of Bendigo, as you may know. There is room within the road reserve for the second carriageway, but it is actually being constructed outside in order to preserve that vegetation. That is what I mean by win-win.

Mr STONEY — So you are leaning towards wire rope fencing rather than the armguard which is a lot less flexible for these things?

Dr OGDEN — I think it is horses for courses. We certainly think the wire rope barrier has a place because it is very cost effective — in other words, you can do many more metres of it for a dollar than you can with a solid barrier, so there is room for both. There are circumstances where wire rope barrier is not appropriate.

Mr BISHOP — On that point, as the Chair said, we have taken evidence from a large number of municipalities that are totally frustrated in relation to their capacity to put in place their safety plans, and they are the same as you stated. They are very conscious of the fact of retaining the environment and native vegetation where they can. They are not looking at wide-scale removal of trees, but in a safety aspect they have run into very difficult procedures in relation to doing that. We have also heard evidence from the Department of Sustainability and Environment. It suggested to us there was absolutely no problem with this, that they have 3000 people out on the roads and there is no hassle, and they have not heard a thing about it. Now, from my point of view that is nonsense — they are not doing their job and in fact during our discussion with them at the public hearing, we could not get any answers out of them in any way in relation to future proposals that they would put forward or policies. So we are most unhappy about that situation. I think from that point of view, it would be helpful if the RACV could come up with a view of how that should be managed, and perhaps VicRoads as well. Whether that in fact is a clearway on roads with a certain amount of room or, if that cannot be attained, that a guard rail should be put there, but certainly the frustration of our municipalities was very apparent to us. It was not recognised at all by the Department of Sustainability and Environment.

Dr OGDEN — I think you have just underlined the very point I was making because I think the problem is not technical. I think we know what the engineering solution is. It is really cultural, organisational and institutional. We would like to take that issue on notice, then come back to the committee if we may. Thank you for the offer to do that.

I think I will just illustrate that point with a photograph. I think we have all seen a situation exactly like that of a tree not very far from a bend, on the outside of the bend. I do not think you need to use your imagination to see that the tree has been hit probably on several occasions. The point is that it is close to the road; somebody is going to run into it and in effect fail to cope with that situation. I think what we would say is that failure to cope or to make an error of judgment is inherently human. No person is a perfect decision-maker. People do make errors of judgment. Yes, some of them are driving too fast; some of them are under the influence of alcohol. We do not particularly speak for those, but we do speak for those people who are driving in an everyday situation and find themselves confronted with a roadside object like that. We do not believe people should, by failing to cope with that particular circumstance, have to hit that tree and perhaps be killed. That does not happen with the rest of society. Our workplace, as our homes, are protected from things which are inherently hazardous. We think the road should be the same. We like the notion underlying Vision Zero philosophy in Sweden. I understand the committee may well be visiting Sweden in due course. I think Vision Zero is sometimes misunderstood. It is sometimes said, ‘There will be no fatalities’. It does not say that; it says that for someone driving legally, no feature of the road system will cause them to die as a result of an error that they make. Consistent with that philosophy the circumstance we have on the screen would not be tolerated.

Mr BISHOP — Just to follow that point up a bit more. That may not be a good example because, given the size of the tree and various other things, I suspect it might be a guard rail that would appear there more than likely. I do not know what the experts might say. But when we talked to the Department of Sustainability and Environment we raised the issue of the flow-on from the Road Management Bill, that if the department did not give the opportunities to councils to remove trees that councils believe are dangerous, who would be responsible in the case of an accident or a death with that particular tree. The answer was not forthcoming, so we think it needs a total look at this to ensure that we all know where we are going.
Dr OGDEN — I agree with that 100 per cent. That is the point we are making. That system is not in place at the moment, but we believe it should be. Could I just say that I was not saying a tree like that has to be removed.

Mr BISHOP — No.

Dr OGDEN — What I am saying is that that tree is inherently hazardous and that somebody is almost inevitably going to run into it, and we need to have a roadside management strategy in place that prevents that from happening. If it means removal of the tree, that is one solution. Guard fencing is another solution. Moving the road is another solution. There are many solutions.

Could I perhaps move on to the second of our three-part component. We have spoken about the road and I would now like to talk about the vehicle. I will just make a couple of points in the context of these inquiries, in particular the roadside objects inquiry. Firstly, it goes without saying that we would encourage all motorists and all of our members to buy safe vehicles and to certainly consider safety in their vehicle purchase. We have issued information to enable them to do that and, as you know, we are participants in the new car assessment program that rates vehicles according to their safety. We would also encourage people to maintain their vehicle in a safe manner. But I think we do need to note that vehicle safety has significantly improved right around the world in the last 10 years or so particularly, but in some cases Australians are being denied the full benefits of that. We are worried that cars are being brought into Australia that are, if you like, de-specified compared with their overseas equivalent, and Australian consumers do not have the opportunity to buy cars that have the full complement of safety equipment in them. In our submission we detail a few examples of that, of side airbags being removed, of curtain airbags being removed. Just to underscore how important that is, it has been estimated that if all vehicles in a given weight class were as safe as the safest vehicle in that weight class, then the occupant fatality rate would be nearly halved. In other words, the safest vehicle has only half the fatality rate of the least safe vehicle, so the inherent safety of a vehicle is critically important. Having safety equipment removed for the Australian market is, we think, unacceptable.

Mr EREN — Of the manufacturers in Australia, are all the cars manufactured here five-star cars, or is there — —

Dr OGDEN — Most of the cars manufactured in Australia are four-star. I might say that if all they did was comply with the regulations they would be about one-star, so that the safety that is built in is in response to consumer pressure, not government regulation, but what we do believe and where there is scope for some sort of intervention by government, whether it is by shaming or by regulation, is to prevent the de-specification of imported vehicles. Now, it is not my part to speak on behalf of the industry or the importers, but their position is, I guess, that they sell to a price point and if the safety equipment takes them over that price point, then from the marketing and commercial point of view that is not to their advantage. But I will let them speak on their own behalf. What we are saying is that if there is sufficient volume then the price must come down and in fact mandating safety equipment or for the government to take the lead in safety equipment — for example, in its fleet purchases — would bring the price down to the level that the price point could be met at a reasonable level of safety.

I think I might just summarise the vehicle safety issue by making a couple of points. We would certainly support the program of random and targeted roadside inspection that this committee recommended some time ago. We are concerned that that has not been rolled out with the intensity that we would have liked to see and which the committee expected, but the principle of a random and targeted roadside inspection we would certainly support. The principle of so-called car park inspections which are really identifying on the basis of relatively superficial features like the tyres — because it has been found that there is a strong correlation between cars that have poor tyres and cars that are otherwise not as well maintained as they should be — we would certainly support that. We would certainly argue for the Victorian government to lobby its federal counterpart because imports are, of course, a federal responsibility in this de-specification issue and we would encourage manufacturers to always fit the latest safety equipment.

In building on the point I made a moment ago, we would like to encourage the Victorian government to take the lead in its fleet purchase policy by specifying cars which do have safety equipment such as airbags, anti-lock brakes and side airbags, because we believe that would have a significant effect on the market and, as I said, make this the norm rather than the exception. We made mention also in our report of four-wheel-drive roll-over crashes, and we quote some statistics that prima facie would create or be a cause for some alarm, but I think before we jump to
conclusions what we are saying is that four-wheel-drive roll-over is an emerging issue as four-wheel drives become a greater proportion of our vehicle fleet, and that further work on how significant a problem it is and what the circumstances are would be appropriate. If we can now move on to the third area — —

Mr BISHOP — On that point of the four-wheel drives, are those statistics starting to rise because of the greater number of four-wheel drives per se?

Dr OGDEN — I suspect that is the case. As I said, the statistics so far are more indicative of a problem that is worth looking at than of just exactly what the nature of that problem is. I use the word four-wheel drive fairly glibly, because four-wheel drive can cover a very wide range of vehicles these days. What types of vehicle, under what circumstances, and is there in fact a problem or is it an aberration in the statistics, we do not know, but we think there is enough there to say it is worth looking at.

The CHAIR — Before we go to vehicle safety I would be interested in your comments with regard to in-car devices such as CDs and specifically mobile phone use.

Dr OGDEN — Any form of distraction runs counter to road safety, and we would certainly agree that things like hand-held mobile phones are a no-no. Any form of in-dash device that distracts the driver is also a no-no. We believe there is potential scope for technological solutions for these; certainly there is scope for regulatory solutions to prohibit, for example, TV screens in the front seat, hand-held mobile phones and the like. Perhaps we could return to that point later because I have a few points to make on that.

The CHAIR — Fine.

Dr OGDEN — Just to move on to the third area of the road user, we have outlined a number of initiatives that we think would be helpful in the context particularly of improving road user behaviour on rural roads. These predominantly relate to alcohol, fatigue and to drug-impaired drivers, but also to excessive speed. We acknowledge the necessity for enforcement, including enforcement of speed and alcohol, but we know that by its very nature enforcement works best in a concentrated environment — in other words, it is more effective in the city than it is in the country. The long lengths of the roads and the low levels of traffic mean that the probability of enforcement on any particular site obviously must be very low and therefore the reliance on enforcement cannot be as great in the country as it is in the city.

Mr BISHOP — I cannot let that go past. Is there not a different set of circumstances between city and country drivers?

Dr OGDEN — Yes, there is, but I am just making the general point that much more intense enforcement of let us say speed, as we have seen in the metropolitan area in the last 12 to 18 months, can be effective. The very nature of the country road system and its much greater lengths is that you could not have the intensity of enforcement in the country as you have in the city.

Mr BISHOP — But also a different set of driving circumstances on country roads rather than the city?

Dr OGDEN — You are thinking speed?

Mr BISHOP — Yes.

Dr OGDEN — I think the point I am making is that whether it is speed, alcohol, drugs or fatigue, there is a role for enforcement in all of those, but that the enforcement aspect will be less effective in the country than it has been in the city. But having said that, we do outline a number of suggestions or recommendations in relation to alcohol ignition interlock legislation, and leading on from that the drink-driving education and rehabilitation programs. We have strongly supported the legislation that is now in place for alcohol ignition interlocks. We believe the other foot needs to fall, if I can use that metaphor, in relation to education and rehabilitation. We can elaborate on that later if you wish. Similarly, with drug education and rehabilitation issues, and following on from that, people who have been convicted of driving while drug impaired.

In relation to speed, the RACV has for some time now called for a comprehensive review of speed management in Victoria, including things like the principles of speed zoning. It is not so long ago that they were relatively simple and fairly clearly understood. We now have a plethora of different speed zones, which I think is leading to confusion in the minds of many motorists as to what is expected of them, and allied to that speed signing, because
at the moment the only way of conveying to a motorist what the expectations and indeed requirements of them are is through a little bit of aluminium by the side of the road. We believe that attention to speed signing and how often those speed signs need to be repeated is important. We think consistency is important, because drivers will drive responsively for the most part. The great majority of drivers do the right thing and want to do the right thing. But if what is expected of them varies from point to point and from day to day then they will get confused and lose confidence. We would also like to have a look at some of the enforcement practices, again in relation to things like speed enforcement tolerances.

So in relation to all those aspects — speed signing, speed zoning, consistency and enforcement — we have called on the government to undertake a comprehensive review of that with the objective of restoring confidence. I use the word ‘restoring’ because I think confidence in speed enforcement has been compromised, and restoring that is important because we believe that enforcement has to be part of an overall road safety strategy. We would argue for a review of speed management principles. I think that brings me to the end of the road user aspects. Could I just make a couple of general points?

Firstly, the terms of reference referred to data, and our point in relation to data is that while there are good data on some aspects of rural road crashes, data are missing on other aspects, in particular, information in relation to the role of drugs, the role of fatigue and even the role of alcohol, particularly in rural crashes. Secondly, we would note the importance of effective post-crash procedures — in other words, once the crash has occurred, it is time for the emergency services to come into play. Again by the nature of rural crashes, that is likely to be a longer time lapse than it is in the more concentrated environment in the urban area. We think there are some things that can be done to assist such as ensuring that there is full mobile phone coverage because the way of alerting the emergency services is often through a mobile phone, so full mobile phone coverage in rural Victoria is important. I might say in relation to mobile phones, just as a digression, that while we often think of mobile phones in a negative sense in the context of road safety, they also have a very positive aspect as well in terms of alerting emergency services. We think there is perhaps scope for promoting basic first aid training so that people who arrive at a crash scene have some idea of what to do at a crash site, and also in terms of funding better trauma management systems in rural Victoria.

Finally, one of the terms of reference referred to community road safety and community road safety councils. We believe there is certainly a valuable role for community road safety councils. They have been in place for some time. I do not believe they have been systemically reviewed and, without wishing to cast any aspersions, we think it is probably appropriate that a review of the community road safety council program in Victoria be undertaken to see how effective it has been and whether there is room for improvement in things like the structure of the program, its funding, education and information sessions, role of police in relation to community road safety councils and the like.

The CHAIR — In New South Wales there are essentially road safety officers employed by each council, 50 per cent funded by the New South Wales RTA, 50 per cent funded by the council. In Victoria, if a council does have a road safety officer, it is fully funded by the council. In our experience travelling around Victoria, road safety officers are few and far between. I am wondering if you have any comments in regard to the strengths of having a road safety officer employed in each council as we see in New South Wales?

Dr OGDEN — Perhaps I could ask Anne to respond to that, but before I do that, might I say that that is the end of my overview so perhaps we could, if you are happy, move into general questions at this point, and if I prefer to have one of my experts answer the question, I will, and on that one I will defer to Anne Harris.

Ms HARRIS — We also last year in implementing our rural road safety grants program visited a lot of regional areas and we found also that areas that had a road safety officer employed by council, particularly if they had been operating there for quite some time and were seen as the go-to person within that region, were certainly the ones that seemed to be functioning a little bit better and were more integrated in terms of activities. I found it disturbing also that there were a lot more metropolitan councils that were prepared to fund that than regional councils. I did ask, as you probably have asked, regional councils was there any propensity to fund, and the best a few of them could hope for might have been a shared officer between councils because of funding issues. I think that is an issue. If we are going to have people on the ground coordinating and seen as the local contact person, they can add a lot of value and there needs to possibly be some funding, and possibly a whole lot of other things combined with that. It is not just a person who is the support — it is the education, the resources they have available, how they go about doing what they do to make sure they are as effective as possible — but I would
certainly suggest that if there is a commitment, and there seemed to be an interest in rural areas to do something at a community level; it is how they coordinate that. Having a person there would be beneficial.

The CHAIR — At the councils where we did meet road safety officers, the councils themselves were more proactive — for example, the safety audits that we talked about before — and perhaps this is unfair — councils in general I would say are more reactive than proactive. Safety audits was one area where I thought they were reactive, and where we saw road safety officers I think you would find that they have also been proactive in that we would also see things such as safety audits occurring as well.

Ms HARRIS — Yes, I would agree. Again we did not study it scientifically, but I found that in areas that had someone, there was someone pushing for things to happen.

The CHAIR — There was someone championing road safety in that area?

Ms HARRIS — Exactly.

Mr BISHOP — It was refreshing, Ken, to hear you talk about road standards and the effect they might have on safety. If you were king for a day, what would you do first to reduce road deaths on country roads?

Dr OGDEN — The key thing is well-proven engineering measures appropriate to each specific circumstance, but particularly sealed shoulders, guard fencing, whether wire rope barrier or other, the development of an effective roadside and road verge management strategy so that either the clear zone, the guard fencing or the road design could be well integrated, and site-by-site treatments, such as intersections, overtaking lanes and rest areas. But if I was king for a day — the shoulders and the roadside. Peter, would traffic and roads want to add anything to that?

Mr DALY — I would just reinforce what Ken said. I think looking at programmatic upgrades of the road system is vital. What we have done in the past has been very successful with black spot programs, and I think there is a huge body of evidence out there that they work and that we know what particular treatments are very effective for different types of crashes. I think applying that on a system-wide basis is certainly what I would be doing if I were king for a day.

The CHAIR — We often talk about the three or four main areas of driver behaviour. We talk about alcohol, speed, fatigue, but it seems to me that what we seem to miss out a lot is inexperience, especially with our younger drivers. Does the RACV have a position or some thoughts with regard to how we ensure we put more experienced younger drivers on to our roads?

Dr OGDEN — Indeed we do, and again I would like Anne to respond.

Ms HARRIS — I certainly think inexperience is one of the main causes of young driver crashes. In terms of trying to get people to get more experience, a lot has been done in Victoria in terms of raising that as an issue in a lot of publicity campaigns, and that is starting to get through, I think. Some of the issues really are — and it is metro and country — making sure people have good experience in a range of conditions before they go for their Ps, and some people certainly are getting that a lot more than they used to, getting their Ls at 16 and having a good two years of experience, having parents who are interested and supportive and having them do a lot of supervised driving. Other people are not, and it is really doing enough to pass a test, and that is what they are doing. So in that regard I suppose we have certainly been very supportive of looking at whether there are some number of hours set as mandatory. Obviously it would need to be a high number to be effective, in the vicinity of 100 to 120 hours. The challenge in terms of making that mandatory are the people that are not in the position to get experience, the people who may not be having relationships with parents, may not live with parents, sort of more marginalised young people, and they are really a group that needs a lot of focus because they are possibly our highest risk group anyway to start with. So if you had a system that discouraged them from getting licensed or made it too hard for them, it would be detrimental, but initiatives, regardless of whether you have a mandatory figure or not, to help that group I think are important. But going forward, setting some figure would help, by and large, as long as you looked at those disadvantaged groups.

The CHAIR — So with the provisions you have in place in Victoria at the present time, where it is 110 hours and the log book, your feelings or concerns at the present time are that it is not mandatory; it is more —
Ms HARRIS — Some people are getting it and some people are not getting it, and some people are getting it in a range of conditions and circumstances and others are getting less. So some young people very rarely have driven in the wet or very rarely at night or very rarely with other people in the car, so those sorts of situations obviously they need to get experience in; very rarely some of them overtaking on a country road. They need experience. So if you had a system where you had a number of hours set, mandatory, it would lift the bar, I think, across the board.

Mr BISHOP — I am quite disappointed with the RACV and its attitude towards prelicence training. I have read as much as I can about the issue, and from my perspective I would have thought that prelicence training would have been a component involved with saving lives throughout Victoria, if you look at the graphs which I am showing an interest in now as well. But it appears that the RACV has not take an opportunity to join in that particular area. The references to programs that you support are all on-road, after-licence, as I understand it. You are certainly not interested, for instance, in having it on the curriculum in schools, which, I believe would be a very strong move towards making our young drivers safer.

In Mildura they have a co-project with VicRoads where they go through the training course at the school as they approach their L-plates. Charlton Driver Education Centre has certainly, in its mind got some results in relation to producing safe younger drivers. We were in Canberra the other day and they have their Road Ready and Road Ready Plus programs. The difficulty is that no-one seems to be able to home in and have enough numbers to conclusively prove it. Again, I make the point that I am disappointed that the RACV has not taken up that opportunity. I ask them to comment on that, or certainly broaden their views and put that up as part of the package for making younger drivers better equipped when they go on the road. I am not talking about advanced driver courses; I am talking about the prelicence courses.

Dr OGDEN — I would like to respond to those comments. Firstly, the RACV is very interested. In the prelicence period we advocate 120 hours on L-plates. If I can just respond in a general sense, our policy is to always look for the evidence. The evidence on driver training is very elusive. There is not a lot of evidence that anything other than on-road experience in real conditions works. That is why we are reluctant to support things, no matter how well meaning or superficially attractive they appear, if the evidence is that they do not work. It is in that context that we have really put our eggs in the on-road experience basket rather than off-road experience. There is a lot of evidence that off-road does not really do any good and indeed may do some harm. I think there is not a great deal of evidence that getting to drivers after they have their licence is effective.

Let me put it in a positive way: the most effective system is to get to them while they are still learning so that their habits are formed very early. But those habits need to be acquired in real traffic on real roads and in a circumstance conducive to learning the lessons. But, in that context, do you want to elaborate, Anne?

Ms HARRIS — I think what we have struggled and grappled with in the work we do in this area is that a lot of the research points to, particularly with what you might call ‘high risk’ drivers — young people — not lack of experience but more blatant risk taking, and how to address that issue. That is an important issue. They are the people we see crashing a lot on our roads when they are licensed, and even before — driving unlicensed. How do you address that? When you look at the more traditional, conventional, prelicence driver education programs in schools where there is a bit of driving and a bit of experience, we have been able to find no evidence that that has been an effective way of going; putting your resources — and it is resource intensive — into doing that. Most of the evidence, at this stage, suggests that it is more the underlying motivations of those people that you need to address, and that is harder to do.

We have not ignored this area by any means. We are actively running a program in secondary schools that engages children and tries to get them to learn about road safety and look for solutions through our Transmission program. We have also undertaken some research in collaboration with the Australian Institute of Family Studies and the TAC. That has tapped into a longitudinal research project which has followed a group of over 1000 children born in 1983 in Victoria and mapped them in terms of their school behaviour, their temperament, and their parental reports over the last 20 years; so of course there is a wealth of data on those children. A lot of them have been driving for one to two years, so they are our young drivers.

The RACV has funded part of a study to look at how many risks those young people are taking, and how many crashes they have, then mapping the results to see if there is anything we can learn about those children earlier in their lives that will help us to develop good countermeasures. That report is at final draft stage and is showing some
fairly interesting findings in terms of identifying when the young, risky people start emerging as different from other young people. A lot of it is to do with some of their individual characteristics such as aggressivity, impulsivity, those sorts of issues. That report will hopefully be released in the next three to four months. We designed and undertook that work, which is a fairly lengthy project, to try and understand a little more about what we can do in schools. We wanted to find out what would benefit these people; how much experience they had; how many lessons they had; and did that have any influence on how they are now as drivers with all the other factors. That report is being undertaken at the moment.

We have also recently commissioned a report with Christie and Harrison asking what is the future development of driver training; where can we go; where are the developments? We have done a lot of work looking at it and trying, I suppose, to go beyond what we have now — that we are not sure is working very well — and looking at where we can go in the future.

Mr Bishop — It would seem to me that your comments on, shall we call them ‘disconnected youth’, would be picked up in those particular programs, and I agree that the data is a bit thin because the programs have probably not been going long enough. I get quite cranky that the researchers that you use, which may well be Christie and Harrison, and your documents, utilise off-shore stuff that has been going for a while. But I have not seen any work done on the local stuff here in Victoria, and probably there has not been time to get that full data bank up. I think we have missed the point; and I think you have too, because you have not addressed that particular process. I urge you to have a look at some of those areas where it has been going for some time. What they are trying to do is exactly what you are doing: they are going back over the bank of students they have had in place for perhaps 12 or 14 years trying to track them to compare them, but they have not really got a lot of resources. Could I urge you to have a look at some of their data as well which, in fact, might give us a better tracking process as part of the package. I am not talking about it being on its own; I am talking about it as being part of a package of better preparing our younger people for the roads.

Ms Harris — That is Charlton you are talking about?

Mr Bishop — Yes.

Ms Harris — I understand that the TAC was also looking at trying to talk to us about funding some research which is in addition, I suppose, to the evaluation at Alexander that was also funded by government a few years ago.

Mr Bishop — Monash University did a study on it, and it was not, in our view, complete enough by any means. I do not think they reached a conclusion at all out of the whole process. Some of the data is there now and over the past few years it has probably got some more numbers with it than it had before.

Mr Eren — Ken, you mentioned before about the government’s anti-speed policy, and the public’s perception of that. You mentioned that you might suggest that government should revisit tolerance to speed. Is that what you said before, or did I misunderstand?

Dr Ogden — The issue of tolerance is an inconsistency between the Australian design rules, which allow a legal tolerance of plus or minus 10 per cent, and whatever the enforcement tolerance is. The police, for operational reasons do not reveal exactly what tolerance they are applying, but we believe that the tolerance is less than 10 per cent for speeds above about 60 kilometres per hour. In the city the actual tolerance is probably not too far away from 10 per cent, but in the country the tolerance, as used by the enforcement agencies is, we believe, probably less — and may be significantly less — than the 10 per cent legal tolerance on the vehicle. Be that as it may, the problem we see is that the impression that the public has gained that enforcement is more about revenue rather than about road safety is a concern to us because we readily acknowledge that enforcement has to be part of road safety, but it can only work if it has public support. We believe that the disconnection between the enforcement tolerance and the legal tolerance on the speedometer is one of the factors that is contributing to a loss of confidence in enforcement, and we think that is quite problematical.

Mr Harkness — Could I just turn some attention to the issue of fatigue, and apologies if this has been addressed before. I understand that the RACV has been doing some investigative work on the public perception of rest areas, so I would like your views on what might be done to better enhance rest areas. I am also keen to get your views on the countermeasures that might be possible to address fatigue on young people particularly and shift workers.
Mr DALY — The research that we did on rest areas was quite interesting research. It backed up a lot of research that was already out there. I will make a couple of points on it. The first point is that different types of travellers behave differently when it comes to planning trips. There was a big difference between younger drivers and older drivers in terms of their rest taking behaviour on trips and trip planning itself. It boils down to a philosophy older drivers tended to say that if they were going away for holidays, they would tend to incorporate the journey as part of their holiday, so that the holiday started when they left home. Younger drivers had much more of an urgency to get to the destinations, and they really seemed to be saying that the holiday started once they got to their destination. That disconnection between those attitudes in getting to the destination is very important.

The key point to rest areas is that people will generally stop at rest areas — and this varies according to groups — if those rest areas have the facilities that drivers deem as important. I will give you an example, by omission. A lot of females reported that they would not stop at rest areas at night. The only rest areas that they would stop at were service centres like big service stations and McDonalds, because they had concerns about their personal security. That is a fairly extreme example at one end. If we do not have those sorts of facilities, we are not going to get a group of travellers stopping. We cannot put a McDonalds — although McDonalds would love it — or big rest areas on every highway. What we need to do is to look at facilities in towns. This is not something that we went into a lot in the research, but to examine whether a provision of secure facilities in towns might encourage certain groups to stop.

The main research on rest areas that came up was that there is a difference in the behaviour of groups of travellers. We do need to recognise that younger drivers and older drivers have different imperatives. Commercial drivers, travelling salespeople, to use a bit of a cliché, and those travelling for other reasons also have a bit of a disconnect. Those who are travelling for business tend to stop a bit less, or they report that they stop a bit less, than those who travel for other reasons.

The second key point was that if we want to get people to stop, we need to make sure that rest areas have the facilities that will encourage them to do so. We know what those are. People do tend to stop for toilets — there is an imperative there — and people will tend to stop if they perceive that the rest area is safe and secure. This is an important distinction; safe rest areas, in the terms that we used in the research, means that the area is separated from the road. So the rest stop is not beside the road and people actually feel safe, from a road safety perspective, stopping there. There is a good distinction between where the vehicles pull in and where people walk. Secure means that it is well lit at night. That in itself causes a problem, because if you want commercial drivers to stop at a rest area at night to take their mandatory breaks, then they want something that is not lit well and that is quiet. A personal traveller wants something that is well lit and noisy, because they feel more secure.

Mr HARKNESS — You separate heavy vehicles — —

Mr DALY — Exactly, and I think that VicRoads is doing a lot of good work in that area in developing those sorts of strategies.

The third aspect that came out that is a little bit different in Victoria compared to other states, and certainly some other countries, is how we provide advance notification to people about where the rest areas are. I have travelled a little bit, and I think Victoria has a very good network of rest areas or places where people can stop. What we can probably do a bit better is to inform people where those are and let them know, not only when the next rest area is coming up — for example 5 kilometres, 2 kilometres, 1 kilometre away — but also inform them of what their choices are at that point, or at a series of decision points, as to whether they can stop then or down the track. What we have done is institute a program a number of years ago, whereby we looked at rest areas on all the major roads across Victoria. This Friday we are looking at the Hume Freeway again. We put on our web site where every rest area is across the M-A road network and some B roads, and also what facilities are available at each rest area. So you can go onto the web site and you can search for rest areas on the Hume Highway that have a toilet. That sort of information provision is very important in terms of those who do plan trips. They are able to get the information in advance. Once they are out on the road, they know what their choices are about where they would like to stop. Does that answer the question?

The CHAIR — Absolutely.

Ms HARRIS — We understand that shift workers, because of their work patterns, are likely to be at more risk in relation to fatigue-related crashes. In terms of practical solutions to that, things that could be done could be
better fatigue policies and workplace practices. This could be in terms of educating people but also having workplaces that are flexible enough to say that if an employee is somewhere and fatigued they can actually rest and sleep as a priority so that they do not put people at risk. It depends on the nature of the work and the nature of the organisation, but to have policies in place, that enable people to feel that they can actually say, ‘I don’t want to drive home’, or, ‘I can’t undertake some work because I am so fatigued and tired, and I might be at risk’ is important.

Mr HARKNESS — It does not work like that.

Ms HARRIS — That is right. It is probably not a good example.

In terms of young drivers who are fatigued, it is hard to get hard data on that. We are trying to do a little bit of work on that at the moment. Obviously we think that because of the lifestyle factors that many young people have — with recreation, study and other work — they are more at risk of fatigue-related crashes. It is obviously very hard to get data on fatigue-related crashes. It is also difficult working out what approaches, messages and programs work with young people to try and get them to change their behaviour in terms of fatigue. In the next month or so we will be trying to undertake some work and get focus groups with young people to work out what messages they respond to positively or negatively and what their preconceptions about fatigue and crashes are. We will certainly share that with the committee. It is a difficult issue. We are grappling with that at the moment.

Mr HARKNESS — What is your intuitive feeling about this? Would they walk about the car every 2 hours or have a miniature sleep?

Ms HARRIS — No, it is more an issue of making sure that people are not in sleep debt before they head off on a trip, and also that they are not driving when they would normally be asleep. They are the key measures. The short term measure is certainly a power nap, if you feel fatigued. Sleep debt and other factors are more of a management of lifestyle issue. Choosing not to drive when it is too risky is a difficult message to get across to young people. They are difficult to get messages across to without the big stick of enforcement. In the long term we might look to technology to help us. In the short term we will try to understand some of the practices of young people and what they will respond to. We will certainly share that work with the committee when it is finished.

The CHAIR — I am mindful of the time. Are their further questions for the RACV?

Mr BISHOP — I have one more. We have come a fair way from seatbelts. Has the RACV got any view for the future for technology in safety application in cars? One example that springs to mind is that if you are too close to the car in front, the brakes automatically come on. Do you have any ideas about technology for the inside of cars as well?

Dr OGDEN — There are certainly a range of technologies that are in all new vehicles, and are in emerging new vehicles and will no doubt find their way into vehicles in the future. You have mentioned some examples. One of the others that I believe has a great deal of potential is what is called the Mayday alert, that when there is a crash the communications media informs emergency services that the crash has occurred and where it is. The downside of some of these features is distraction, and the Monash University Accident Research Centre has done some real-life trials as to the response of drivers to some of these devices. Over the last 10 or 15 years the improvement in vehicles is partly because of their better crashworthiness but also through safety features such as anti-lock brakes and stability control systems, airbags, side airbags and the like. These will continue to roll out.

The CHAIR — I thank the RACV, in particular Ken, Peter and Anne, for their input. You will receive a copy of the transcript in due course, and I thank you for your time and input this morning.

Witnesses withdrew.
ROAD SAFETY COMMITTEE

Inquiry into country road toll

Inquiry into Crashes Involving Roadside Objects

Melbourne – 10 May 2004

Members

Mr B. W. Bishop  Mr T. W. Mulder
Mr J. H. Eren  Mr E. G. Stoney
Mr A. R. Harkness  Mr I. D. Trezise
Mr C. A. C. Langdon

Chair: Mr I. D. Trezise
Deputy Chair: Mr E. G. Stoney

Staff

Executive Officer: Ms A. Douglas
Research Officers: Mr G. Both and Mr P. Nelson

Witnesses

Professor I. Johnston, director;
Professor M. Cameron, adjunct professor;
Mr B. Corben, senior research fellow; and
Dr D. Logan, manager, vehicle engineering, Monash University Accident Research Centre.

Necessary corrections to be notified to executive officer of committee
The CHAIR — I welcome the Monash University Accident Research Centre representatives to this hearing of the parliamentary Road Safety Committee. Thank you to Ian Johnston, Max Cameron, Bruce Corben and David Logan for your time and input into our inquiry. We do appreciate it. As you are aware, we are running two concurrent inquiries at the present time. They are relatively broad inquiries into the Victorian country road toll and concurrently, an obviously related inquiry into crashes involving roadside objects.

Prof. JOHNSTON — Thank you, Chair. It is a great pleasure to come along and make a bit of a contribution to these two inquiries. We have a presentation which we will try and run through as quickly as we can and leave as much time as possible for questions.

Overheads shown.

Prof. JOHNSTON — This is a bit of an outline of what it is. We are going to talk about the two inquiries together, not separately, and I hope that will work fairly well. We will talk briefly about the nature of the problem and then we will move on to system design and behaviour control, to compare and contrast, if you like, the two different kinds of strategies. Then break it into two chunks — that is, what can be done right now, in the here and now, where the safe infrastructure is, which is really the primary one; and within that, the speed and safe roads nexus with a bunch of supplementary measures particularly relating to enforcement as it applies especially in the country. Then there are some issues for the future that we want to touch on, things to do with data and what we do not know but really need to know to make long-term gains, and where that leads us. Just to reflect, this is the percentage of all deaths in Victoria over the last four years just simply split between the Melbourne statistical division and the rest of Victoria. You will notice that for 2000–01 it was running at about 55 per cent of the deaths in the Melbourne statistical division and about 45 per cent in the country. That has reversed in the last two years primarily as a result of the whole speed management campaign which has been immensely successful in Melbourne but not so successful in the rest of Victoria. The split now is almost 40:60. That is an interesting reversal, and that is obviously why you are focusing on the country road toll. The other point to make is that these are percentages of the total, so if something goes down something else has got to go up. I need to underline that the absolute number of deaths in country Victoria is not actually on the increase. What is changing is that as a proportion of the total problem it is becoming more and more in focus.

Mr EREN — Can I just ask at this stage: do you have any data on whether those fatalities that occur in the country areas are metro people visiting the country, or are they country residents?

Prof. JOHNSTON — Primarily residents. This shows the same thing, only this time it shows deaths plus serious injuries. I need to define the term ‘serious injuries’ because in the police data system we are using here, a serious injury is one where the police have reason to believe somebody was taken to hospital, not necessarily admitted but taken to hospital as a result of a crash, so it actually runs a fair way down the injury severity scale. When you look at the urban or the Melbourne metro area versus the rest of Victoria split you find that it is two-thirds Melbourne metro and one-third country. Interestingly, that has not changed in the last two years, unlike the deaths.

The CHAIR — Ian, are you going to talk about why that is the case?

Prof. JOHNSTON — Absolutely, and this is it.

The CHAIR — Fine. I just did not want to miss the opportunity.

Prof. JOHNSTON — If you look at this overhead, it shows injury severity. In any kind of distribution you will get a relatively small number of deaths, a relatively large number of moderate injuries and a relatively small number of very minor injuries; it is a real bell-shaped curve. What happens when you get a package of measures such as we have seen in Victoria over the last two or three years is the whole distribution shifts to the left so that what we see falling are the fatalities — the blue hatched area — and the very serious injuries, but what is increasing are the more minor injuries — in other words, the frequency of crashes is not altering very much. You are getting much the same number of crashes as we have had in the past, but what we have altered is the severity of the injuries that are occurring, so when you look at fatalities you get this massive shift. However, when you look at fatalities plus all injuries it appears as though nothing is changing, when in reality it is. What is changing is the upper end of the injuries severity but you are getting an increase in the lower end of the injuries’ severity. It is kind of a really important point because the government’s road safety strategy Arrive Alive has a target of reduction in death and serious injury. In the death one, clearly the state is winning, but when you look at the serious injury...
figures it looks like you are not. In reality you are and I think you have to take a finer ruler, if you like, to the injury severity scale.

Moving on, the first point I want to make about deaths is that about 60 per cent of all the deaths in Victoria happen on two classes of road — the 50–60 km/h speed zone roads in metropolitan Melbourne and the 100–110 km/h in the rest of Victoria. Again you can see the dramatic effect of the speed management package in the last couple of years, where it has gone from a quarter of all the deaths in Victoria happening on 50 or 60 km/h roads in Melbourne, down in 2003, to 16 per cent. That is a massive reduction but obviously the proportion from then on, on the 100–110 km/h roads, is in fact going up. This is just a spread of the rest of Victoria — that is, ex-Melbourne across the three different classes of road. You can see the very small proportions in the country towns and the approaches to them, with most of the problems being out on the open road.

The CHAIR — Again, is that because there are more crashes on the open road, or because of the severity of the crashes?

Prof. JOHNSTON — It is because the severity of crashes on the road is particularly high. We are going to spend a fair bit of time on that because, to us, one of the fundamentals is that as yet there is a mismatch between the speed limits set in process and the class of road that we are dealing with, and we will illustrate that very shortly.

Mr EREN — Is the severity the result of the population getting older, or is it the fact that we are driving cars that are not very safe?

Prof. JOHNSTON — It is neither of those. Certainly ageing is not helping because older people are more frail; but that is not a dramatic influence on the severity in the country, and in fact cars are much safer than they used to be so we are getting gains there. No, it is simply the law of physics: if you are going fast enough when you hit a tree or a pole — and particularly if you hit a tree as opposed to hitting another vehicle where the energy is spread across a much larger area — the collision is more focused. With something like a tree there is no room to absorb the energy and it is all impacted straight onto the car. It is really just straight physics; it is really all about the laws of physics. So it is very much speed related. The question is what can we do about it?

I turn now to roadside objects. Unfortunately, you will notice that this is five years of data ending in 2000. What I have shown you up to now is data for the last four years. When we try to disaggregate the data, we do not have the more recent stuff, so I do not know the extent to which this has shifted also as a result of the speed management pattern of the last couple of years.

Mr LANGDON — When will you be getting up-to-date data? I assume it is on the way.

Prof. JOHNSTON — We should be able to do this in the not-too-distant future, I think.

The CHAIR — The question I was going to ask is whether there is a weakness in the system for collection of data. We are now in the year 2004; that data is three years old — not that I am pointing the finger at MUARC; far from it, but is there an issue in Victoria or across Australia with regard to the collection of data?

Prof. JOHNSTON — There is, and right at the end we are going to talk a little about the data; but it is certainly not all four years old for the detail. It has to go through a process where it gets geospatially coded; you have to know exactly where the crashes were, what the class of road was, and what the speed limit was. That tends to be a lot further behind real time, but I think Max will talk a bit about that towards the end. So we had nearly 16 000 casualty crashes in this particular sample, and it was split about sixty-forty. The telling thing — and this comes back to the point that was just being made — one in three of the fatalities in metropolitan Melbourne are collisions with roadside objects. One in two, fully 50 per cent, of country fatalities are collisions with roadside objects. So between the two it really is the single largest untreated problem we have, if you like. That is why we were so delighted to see the terms of reference the committee has because it is a long time since people have really focused on what we think are the great issues still to be addressed.

When we ask why people are running off the road and hitting trees and poles or whatever, the reasons are, if you like, all the usual suspects: people have been drinking or taking drugs; they are speeding excessively; they are fatigued; or they are not wearing their seatbelts. The question is whether the measures in place to tackle all of those things are going to continue to give us the returns. What I am going to argue is that we are coming towards the point of diminishing returns with some of those measures. Let me try and explain that, taking drink-driving for a
start. With the routine testing at autopsy of fatalities for blood alcohols we knew way back that one in two dead drivers was over the limit. Random breath-testing was introduced in the mid-1970s but it was initially relatively lowly enforced. It was in the late 1980s that it really got cranked up enormously and was highly successful. It went from one in two dead drivers to one in five dead drivers — that is a massive effect. For the last 10 years it has remained at one in five dead drivers, so the intense random breath-testing has had a massive effect in getting a lot of drink-drivers off the road, but it has not really impacted on the hard core of solid drinkers.

Mr BISHOP — Is that a bit unfair? What about the educational systems that have been put in place in relation to drink-driving?

Prof. JOHNSTON — I think they have contributed as well. I think in all of those things you cannot have successful enforcement without successful education as a partner. That package of things has had a great effect. What I am saying is that there is still a rump — a sizeable rump; 20 per cent of dead drivers were over the legal limit — that we are not getting down any further. I am suggesting that even if we doubled random breath-testing from what it is now we are not going to bite into that last bit, so we have to look at other ways of saying, 'So if it is the drunks hitting the trees, what can we — —

Mr LANGDON — Does that one in five relate to a particular age group?

Prof. JOHNSTON — No. They are certainly differential across age groups, but that is right across all ages. The same thing with seatbelt wearing. Australia has the highest seatbelt-wearing rates in the world — we are looking at, in front seats, 96 or 97 per cent of people wearing belts. But that last 3 or 4 per cent are accounting for well over 20 per cent and sometimes closer to a quarter of all fatalities. How are we going to get the last 3 per cent to wear their belts? It almost certainly is not going to be from additional seatbelt enforcement or even education. You were talking to the RACV before about intelligent transport systems. If you look now at the seatbelt reminder system in a vehicle, when you turn your ignition on a little illuminated stick figure with a belt comes on your dashboard for 5 seconds and disappears; it is just an absolutely useless system. We have done some research which has indicated very favourable benefit-cost ratios for fitting much more aggressive reminders — including all the way to, ultimately, an interlock so the car will not start if there is an occupied seat without a belt. If you are looking at making recommendations about things like that last rump of non-seatbelt-wearers then that is clearly the way to go. We have not been able to get to first base with the federal government, where the responsibility for design rules lies. They are saying market forces will fix it.

Mr LANGDON — My latest Holden is very aggressive. Unless you click your belt in, it does not stop beeping at you.

Prof. JOHNSTON — That would be an upmarket one; it is not in the standard models. I am saying politely, ‘You have got one of the good models’.

The CHAIR — So is that beeping that we also get in the Fords not in the standard model?

Prof. JOHNSTON — No. Base models do not have aggressive reminders.

Mr HARKNESS — In America with some of the cars, when you turn the ignition on, the seatbelt actually comes and wraps around you.

Prof. JOHNSTON — Yes, it does. The Americans have got some very interesting experience with that sort of stuff, and a lot of people have gone through the disconnect process too. So yes, for people with aggressive reminders there is a great temptation to get the latest issue of Home Mechanics or Home Electronics or something and disconnect it. So there are issues in there, but if you are looking for where you would get a major gain out of a vehicle-related piece of technology then that is one that would be a great one.

Mr BISHOP — On that instance — I just said to the Chair that perhaps a boxing glove comes out and punches you or something to get you to put your seatbelt on — that would not be particularly expensive, would it?

Prof. JOHNSTON — No.

Mr EREN — What, a boxing glove?
Mr BISHOP — No. But it would not be particularly expensive to fit an aggressive — —

Prof. JOHNSTON — No. They were less than $100 a vehicle, if I recall correctly. You need a sensor in the seat, so that the seat knows there is somebody sitting in it, linked in, but no, it is not expensive and the technology is readily available. I really just threw this in, partly because — using those two examples of drink-driving and seatbelt wearing — to say we have milked as much as we can out of some of those measures.

Rune Elvik is really one of the giants in the field operating out of Scandinavia. He has done some estimates that if we had everybody behaving perfectly we would still have about half the fatalities and about 70 per cent of the injuries simply because everybody is out there every day and we all make mistakes in everything we do. You can be a very good golfer, but you will still miss a putt every now and again or slice off into the trees. That is what people do and that is how a lot of the crashes happen. So that tends to underline the importance of getting the system as safe as it can be, although we think we are a fair way from that.

So the key target from an infrastructure perspective at the moment for metropolitan Melbourne is that the roadside hazard problem is major. Bruce is going to talk a fair bit about that, but it is also very difficult to treat in the metro area. Outside of the metro area roadside hazards is certainly no. 1. What you do with intersections in the country is a second issue of primary importance that really can have a massive effect. The introduction of roundabouts on minor country roads where they join major roads and staggered Ts are the sorts of things Bruce will talk about. Head-on crashes really bring up the rear by a long margin, yet we tend to think about them as one of the major ones we look at. It really is all about matching the speeds to the level of infrastructure safety. In the urban areas the speed enforcement works. There is absolutely no doubt about that; it has had a tremendous effect. But in the rural areas it is much harder because of the size of the network, so we are arguing particularly in the country area for the matching of the infrastructure quality with the speed management process. That is fundamental.

Mr BISHOP — Ian, on that question do you say you have irrefutable evidence that accidents have been caused by exceeding the speed limit in country areas?

Prof. JOHNSTON — Yes, there is no doubt about that.

Mr BISHOP — Can you explain to the committee how you got that evidence?

Prof. JOHNSTON — There are two forms of evidence. One is what is called case control study, where we take a bunch of crashes, and then you take a bunch of similar events that did not result in crashes, and the University of Adelaide has done a lot of work on that, both in urban and rural areas, and has shown that deviations of relatively small amounts above the speed limit increase the risk of a casualty crash quite dramatically. The more you are above the limit the greater the increase in risk.

Mr BISHOP — The question was, though, how do you know they were above the limit?

Prof. JOHNSTON — In the crash? There are quite a number of very sophisticated crash reconstruction computer programs now and from measuring the deformation on the vehicle and gathering some of the data at the scene such as skid marks — but I think David can talk to this better than me, but mostly in crash deformation you can compute the impact speed, and from the impact speed you can estimate what the travelling speed was. There are some pretty good techniques around for getting a really good handle on what the speed must have been before the crash.

Mr BISHOP — So that is accurate?

Prof. JOHNSTON — Like everything else it is plus or minus a margin, but it is pretty accurate.

Mr BISHOP — Plus or minus what?

Dr LOGAN — I think with the combined evidence of crash deformation and also skid marks — crash reconstruction also looks at the shape of the skid marks as well so you can see whether the person was doing a long yaw across the road or whether they were trying to stop in a straight line. I would not want to quote a figure, but it is accurate enough that you can conclusively say whether they were travelling to a certain speed that was above the speed limit in most cases. I mean, you cannot. Individual estimates are around plus or minus 15 per cent, but across a big spread of samples it is much better than that.
**Prof. JOHNSTON** — There is a lot of debate about whether speeding is 30 per cent of the causes or whatever. To me, that misses the point.

The second form of evidence is that in at least 15 different countries every time someone has increased a speed limit, casualties have gone up. Every time someone has decreased the speed limit, casualties have come down. It has happened in at least 15 different countries around the world in both urban and rural areas. No matter what the contribution of speeding is to the cause of the crash, there is absolutely no doubt that if you can get the travel speeds down, you can get death and injury down.

**The CHAIR** — We have seen that in Melbourne in recent years.

**Prof. JOHNSTON** — Absolutely. That is yet another example of the same thing and it is probably one of the most consistent results all the way around the world; every time someone shifts a limit up, casualties go up; every time it goes down, they come down. It is one of those universal laws.

This is a pretty fundamental picture and I heard the RACV talking about the M roads, which are out on the right, the rural motorways, and down through the A, B and C roads. There is no doubt with the high-volume roads you are looking at the best road design we have, right down to the so-called C roads where the design is quite low, and, of course, that reflects the traffic volumes; it reflects mobility in this case travel time, between point A and point B. The fascinating one is the last bit — we have these big differences in road quality — and certainly the quality of the crash-worthiness of the infrastructure — but basically no difference in the open road speed limit. So we permit a 100 km/h on the lousy roads and it is only at the very top end that we let it go up to 110 km/h. It is that fundamental concept that we want to basically challenge.

In matching the speed to the infrastructure, we are not sitting here arguing that we ought to be reducing the speed limits right across the whole network. If you want a 110 km/h road you can have one; all you have to do it make sure that it is a crash-worthy road. It seems to me that our highest standards of roads kill more people than any other roads we have. It sounds weird, but it simply means that if you look at the Hume, which is a very high-standard road, it still has a lot of deaths even though the death-rate per 100 million vehicle kilometres is low because enough people run off the road; and while the road itself has a high design standard the roadside does not, so they still hit a tree when they run off it. We have done a great job in designing a safe road, but a fairly poor job in doing a safe roadside. Even at those M roads, we have a lot of work to do on the safe infrastructure. It is not that we are arguing for low-speed roads; all we are saying is that you have got to match the safety of the infrastructure to the speed limit you want, and if you cannot afford to do that on the low-volume roads, then you have to look at the speed limits that are appropriate to those low-standard roads. That is really the fundamental message.

**The CHAIR** — Can I just ask how much effort should be focused on helping drivers to keep their vehicles on the road, rather than just concentrating on providing a forgiving roadside? Do we allow 10 metres on the side of the road; do we seal all the shoulders up to 20 metres from the road? Where do we stop?

**Prof. JOHNSTON** — We are going to be talking about that a bit. There is no doubt that if you seal a shoulder as opposed to having a gravelled shoulder you get a big advantage in recovery time. If you used wide edge lines — and it is interesting that on our M-standard roads we use 150 millimetre edge-lines and on our narrow roads we use 80 millimetre — on the narrow roads, we would have much better success in keeping people within the travelled lane. So there is no doubt that sealing the shoulders, using rumble strip edge lining — all this sort of thing is valuable. You have to do all of that. If you hold that thought a little bit because Bruce is going to talk about this in just a minute. To summarise this, if you take in the urban area, particularly with the general urban speed limit now at 50 km/h, you really only need moderate speed enforcement on the 50 km/h roads — that is not where the enforcement has to be, but with some lower speed limits such as school zones.

In the urban areas we really need to look at a relatively small number of the most highly trafficked arterial roads and put our energies there because it is disproportionate. Our estimates are that something like 70 to 80 per cent of the casualty crashes that we are most interested in — in this case the roadside objects — are occurring on about 15 or 20 per cent of the urban network. It is not as though you have to treat every single road; you can get the biggest bang for your buck on a relatively small number of roads. In the rural area, as I have said, if you want a high-speed road that is fine; you just have to manage the infrastructure on it; if you cannot afford to manage the infrastructure
on it then you have got to drag the speed down. It is really a very simple message. Let me hand over to Bruce to talk some more about that part of it.

Mr CORBEN — I wanted to pick up the story from where Ian has left off. In terms of those boxes on that diagram that you just saw, that deals with crashworthy infrastructure and talk about the opportunities that exist to address that, and in so doing talk about the relationship to speed as well. To do that, given the context of these two inquiries, we need to think in terms of intersection crashes as a primary source of conflict and trauma; we need of course to think about roadside hazards across the whole of the state both urban and rural, or metropolitan and rest of Victoria; also in terms of head-on crashes principally in the regional areas of Victoria as well.

Firstly, in dealing with intersections and thinking about those in a rural context, we have done a number of evaluations over about a decade or a decade and a half at Monash University Accident Research Centre looking at the effectiveness of different types of infrastructure treatments that have been carried out as part of the various black spot programs that have been implemented during the 1980s and after that time. One of the really standout treatment types, in terms of having the biggest success in reducing casualty crashes, has been roundabouts. That result has come up time and again in these evaluations. We have had benefit-cost ratios on average in excess of five, so benefits are five times the initial and ongoing costs. Typically the reductions in casualty crashes have been in the order of 70 and 80 per cent and in many cases better; and in terms of the costs of those crashes picking up some of the severity issues, not just a reduction in numbers, the result has been even better at 80 or 90 per cent. In dealing with intersections in rural areas that is probably one of the best things that we can do. The reason they work so well is that they simplify the gap selection task compared to many other alternative design types. The risk of crashes reduces, and for those crashes that do happen, they actually happen at much more moderate speeds and on more favourable angles so that the crashworthiness of the vehicles is more able to accommodate the sort of energy transfer in those crashes. Hence the vehicle becomes much more capable. There are lots of other examples I guess we could talk about but to present that issue we will talk about roundabouts as the best-performing treatment type.

Moving on now and looking at the bigger problem type, and that is roadside hazards, we have been looking at this issue in a number of projects over a number of years now, and the point to make about the trauma problem across the whole of Victoria is that it accounts for very high economic cost. It is a longstanding problem; it has been one that has been with us for decades now and it is of concern to us that it is still with us without much reduction. If we look at the spatial distribution — and this map is probably not allowing you to see the detail that might exist at a better scale — it shows that the problem is a Melbourne metropolitan problem, but it is also very much about our high-standard freeways in rural areas as well. Our latest figures, which are a couple of years out of date, indicate that more than half of the problem is in metropolitan Melbourne in terms of casualty crashes. It is the dominant problem type in rural areas; more than half the serious casualties happen in the rural areas in this way. However, one of the positives about the spatial distributions, if there is a positive in all of this, is that they tend to be concentrated on the higher standard, higher volume roads, which means that if you can treat a minority of the network — a small length of the network — you can actually address a very large proportion of the problem. That is a positive in the way that they are spatially distributed.

Another important issue in the roadside hazards area is really to look at the responsibility for our roadsides. We know from driving around that our roadsides are littered with all sorts of hazards, trees and poles being the most common. In rural areas we have rock embankments and rough, non-traversable terrain that can cause vehicles to turn over, as well as culverts, drains and bridge end posts, all highly represented in the general problem of these sorts of crashes.

There are a whole range of organisations that are also involved in the quality of our roadsides and have an interest. Road authorities, VicRoads, and all of the local government authorities throughout Victoria, have a part to play; utility authorities in terms of placement of power poles and so on at the roadside; and public transport operators, particularly the tram system within the metropolitan part of Melbourne with poles at the roadside. Of course the TAC, the RACV and our environmental groups as well have an important interest in these issues, so the real issue here is that there is no single focus of responsibility in this particular area, and that being everybody’s responsibility can also be a weakness in that then it can be nobody’s responsibility as well, to assure the safety of our roadsides. That is an important aspect of it. Looking at the institutional accountability a little further, all of the road authorities owe a duty of care to road users to make sure that the infrastructure is in a fit state for use. That in itself is probably not enough; there has certainly been a growing awareness of the liability issues which have been changing in recent times. They are providing, we believe, greater incentive for road agencies to act in a better way, but the effects of these changes are somewhat unclear and how big those effects will be is also as yet unclear, and we really think...
that to deal with the roadside safety problem other actions will be needed if we are going to make progress on this major problem.

The other issue that we need to look at is: can we use social responsibility and can it be developed as a way of changing the way things have been in recent times as well? I am not sure about the answer to that at this stage, but I think it is one of the issues that we would like to look at further.

Mr EREN — Obviously there is a lot of analysis being done on the accidents themselves, but is there any analysis being done on the drivers involved in fatalities leading up to that crash regarding their states of mind? Had they had counselling for drugs previously? Had they been counselled for use of alcohol, their state of mind. Is any of that analysis done on those persons involved in the fatalities?

Mr CORBEN — Generally not, but I think some years ago one of our colleagues undertook an in-depth study of single-vehicle crashes in a case-control method of the type Ian was talking about. Some of those more detailed issues about the drivers involved were examined — I guess I cannot tell you offhand the particular results unless anyone else here can — I think that it has been looked at. But it is more in terms of special studies — one-off type studies.

In finishing it off, the social responsibility issue may be able to be developed as a positive driver of change. If we look back at what has been done in the past to actually tackle this problem, and what approaches have been made and are currently being used in the way of infrastructure solutions, it could be described as falling into two main parts: the first group being about crash risk and what we can do to reduce the likelihood of crashes occurring. The sorts of measures include improved horizontal alignment — removing some severe or low radius curves on rural roads especially; providing more skid-resistant pavements so that drivers are less likely to run off on those curves, shoulder sealing is one of the measures we were talking about a short time ago. Some of our studies have shown that this reduces casualty crashes by around 20 to 30 per cent of crashes of this type, particularly in the rural settings. Also, enhancing the delineation of a lot of the rural roads as well through normal edge lining or through tactile edge lining is a way of alerting people to the fact that they are actually running off the road. A lot of that work has been done and has been evaluated. Another category of treatment type —

The CHAIR — With regard to the tactile line edging, has there been any work down the centre of the road?

Mr CORBEN — We raised that issue as a possibility for some circumstances to try and improve safety along routes that are used by motorcycle riders, such as the Great Ocean Road, Arthurs Seat Road et cetera, where there is a record of motor cyclists having head-on collisions by cutting corners and so on. There was a concern expressed by riders themselves that running over those lines might destabilise their bike whilst they are leaning over and cornering. However, I know that in the USA some work has been done using tactile centre lines — I cannot quote the figure — but I think that there have been some positive results there. It does have potential and there might be a softening of the view by the riders about that at the moment too. Sorry about the photograph, it was okay when we put it in.

Looking at the issue of how we reduce the severity of injuries, a number of the typical treatments have been used in recent times. Probably going back a number of decades is the use of clear zone, where in urban areas the standard is really set at a desirable 3–metre distance between the edge of the pavement and the actual hazards that might be present. In rural areas because of the higher speeds, that extends to about 9 metres or 10 metres. We have been questioning quite seriously the adequacy and the practicality of being able to provide those sorts of clear zones, and I will talk a little bit more about that shortly.

Other things being done like the using of frangible or energy absorbing roadside objects, such as street lighting columns, to absorb some of the energy on impact. There have been some successes as well with the conventional use of guardrails and other barriers that we have been seeing on our roads for a number of years as well. They are primarily about reducing the severity of injuries. We have also, through the 1990s tried to evaluate the success of a lot of these treatments; a number of — —

Mr BISHOP — Could you go back to that previous line, ‘Injury risk’ — are you talking about trees on roadsides, as an example?

Mr CORBEN — Yes, but there are a whole range of objects that can be struck.
Mr BISHOP — We have heard evidence from a large number of rural municipalities and others, and one of their issues is the capacity they have after they have conducted a safety audit on their roads to in fact remove a tree that presents a safety risk in their view. They are not intending to do large-scale clearing of trees but there might be one or two that in their view it is necessary to remove. They then have to go through a permit system with the Department of Sustainability and Environment. They have reported to us that this process is extremely difficult, very bureaucratic and likely to end up being very expensive. They might have to plant another 100 or 200 hundred trees in order to remove one or two trees, or they might not be allowed to do it at all. When we heard evidence from the DSE they were unaware of any issues, which surprised me enormously because they have 3000 people they send out in the roads area. Do you have any views on that, because that was an issue that came to us as quite substantial?

Mr CORBEN — I think that issue does arise quite frequently. We have been conducting road safety training courses in the various VicRoads regions over the last few months and in talking about roadside safety with the engineers that issue of removal of trees crops us quite frequently. Whilst there is limited evidence about the issue, I think it shows between the road authorities and the environmentalist and DSE they are not able to resolve those situations in a lot of cases. It does leave trees in very vulnerable positions.

Mr BISHOP — In the previous slide you had a clearance of 9 metres in rural areas, 3 metres in urban areas. Do you believe that is a reasonable policy line; or who should manage that?

Mr CORBEN — I guess it is my view that that is in no way adequate for the kind of problems we have encountered, as we understand it. I will shortly present a diagram that shows the breaking profile of vehicles at typical rural speeds, and hopefully show you that it is in no way adequate for many of the circumstances we encounter.

Mr BISHOP — Would your group feel that, for example, VicRoads ought to have a position in relation to that that should be adhered to?

Mr CORBEN — I will argue a little bit later that we need to review those sorts of issues in a fundamental way. I think Ian might want to say something.

Prof. JOHNSON — I was just going to touch on that. There is no doubt that there is inadequate dialogue between the different institutions responsible for different parts of the system. The Department of Sustainability and Environment is interested in the trees and less in the road safety. You do not have to pull all the trees out, you just have to stop people from hitting them; whatever is the best way — with a guard rail or whatever. If we could get all of the institutions to collectively work towards a solution, that would be a big step forward. There are some signs that some of that dialogue will begin very shortly, so that is good.

Mr CORBEN — Continuing with looking at the current and historical approaches to infrastructure solutions, we have evaluated programs of these sorts of treatments, and what we have found is pretty much modest success at the treated locations. The sorts of reductions have been in the order of less than 10 per cent fewer crashes, and around 16 per cent reduction in crash costs. Whilst that is good, and it is a positive finding, it is really not enough in terms of a problem that represents the major source of trauma on our roads. We want to do a lot better than that. We already have a road traffic system that is highly regulated, but notwithstanding that, people still make mistakes. I think that is an important aspect that we need to explicitly take account of in how we tackle this problem. Also, when we think about the present-day speed limits that operate in the urban areas of metropolitan Melbourne and in rural areas, people are facing the risk of death or serious injury when those single decisions are made.

The sorts of objects and issues — and I am sure you heard this before from other people — that contribute to death and serious injury really relate to the fact that we have so many narrow rigid objects at the side of the roads that cause very deep penetration when struck by the passenger compartments of the vehicles involved. We know from other research that the maximum impact speed that humans can tolerate in most modern-day passenger vehicles is somewhere between 30 and 50 km/h. This is well below the speeds we are talking about, certainly in rural settings, but even in metropolitan and urban settings where speed limits are 60 km/h or so. If you strike a pole or a tree at around 30 km/h, even in a modern vehicle with good safety features, you will usually get serious outcomes in terms of injuries. The injury severity is greater in side impact collisions. It is greater when we have older people involved as occupants of the vehicle because of their greater frailty. Occupants of smaller vehicles are more vulnerable to
more severe injuries; and of course higher speeds, because of the exponential relationship with kinetic energy, makes the severity much higher as well.

This is a crash test from a United States crash testing program that shows a modern-day vehicle with good safety features impacting with a pole in a controlled situation at just 30 kilometres per hour side-on. You will see a number of different views of this crash, and the intention here is to illustrate how difficult it is to protect the occupants, even at those sorts of impact speeds in a good vehicle. You get some other views that are perhaps more successful. Notice the extreme intrusion into the vehicle. That is at half the normal urban speed limit.

The CHAIR — Sorry Bruce, what is that speed limit?

Mr CORBEN — It is 30 kilometres an hour.

Prof. JOHNSTON — That is impact speed.

Mr EREN — So if that were at 100 kilometres an hour you would just basically split — —

Prof. JOHNSTON — Forget it.

Dr LOGAN — You can basically split the car in two if you hit a tree sideways at over about 100 kilometres per hour but that does not happen that often because generally by the time you get sideways you dissipate a fair bit of energy through skidding and rotation. In one of our in-depth crash investigation programs we looked at 300 odd cases and about one third of those are side impacts and the estimated average impact speed is of the order of about 35 kilometres per hour. This is a very typical speed at which people hit these sorts of objects.

Mr EREN — Which leads on to the next question. Dr Ken Ogden from the RACV mentioned five-star cars in terms of their safety and he also mentioned that the cars manufactured here would probably rate two out of the five-star rating — —

The CHAIR — Four.

Mr EREN — Did he say four? Sorry, four or some even less. Can you just outline in your view how it would be possible to convince the manufacturers — I do not know where the RACV get their standards from — but to find out from the manufacturing industry in Australia what could be done to bring the rating of Australian made cars to that level?

Prof. JOHNSTON — The Australian industry is much more driven by the design rules and the design rules are at least a decade behind technology. What has happened in Europe is that the automobile manufacturers and the motoring organisations like the RACV, and the governments have got together and developed the five-star rating system, which makes the consumer standards higher than the required standards. Now a similar process has begun in Australia, but the federal government is not a party to it, therefore it has struggled to have the same kind of power. But the local manufacturers here are turning out four-star cars. The other thing that is really interesting in this respect is that people have started to do a star rating system for the roads. I do not know whether the RACV talked about that aspect. In Europe it is called Eurorap — and ‘rap’ just stands for road assessment program.

The CHAIR — We were in New South Wales last week and AAA — —

Prof. JOHNSTON — Yes Lauchlan McIntosh would certainly have talked about that, and the thing is a five-star car will not help you on a one-star road — that is basically the concept. So that was the BMW, which is a five-star car.

Dr LOGAN — Can I make a comment on that: the whole issue is that there is so much energy that has to be dissipated because of the velocity of the car and the mass of the car that in a narrow-object impact like that it really does not matter if you are in a five-star car. There are incremental improvements by going from a three-star car to a five-star car but that sort of crash requires probably more engineering that would ever reasonably be able to be incorporated in a passenger car because of the amount of energy and the very small space and time in which that energy has to be dissipated.

Mr EREN — But some cars have a side-impact protection system I believe?
Dr LOGAN — They do, and this car has a side airbag as well, which you saw in that test, but there is only so much you can do. A side airbag will cushion some of the impact but because you have got massive amounts of intrusion the side airbag really does not have as much effect as it does in a frontal crash where you have the whole front of the car in which to manage the energy absorption. It is a matter of trying to absorb a lot of energy in a space that is realistically only about that big, and there is no realistic way that you could have marketable cars that would have this much space at the side to absorb an impact. It is probably fairly unreasonable to expect the manufacturers to be able to engineer cars to withstand that sort of narrow-object collision. Certainly collisions with other vehicles in a side impact are manageable but not that sort of crash.

Prof. JOHNSTON — So if you are going to go sideways into a tree or a pole you have got a major problem, and it is not one that the vehicle manufacturers will be able to solve, which is why we are arguing so strongly for safe road infrastructure.

Mr CORBEN — So that was intended to make the point that it is really difficult to handle that aspect through vehicle design. We turn our minds to infrastructure possibilities, and I am going to illustrate the importance of choosing the right infrastructure to deal with a one-off road crash problem. This next crash shows a Toyota Echo crashing into a concrete barrier, which are commonly found on our high-standard freeways and in many road situations. This is at 80 kilometres per hour, at an angle of 45 degrees, which is a fairly severe impact. The speed is not that high at 80 kilometres, but the angle of impact is quite severe, although still realistic for a lot of our multilane freeway situations. You can see here the importance of getting the right infrastructure. That vehicle, itself, has got a high rating in the European new car assessment program.

Prof. JOHNSTON — It was one of the best small cars.

Mr CORBEN — In fact the best small car, rated second only behind the SAAB 95, I think. Now if you move on to the next line you can see the comparison between identical tests — the one at the top is the one that you just saw, an impact with the concrete barrier; the one below is an identical test but with wire rope barrier.

Prof. JOHNSTON — Same speed, same angle.

Mr CORBEN — Everything about it is the same except the different barrier type. In the case of the concrete barrier the instrumentation on the dummies within the vehicle showed that the injury risk to the occupants would have been very severe, and you can see very severe damage to the vehicle itself, whereas with the wire rope barrier test, again the instrumentation of the crash test dummies indicated minimal injury risk, minor damage only to the vehicle and the airbag did not even deploy. Just to illustrate why there are vast differences in the performance, you can see this was a test we got from Volvo in Sweden, although I cannot tell you the speed of this one, you can see the dynamics of the test involving the wire rope and the vehicle.

Mr EREN — Most motorcycle organisations do not like the wire rope barriers.

Mr CORBEN — I will come to that as well; we have got a slide where I will address that. Anyway it is a much more benign situation, and it shows how the energy is transferred over a much longer period of time — —

Prof. JOHNSTON — That is the key message — it is about managing the energy transfer, so it is allowing the wire rope to take most of the energy rather than make the car take the energy.

Mr CORBEN — That dramatically affects injury outcomes.

The CHAIR — Those concrete barriers are in use in Australia, aren’t they, in Victoria?

Mr CORBEN — They are common across the world really, particularly in the US and Australia.

Prof. JOHNSTON — When they are used as a central barrier, providing the angle of impact is shallow, then they are not so bad.

Mr CORBEN — They can be very successful in preventing a vehicle that might otherwise cross over into the opposite direction from actually making it through, but on the other hand the severity of the injuries is very high for the occupants of the vehicle striking it, so they are not optimal.

Mr BISHOP — I suspect the angle of 45 degrees was high to run a comparison.
Prof. JOHNSTON — We also ran at 20 degrees, didn’t we?

Mr CORBEN — Yes, we ran at 20 degrees and 110 kilometres an hour, so we took a high speed and a moderate angle and a lower speed and a high angle because we wanted to challenge the barriers to see how — —

Prof. JOHNSTON — You get the same difference but not as — — I mean, the 110 and 20 degree is a less severe impact than the 80 kilometre and 45 degree, but the difference between the two barrier types is still very dramatic.

Mr CORBEN — Okay, I guess what all this points to for us is a need for some fundamental changes in this area of roadside and roadside standards. The sorts of things that I think need to change is the recognition that humans make simple errors and, as Ian has talked about, we have a lot of programs in place to reduce drink-driving and fatigue and increase seat-belt wearing and all of those things, but in the end people will still make mistakes. We need to create a crashworthy system that is based on the biomechanical tolerances of the humans operating the system. I also think that given that roadside hazards are the single biggest trauma category that we have to deal with, we really want to be making fundamental changes in crash and injury risk, not the incremental changes which have characterised the last several decades. We need to make roadsides either clear of actual hazards — and that is not always easy; in fact it is often very difficult to do that in a satisfactory way — or we need to make the roadsides forgiving of the sorts of errors that people typically make. As we have said, we want to make speeds match the inherent safety of the infrastructure so that the outcome is a safe one.

I will move on and talk specifically about a particular area of the problem — that is, the guidelines that until recently were in place for deciding whether or not we needed a barrier in a median on high-speed divided roads. In one of the studies we found as a result of a coroner’s inquiry into this particular problem, and this is one of the findings that I think was particularly important, that the barrier guidelines say that you do not need a barrier to medians that are greater than 15 metres in width, and for anything below 15 metres in width you may need a barrier. When we looked at the characteristics of the crashes we found that something like 18 per cent of the crashes can be addressed by that particular guideline but something like 82 per cent of the crashes are not addressed by the width criterion, which is very much about how to prevent drivers getting through into the opposite carriageway. In fact, over 80 per cent of the trauma that occurs when people leave the road and encroach into medians is not about getting into the opposite carriageway, it is more about striking hazards within the median. So here we have a set of guidelines that do not address 80 per cent of the problem; they only address in a modest way, I suppose, less than 20 per cent of the problem. In other words the problem of using median width to guide whether or not to install barriers is really largely ineffective.

Perhaps to illustrate that I can show you this next diagram. It is representing a divided carriageway with a median 15 metres in width. You can see a couple of different scenarios of vehicles leaving the roadway, in one case at 80 kilometres an hour and 45 degrees, which is the same angle and speed of departure. You see a vehicle crossing on a grass surface will actually reach the opposite carriageway still doing about 70 kilometres an hour, and will cross into the far carriageway of a three-lane carriageway still doing about 60 kilometres an hour. You can see just how far the vehicle travels before it actually comes to a stop. There are the numbers in red. If you look at the 110 kilometres an hour, which is very typical of our rural freeway system, you can see that the vehicle travels before it actually comes to a stop. There are the numbers in red. If you look at the 110 kilometres an hour, which is very typical of our rural freeway system, again taking typical driver reaction times when they leave the roadway, the driver reaches the opposite carriageway at over 90 kilometres an hour. If they are lucky enough to get through the opposite carriageway they are still doing about 80 kilometres an hour and have to travel that distance that you see on the far right.

Whilst they are quite severe speeds and angles they are still typical of what happens in the system out there, and someone who falls asleep driving on a rural freeway is not going to react very quickly anyway by the time they become aware that they have left the road. Reaction times tend to be extended and grass is not a very good surface on which to be braking, and often that will not be a smooth surface and it may throw the vehicle around so that control is lost. So I guess you only need to reach the opposite carriageway at zero kilometres an hour and you end up with a severe outcome anyway. That is why we question quite seriously the use of the clear zone concept. Nine times when they leave the roadway, the driver reaches the opposite carriageway at over 90 kilometres an hour. If 110 kilometres an hour, which is very typical of our rural freeway system, and again taking typical driver reaction times when they leave the roadway, the driver reaches the opposite carriageway at over 90 kilometres an hour. If they are lucky enough to get through the opposite carriageway they are still doing about 80 kilometres an hour and have to travel that distance that you see on the far right.

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Mr LANGDON — From when?

Mr CORBEN — Probably from the 1960s, around that era, I think.

Mr LANGDON — Up to date?

Mr CORBEN — Yes.

Prof. JOHNSTON — Most road design standards go back that far, and when you look into them they do not have much of a scientific basis.

Mr CORBEN — If you think about the 15 per cent of drivers who cannot recover in that distance, even if that is correct, 15 per cent on a low-volume road is not very many people, but on a high-volume road 15 per cent can be quite a large number. That is why, I think, we see the problems we do on our major rural freeways like the Hume and the Western and so on, what we regard as our highest standard roads. But also we need to take account of the presence of roadside hazards as well in perhaps a more explicit way than we currently do. It then goes on to point out that we need to develop programs to install median barriers on all new divided roads where the speed limit will be greater than 70 kilometres an hour. We already know from other crash testing work that vehicles colliding at speeds of above 70 kilometres an hour are not able to protect their occupants, so that is an important limit of the system that above that speed we should be looking at providing adequate separation. We also should be retro-fitting barriers to existing divided roads and we should be doing that in a priority order that reflects the risk which is about speed zone, traffic volumes, the hazards within the system and also using some economic measures such as benefit-to-cost ratio to determine the priorities — not to determine whether or not we should do it, but to determine the order in which we should do that.

Mr LANGDON — Have you done any testing on what happens to motorbikes that hit them?

Mr CORBEN — We have done a little bit of work on that. As I was saying before, I will come to it. I have a slide that deals with the motorcycle barrier issue. Now, about new roads, we ought to be looking at adopting an optimum median width type of concept so that we provide for forgiving barrier types and the use of forgiving barrier systems of the flexible barrier type. We need to provide appropriate distances in front of the barrier so that people have some opportunity to recover without necessarily striking the barrier, though some constrained situations mean that will not always be possible.

We need to provide enough space behind the barrier so that the deformation can occur without impacting other objects and generally that will be possible. This means that trees and other vegetation or a lot of what remains of our roadside can remain. We do not always have to clear our roadsides to get safe conditions when we use appropriately designed barriers. This can have positive effects in terms of the environment. Land acquisition costs can be a lot less because we do not have to go to very wide medians to provide adequate safety and so there are a number of really positive things that come out of all that.

Looking at the rural areas, and particularly looking at undivided roads in rural areas, and at what the Swedes have been doing, I think we can learn a lot from their experience with their use of the flexible barrier systems on their 13 metre roads, which is actually a three-lane cross section. They have been putting in barriers to more or less separate opposing directions — as you can see in the photograph there — providing two lanes in one direction and one lane in the opposite direction, and then every few kilometres alternating so that it becomes two lanes and one in the opposite direction. That gives good overtaking opportunities but provides very good separation between opposing directions. They have been successful in reducing their fatal and serious injuries of those types by more than 90 per cent with this type of treatment. Combined with side barriers as well you all but eliminate the problem of roadside hazards and head-on type collisions with that type of treatment. We have got many roads across the Victorian rural network where that type of measure could be implemented.

Mr EREN — I notice on that picture I cannot see whether there is a wire rope barrier on the other side where the two lanes are.

Dr LOGAN — No, there is not.

Mr EREN — There are a number of trees that look fairly close to the road. Are their policies similar to what we have got here in terms of the distance between the road and where the trees or other objects are?
Mr CORBEN — I think they have been working with much the same standards over the years, but I think they are now shifting towards the sorts of things that we are talking about here. So whether that is the full treatment or not — one of their problems has been about head-on collisions on these sorts of roads because of the three and two-in-one configurations so they have put a lot of emphasis on the head-on problem, whereas our situation is more about people running off the road and into roadside trees and objects.

Mr EREN — What would their speed limit be on that road?

Mr CORBEN — Usually 100 to 110 km/h, I think, on those types of roads.

Prof. JOHNSTON — Ninety. Is it 90 km/h on that one?

Mr CORBEN — I think it is actually higher where they have actually put those sorts of barrier systems in there.

Prof. JOHNSTON — Once you have got that in you can put the limit up from 90 to 100 km/h. On the untreated roads that would be 90 km/h. Once you have done that to it they let it go up to 100 km/h.

Mr CORBEN — I think the idea is to try and get comprehensive treatments over long lengths of highway rather than short sections where crash history says there has been a problem, because if you treat them then sure enough the problem will emerge in the future at another location that has not been treated. What I have said so far has been about the rural environment.

If we turn to the urban setting — in fact I think that probably should read ‘Urban road best practice’ — it is very difficult to use barrier systems in a lot of the urban settings in metropolitan Melbourne and in our provincial cities and towns, just because of driveways and the different environment. What we should be trying to do here is provide much lower urban speed limits in those situations where you have got hazardous roadsides. We already know that people cannot hit those objects at much above 30 to 50 km/h, so bringing the travelling speeds down will mean the impact speeds are down and a much greater chance — many more crashes can happen within the capability of the vehicles to protect their occupants. So that is an important issue for urban settings.

Now the point about motorcyclists, I guess, does present itself a something of an ethical dilemma here. We know that motorcyclists have concerns about flexible barrier systems. We also know that we can reduce serious trauma with these sorts of systems by something around 90 per cent for more than 95 per cent of the road users. While on the other hand we do not fully know the effect that these barrier systems will have on less than 5 per cent of road users — say, the motorcyclists here. When I say it is an unknown effect, we know that as a motorcyclist if you hit those barriers then certainly there is a very high chance of severe injury for you. I do not think we doubt or question that. However, we do not know that wire rope or flexible barriers are worse than concrete barriers, other than in, say, the very narrow-angle type impacts. We do not know that they are any better or worse than the steel guardrail that has been on our road system for decades as well. We certainly do not know whether motorcyclists are better or worse off in the absence of a barrier because barriers are usually installed because there is a hazardous roadside or because there is a possibility of people making their way through into an opposing high-speed carriageway.

Again, all of those things can happen. So it is a bit of a dilemma, but at the moment we have got the possibility of providing major trauma reductions to the vast majority of the road users. We do need to know more about the problem. We have done some limited research in terms of pilot studies. We need to know more and we would like to find ways of stimulating the barrier design industry, the barrier manufacturers, to design better systems into the future. Some work has been done in that area as well and in fact is currently under way. But as we understand things at the moment, for motorcyclists the best option is to avoid the crash in the first place, because once you hit rigid objects as an unprotected road user then the consequences are quite severe. So by way of wrapping things up in a couple of slides I guess the way ahead could be summarised by saying that this whole problem of roadside hazards is a very large and severe problem. It is a longstanding problem.

We do have some strengthening in recent times of the legal accountability for the quality or lack of quality in our roadsides, but we are confident that that in itself will be nowhere near enough to get the sorts of changes that we need. The past approaches have certainly been successful but with modest success and have been just incremental in nature. We need to look to best practice in terms of creating crashworthy systems, and we are confident barrier systems will be a major component of the solution. So to get there, a real change, a real shift in thinking that has gone before in the past decade is needed. And an important ingredient of what is needed to make those changes is
leadership. I think in an area where there are so many organisations involved no-one is doing enough by themselves. We need leadership and coordinated, concerted effort to make a shift in the direction of a fundamental change. We need genuine incentives for organisations responsible for the roadsides to act differently. A fundamental review of the road design practices and the way which we operate the system is a necessary part of it and, of course, we will have to be very innovative in using different types of barrier systems and measures to bring about that crashworthy infrastructure.

Mr LANGDON — With the wire barriers, are there different types — that is, one with 3 wires, or 4 or 5?

Mr CORBEN — I think there are two or three main types, but I do not think there is a great deal of difference in terms of how they actually function. I think they all meet the crash-testing standards for use on the roads.

Mr LANGDON — My memory of motorcyclists’ complaints was about the ones with more wires — I think they called them cheese slicers or something like that. They were more concerned about more wires rather than less — they were still concerned but less concerned.

Mr CORBEN — There is a view that they are cheese cutters. We have researched that issue and we have not found any evidence at all, not only in Australia but elsewhere around the world. But we have tried to gather data about it and there has been nothing that we could turn up to show that that is a problem. It was more so that the posts themselves cause the problems for motorcycle riders — again, because their rigid, narrow nature causes very severe injury. Even though the posts bend over for vehicles, they do not bend over for motorcycle riders.

Mr HARKNESS — It is my understanding that the fatalities caused after a motorcyclist has hit the wire-rope barrier is by being catapulted into a tree or into a pole or something on the other side of it. If they had hit a steel or a concrete barrier they would have suffered a fatality by hitting that object, but when they have hit the wire-rope barrier they have been catapulted over. There are one or two instances where that has happened. But otherwise it stops the motorbike.

Mr CORBEN — I think there have been one or two instances, but I guess there have been so few cases that it is very hard to know what the characteristic outcome is.

Mr HARKNESS — And wire rope barriers in Victoria are just emerging as a trend so you do not have that long case history.

Mr CORBEN — That is right. That finishes what I wanted to talk about on infrastructure.

Prof. JOHNSTON — As we were saying at the beginning, if you want a high-speed road it has to have a safe infrastructure. For some of them where you cannot afford to spend the money on the infrastructure in the short term you have to look at the speed management. We have done some work on that which Max will now report.

The CHAIR — Before we go any further, is now a good time to have lunch?

Prof. JOHNSTON — It is a natural break point.

The CHAIR — It is now five to one. What if we had a bite to eat and then — —

Mr EREN — I will just ask one question in relation to the last part of your submission, where you say we need vigorous leadership across a diverse range of organisations and for a strong sense of organisational ownership that goes beyond the fear of litigation. Can you elaborate on litigation? What is the fear of the litigation?

Prof. JOHNSTON — The nonfeasance issue has opened up local governments in particular to a much greater concern, whereas before they could almost sort of walk away from it, from a design end. There is a danger that if people are really just looking — —

When Alex talked to me about some of the evidence that might be around — the American Transportation Research Board has finished a major review of roadside objects. One of the papers in there talks about the best defence, and so the whole structure for the road authorities is: what is the best way to manage against the risk of being sued? And we are saying that really in a sense that is the wrong way to be approaching this. It has really got to be much more. ‘What is the best way to reduce the probability of serious injury?’ , not ‘What is the best way to
guard against a successful lawsuit?’. You see their advice was to say, ‘Make sure whatever you do you comply with the existing standards and that is your best defence’. We are saying in fact the standards are really inappropiate so the best defence legally might still be the wrong way to be going in terms of saving injury. So that is really the point that is made there. It requires leadership on the part of road authorities, whereas in the past I think they have tended to hide behind human behaviour and say, ‘We build the best roads we can and it is all the drunks and speed hoons and things who run off these good roads we build’. While that is indeed true up to a point, no factory builder would get away with that kind of line, saying, ‘I built a reasonably good factory and there are a few of my workers who come to work after they have a brawl with their wife or after a heavy night on the town and do silly things, and it is not my problem’. It is that kind of thing. You cannot hide behind or blame the behaviour.

Mr CORBEN — Can I just add something? Just to strengthen the point that Ian was making, if road authorities aim to avoid litigation by sticking to the standards then it might mean that they go about creating clear zones, either 3 metre or 9 metre clear zones. Whilst that might help in an incremental way it will not accelerate us towards the best trauma reduction necessarily. There are better solutions than that.

Prof. CAMERON — My part of the presentation continues on from Bruce’s and what we have covered so far have been issues associated with the road infrastructure, how it might be improved and all the institutional issues associated with that. Right here and now we do have the existing rural road infrastructure and the need to do things, and one of the possibilities in this area is to look at rationalising the speed limit.

We have done a study in recent times for the federal government where we looked at three-road systems: freeways, undivided roads and other divided roads. The question they put to us — if you could value the effects on road trauma, on vehicle operation costs, on air pollution emissions and most importantly, travel time in terms of the impacts of speed — was where would the minimum be in terms of total social costs? We aim to assess the value of each of these impacts — we did have good information about how they varied with speed — and then to add up the story to see what the total social cost would be in each of the three environments. Essentially what we found when it came to rural freeways and divided roads was that when you looked at the total social costs — as I said road trauma, travel time, emissions and vehicle operating costs — this suggested that on rural freeways the speed at which the total social costs would be minimised would be 120 km/h for cars and other light commercial vehicles, and 120 km/h for trucks; whereas on the divided rural roads the speed limit would be only 110 km/h for cars and light vehicles, and 90 km/h for trucks.

It should be emphasised that crash costs on rural freeways would certainly increase if the car level was increased. In fact that is the general rule we find in this area, that whenever speed limits are increased the road trauma would go up. How does that come about? You can see here the type of analysis that lay behind what I was just telling you. The light blue information at the top of each of these pillars is the air pollution costs — that is a relatively small part of the story; the crash costs shown in yellow are quite substantial; and you can see that the travel time costs are very significant and so are the vehicle operating costs. I should emphasise that these calculations are done for a standard 100 kilometres of rural freeway with typical volumes of 20 000 vehicle kilometres per day. You can see that while the road trauma costs are very substantial and certainly increasing with speed, the other social costs are also substantial. We did exactly the same analysis for two types of undivided roads, the standard ones that we see commonly throughout Victoria — usually 7 metres wide sealed but without any shoulder sealing — and we did it for shoulder-sealed roads which are typically 8½ metres wide when you include the shoulder seal.

You can see here, especially for the roads that go through curvy terrain or pass through lots of crossroads and towns, that the economic costs when you value them through the same sort of calculations suggest that the current speed limit should not be increased — and for trucks, it should be substantially decreased because the operating costs for trucks rise dramatically with speeds — and on the curved roads through crossroads and towns, both cars and trucks have substantial increases in air pollution emissions and operating costs over speed limits could be reduced.

These are recommendations that flow from this type of social cost calculation and necessarily give full value to the road safety disbenefits of any increases in speed. Our conclusions were that the rural road system has speed limits on the undivided roads which do not match the infrastructure of those roads and do not value road trauma appropriately. Reductions for speed limits for trucks is justified in terms of total social costs and road trauma costs in particular. There could even be a case for speed limit reductions for cars on undivided roads through terrain with lots of curves and many crossroads and towns. As I emphasised earlier any scenario whereby speed limits are increased — and that was perhaps the version you might take for rural freeways — for some vehicles and some
circumstances would involve road trauma increases. The second part of my presentation is looking at enforcement issues. This is accepting that the current rural road infrastructure will take some time to improve and that we need to look at enforcement issues that can address the current situation until those improvements take place.

The CHAIR — Sorry Max, we will go back to the question of speed. Are you saying that the key message here is that there should not be the blanket default 100 km/h across rural roads?

Prof. CAMERON — Yes, indeed, especially on the undivided roads and especially in an environment with lots of curves and crossroads and towns, and especially for trucks.

The CHAIR — Hence we should be going out on more of a road-by-road individual basis determining what speed limits are appropriate for a particular stretch of road, as compared with the blanket 100 km/h?

Prof. CAMERON — Indeed, and there could even be a case for a lower speed limit for trucks right now on those undivided roads.

Mr BISHOP — How would that be assessed?

Prof. CAMERON — In what sense do you mean?

Mr BISHOP — I looked at that graph and I thought, well is that not like a speedometer — you have a point in the middle? How would that be assessed in relation to the changes you are promoting? What you are promoting is that there will be various speed limits around Victoria on particular roads?

Prof. CAMERON — Yes, indeed.

Prof. JOHNSTON — More on classes of road than individual roads. I think we would be saying that there are three or four major classes of road, and if you recall we showed A, B, C and M roads. I think we are saying that certainly the C and B should not have the 100 km/h; that is basically what we are saying because their level of safety in the infrastructure is just not up to it.

Prof. CAMERON — These two classes of road we are looking at here correspond approximately to the C and B roads.

Mr BISHOP — The top one is the straight 7-metre sealed road.

Prof. CAMERON — That could be a C road, perhaps some B roads. The shoulder seal could be B roads. Secondly, those roads can be in straight rural environments but they can also be going through hills and lots of small towns requiring stopping and slowing, and the analysis shows that when you have those curved environments, vehicles cannot travel at their desired cruise speeds; they need to slow down substantially for each individual curve and in the rural towns lower speeds are applicable there as well.

Mr BISHOP — So that assessment is carried out purely on measurement and the type of terrain?

Prof. CAMERON — Each of these functions you are seeing here start from the point of view of a certain crash rate on the type of rural road we are talking about and as the quality of the road deteriorates, from M down to A, B and C, the crash rates increase per vehicle kilometre. Even though they have relatively low amounts of traffic, they still have substantial contributions to crashes.

Mr BISHOP — So the assessment is on crash rates?

Prof. CAMERON — Yes, that is only the yellow part of these curves though.

Prof. JOHNSTON — This is an economical rationalist approach — this is saying we are going to put a dollar value on everything. If you take an economic rationalist approach and you put a dollar value on a life, a dollar value on exhaust emissions and you put a dollar value on travel time and what you are looking for is the lowest dollar cost to the community, if you take just that approach, it actually looks like you could increase the speed limits. Now why is that? Just look at the plum-coloured bit, what drives the benefit cost ratio? It is travel time. So if hundreds of thousands of motorists are saving 2 minutes on the trip from Melbourne to Ballarat, that adds up to a lot of money. The question of whether the tens of thousands of us could put our 2 minutes together and

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do something useful with it is another whole debate. But I think what we are trying to do is highlight that often these debates do get involved in economic rationalist analysis, so it is all dominated by that plum bit because you have so many people out there even saving relatively small amounts of time which is where the whole speed debate has got itself hooked up.

Mr BISHOP — I appreciate that, I think that is quite constructive. I think the issue was how the judgment occurred and if you look at that, it is there.

Prof. JOHNSTON — In this particular study we were commissioned by the federal government because the Deputy Prime Minister was floating an idea that national highways should go to 130 kilometres per hour and we were asked to do an analysis on a cost benefit basis of what the impact might be. That is the answer, you go out to 130 and it is not a lot different in terms of overall cost or anything else but the yellow bits are a lot bigger.

Prof. CAMERON — While the road trauma here has been valued relatively highly, there is a view that it should be valued even much more highly.

Mr BISHOP — I was rather interested — the safety assessment is purely off that yellow section?

Prof. JOHNSTON — Yes, and that is why we are saying with the low standard infrastructure roads, we would be arguing for a decrease in speed limits in order to bring the trauma down. Now at the same time that is acknowledging that there will be a time cost penalty and then it becomes a judgment for society as to whether it wants to make that trade-off.

Mr BISHOP — But in that assessment, which I find quite interesting, there will be more than four classes of roads?

Prof. JOHNSTON — Yes, in theory, and the optimum way to do it would be to speed zone according to the conditions. One of the difficulties with speed zoning is while you can do it logically from a pure scientific point of view, people get very confused as to what section of road they are on at a particular point in time and all of that so again there is another kind of balance.

Mr CORBEN — Can I just have a quick word about maybe where information like that might go? We have in Victoria a speed limits advisory group that sets policy for the state about speed-zone practices. It could well be that the findings of Max’s research could be referred to that group to think about how they might revise our speed zoning policy for the whole state to try to take account of the different classes and the trauma impacts and so on.

Prof. CAMERON — I guess the key point that we wanted to make was that on these lower-quality roads speed limit reductions may well be justified in terms of total social costs. Now that is something that is not even being talked about at the moment. Changing now to enforcement issues: the major areas that we have a good understanding of are random breath testing and a whole range of speed enforcement issues but I should emphasise that most of this knowledge is gleaned in urban areas, although we do have substantial knowledge in rural areas as well.

Here is a booze bus shown on the overhead — I guess you have seen plenty of those. The effects of random breath testing has been heavily researched in urban areas. Up to 1990 essentially only car-based random breath testing was used. Studies have shown that certainly to be effective, provided it gets above a certain threshold of activity. Then the 13 new booze buses were introduced from 1990. They had the characteristic of being highly visible but also a high capacity to test passing motorists. It was hard for the driver to be confident that he would not be tested as he went past, unlike with cars. Earlier it was mentioned that the mass media publicity support, mainly placed by the Transport Accident Commission, really enhances enforcement of this type. We have certainly shown that the booze buses are effective in Melbourne.

However, in 1993–94 the TAC and the police cooperated to fund and send the booze buses to rural areas, mainly on weekend nights, Thursday to Sunday, and of course there were existing booze buses and cars operating in those areas. They encouraged the police not to reduce the testing in Melbourne. This is what we found which came as a considerable surprise to people at the time. We focused on those crashes during the high alcohol hours, those times of the week that are most commonly involved during driving, and in this analysis we can see the effects on both the major and minor roads when a booze bus and cars arrive at a rural region. When the cars were operating by
themselves, there were substantial crash reductions; when the buses were operating by themselves there were substantial crash reductions; when they were operating together we actually got crash increases. This raised considerable questions about how that came about.

When we did some further analysis of the minor roads we found that this problem was particularly the case when the cars and buses were operating together and the TAC publicity about drink-driving was at a high-level intensity. Basically what seemed to be happening was that combination was particularly bad in terms of an effect on drink drivers. The explanation? We think that there was a possible reaction of the country drinkers when faced with this intensive random breath testing and intensive publicity. Some of them do not change their driving behaviour after drinking, they certainly do not change their drinking behaviour but they might go home in a strange way. When we got into this a bit more closely, we surveyed the country hotel drinkers and found that they would go home a different way to avoid the booze bus that they were very conscious was around. It seems that the booze buses and the intense publicity had essentially forced these drink-drivers onto their back roads home which they were unfamiliar with and relatively unsafe, and that is what lead to the increase in serious crashes on these minor roads. The implications of the findings — police have taken this very much on board — are there is a need to schedule the operations on minor roads as well as major roads, to have satellite cars stationed on the back roads with the booze buses, and perhaps confining the patrol cars to the hotels and clubs. In recent years there has been a general policy to increase the amount of car-based random breath testing and to use the booze buses only in major urban areas.

Mobile speed cameras — you have seen this form of operation, no doubt. In recent times they have done away with the flash unit in situations where the ambient light allows that to be done. There are some unique characteristics of the Victorian speed camera program that you do not see elsewhere. First of all it is aimed at reducing speeding everywhere at all times. It is not thought of as being an accident black-spot treatment. The operations are relatively covert and have become even more covert. They use many different locations. They have a relatively large number of cameras. Perhaps it is not understood, though, that there is a very large back office able to process the number of speeding infringements that the cameras can detect so there is no constraint on camera use. Lastly the mechanism of specific deterrents is thought to be the key way in which the program operates, unlike random breath testing; it essentially catches and punishes large numbers of speeding drivers and changes their behaviour. I can show you some research in Melbourne where Victoria Police increased the numbers of camera hours to 50 per cent additional hours or 100 per cent additional hours during certain months of 1999. Essentially what we found when the number of speeding tickets detected by the police from the previous month was increased, the crashes were reduced. In this program the police actually reduced their activities in some police districts, and we found that the crashes increased. The nature of this curve is very much one of diminishing returns. It suggests that you cannot go on increasing the camera hours forever and that eventually you are going to reach a point where there is no additional effect. That was the information that Ian was presenting earlier. This one is perhaps complementary to the previous one; it shows that the severity of those casualty crashes also falls when the speeding tickets in the previous month have been increased by about 60 per cent above those given under normal conditions; and the risk of the crashes becoming fatal was reduced by 41 per cent. Conversely, when the camera hours were reduced the risk of the crashes being fatal increased, suggesting a very strong and direct relationship between the cameras and the severity of these crashes.

Mr BISHOP — Can I ask what the time was of that research program?

Prof. CAMERON — It was done in 1999 and we analysed data over the full five years from 1996 to 2000. All of these results apply to the period before the major increase in camera hours that took place in 2000 and were instrumental in leading to that policy decision.

Regarding mobile speed cameras, as I have emphasised already, we have certainly showed that the cameras are effective in urban areas, and when they were first introduced there was some evidence of an effect when they were used on rural highways; this recent study was in Melbourne only. It really raises questions about the use of the cameras in rural areas. We know that these covert operations are effective on streets and roads where parked cars are not unusual; on a rural highway that is another question. So it really does raise the question whether the mobile speed cameras have usefulness on rural highways.

In recent times the government has introduced fixed speed cameras; they are most suitable for traffic freeways and highways where it is not feasible to park a mobile speed camera close to the traffic lanes. The cost of these things justifies a fixed installation. However, though the cameras are operated somewhat semi-covertly you could say, we
believe their locations will quickly become known, if they are not already, so their use more generally is unlikely to have a general effect on speed unlike the mobile speed cameras in urban areas. Evidence that supports this comes from a number of studies in the United Kingdom. Their cameras are very conspicuous and well-known in terms of their location. No doubt you have read the media attention to those sorts of issues. But at the camera sites, they do achieve reductions in speed, especially with the serious speedsters; they do achieve very substantial reductions in deaths and serious injuries and it seems that the fixed cameras in the UK have similar effects in both rural and urban areas. They may well have an effect across a broad region as well, but that may relate to the density of operations in the UK. Whether we could achieve a similar density in Victoria, I am not too sure.

In terms of use of cameras on major highways, there is a new technology in the wind that the government is looking at introducing and this is the ‘point to point’ camera that measures average speed of each vehicle by time over distance. All the other systems you know about measure speeds and individual location of spot speed. These point to point cameras are most suitable for highly trafficked roads where there are limited opportunities to join or depart from the roads, because essentially you have to measure the vehicle at two different points and calculate the time over the distance between those two. These distances that have been talked about could be 50 to 100 kilometres apart, perhaps. While there are plans for the Hume Highway, perhaps their operation would have to be confined to freeway-type environments; they are also relatively expensive. However, they have been shown to be effective; there are not too many evaluation studies, except one very good one that was done in Nottingham. One can see that their cameras were relatively close, only half a kilometre apart, but they did achieve a reduction in average speed and they did achieve a substantial reduction in crashes; and it was thought that they are superior to the conspicuous fixed cameras in the UK because they avoid that sudden braking by drivers just before they approach the camera site and then rapid acceleration thereafter.

The CHAIR — Max, am I right that with the fixed cameras in the UK, and also in New South Wales where they are actually overt, are they not used in a different manner than they are used in a black spot area?

Prof. CAMERON — Yes, they are used in a black spot area and — —

The CHAIR — So they are actually used to slow vehicles down in that particular area?

Prof. CAMERON — Yes, and they have very strong effects in that particular area, but if you are looking for a general effect over a whole rural road environment, then I think there are question marks.

The CHAIR — But for a specific black spot operation they are effective?

Prof. CAMERON — They are good, no question about that. However, one technology — —

The CHAIR — So what you are saying is that our fixed cameras in Victoria — for example, out on the Western Ring Road — are not used for black spot treatment. They are more used for general speeding and therefore they are not as effective.

Prof. CAMERON — No, I am not saying that. In fact the location of the fixed cameras on the Western Ring Road — I do not have a good guide on what the criteria were for that, it is a highly trafficked road and it could be justified just on the sheer volume of the traffic — their location on the overhead gantries might just relate to the fact that the gantry was already there.

I turn to moving mode radar. This is actually important for our typical rural road environments. Basically it measures speed of other vehicles from a moving patrol car. Usually the other vehicles are approaching, but it can measure vehicles travelling in the same direction. It is most suitable for two-lane undivided rural roads because the patrol car has to do a U-turn and apprehend the vehicle it detects speeding. In Victoria the patrol cars can be marked or unmarked, or a mixture of both in a certain road environment, and it is worth emphasising that the TAC launched a very specific television ad about this technology back in 1996 which was about the time we did a careful study. You can see here how the patrol car with the number on the roof has the radar beam that locks on to the approaching car, quickly assesses its speed and then there are opportunities for the patrol car to do a U-turn and apprehend the vehicle. This probably does not give a very good impression of the typical distances, but in fact the radar gun can measure the speed of the approaching vehicle up to a kilometre away.

We found that the effect of this moving mode radar, otherwise known as mobile radar, is very strong for up to four days after the operation has taken place, but especially when there was synergy with the TAC publicity — in other
words, the effects seemed to be even greater when the specific publicity about the mobile radar had recently been displayed and awareness was still very high. There was a 28 per cent reduction in casualty crashes in the police districts where these operations took place, during that one to four days after the enforcement was present. Subsequent analysis also found that when the cars were unmarked or there was a mixture of marked and unmarked cars that was the most effective way to operate, whereas the marked cars had no significant effect. In summary it is a very effective tool for reducing crashes on undivided rural highways over long lengths. The supporting publicity is also important and magnifies the effect. As I said before, the covert and mixed operations have the strongest effects.

Turning now to rural enforcement domains, the rural road system is much greater than Melbourne and even the provincial cities we might be talking about, hence there is a need for enforcement operations which deter the key unsafe behaviours over a broad area. Now, it is true that visible enforcement operations can target particular towns and highways with high crash rates. The use of car-based random breath testing can be effective in these sorts of black spot or black route-type focuses as can fixed speed cameras and point-to-point speed cameras. But if you are looking for general effects this is best achieved by some unpredictable form of speed enforcement, and the moving mode radar is a good example of that. Mobile speed cameras, as I have said, have certainly been shown to be effective in major urban areas, but they still have a key role near and in country towns.

Last but not least — something we have not done much of here in Victoria but there has been good experience in Queensland — randomly scheduling the enforcement operations both in time and space can lead to thin distributions of enforcement that can be very effective because it seems to persuade the general population that the enforcement could be there anywhere at any time. Finally, the mass media publicity can magnify these general effects of enforcement, especially moving mode radar, but I guess I do not need to caution you that used in conjunction with the booze buses, random breath-testing needs to be done with extreme care. I can stop there, I think.

Mr BISHOP — Max, your last sentence was that it had to be done with extreme care.

Prof. CAMERON — Yes.

Mr BISHOP — More explanation is required.

Prof. CAMERON — As we saw earlier, the mass media publicity in association with the booze buses in small rural communities can lead to undesirable behaviour changes which at the time were quite unexpected but with hindsight we can see quite good explanations for it.

The CHAIR — I keep going back about six slides but do not bother showing them again. You talked about random breath-testing and you probably have the key dates of the beginning of when we bought new booze buses and all the rest of it, but how significant was the introduction of .00 BAC for P-platers?

Prof. CAMERON — That was introduced in three stages. Initially it applied only to first-year drivers, then to the first and second-year drivers and then to the first three-year drivers. The studies that I have seen suggested that the first step did not have the desired effects. It was very difficult to detect crash reductions, but the second and third steps did. The explanation for that seems to revolve around the idea that drivers really felt that they were entering a longer-term commitment and had to look at changing their behaviour in a very concrete way.

The CHAIR — So it has been successful for P-plate drivers?

Prof. CAMERON — Yes, I think there would be little doubt about that.

The CHAIR — Would there be an argument for — you would want to be a great politician — .00 for all drivers?

Prof. CAMERON — I guess it revolves around whether there is a different risk relationship for more experienced drivers compared with younger inexperienced drivers. There is research that shows that younger drivers tend to have a steeper risk relationship for a given BAC level than older drivers do, but all drivers have increased crash risk associated with blood alcohol levels, so that if you were to look at a lower limit for all drivers I guess there would be a case for that. As you well know we also impose that lower limit also on drivers of our public transport vehicles and they are typically much older than your typical young inexperienced driver.
The CHAIR — It is interesting that we are prepared to put .00 on bus drivers because they might carry 30 to 40 public passengers, but I am not too sure of the difference between a bus driver and a driver of a family car who is carrying his three or four kids around. I think .00 also applies to taxi drivers, doesn’t it?

Prof. JOHNSTON — It does, yes.

Prof. CAMERON — If the argument applies only to the relative risk curves then there is the same justification for all drivers as there is for public transport drivers.

Mr BISHOP — In relation to the speed enforcement and some of the controversy that has raged about differentials, are you supporters of the testing arrangement where on a road, or wherever it might be, there is a board up so you can check your speed, and what is your view on the success of that?

Prof. CAMERON — I do not have a view on it. As far as I know our centre has done no research on the subject.

Mr BISHOP — Why not?

Prof. CAMERON — To put it crudely, no-one has funded us to do it just yet.

Mr BISHOP — Good answer.

Prof. CAMERON — As a self-funding institute that is an important question.

Prof. JOHNSTON — I think there are very few of those signs around. I think there are some issues at the moment about their level of accuracy and the way they are interpreted, but as a general principle it is not a bad idea.

Mr BISHOP — The road safety councils we have interviewed have been reasonably keen on them, I think, and they have used them in built-up areas to get the message across that this is what speed is and it seemed to be accepted.

Prof. JOHNSTON — In addition to enforcement there is some interesting technology around where you can put sensors in the road. For example, if you have a substandard curve on an otherwise reasonably high standard road, you often get a crash history there, and if you cannot straighten the road out at that point for whatever reason you can put sensors in the road which detect each individual speed and then on a variable message sign advise that individual driver to slow down approaching that curve. There have been some trials coming out of the United Kingdom which work. You see them around the local areas when the 50 kilometres an hour restriction was introduced, a little smiley face would come up if you were around the 50 mark or tell you to slow down. It is also used successfully in road work sites so that those interactions between where the road senses what the vehicles are doing and then warns the driver. That sort of technology is really quite useful and for some of the trouble spots can be quite an enhancement. I think there is probably more potential in that than the other one which is much more the check your speedo’s accuracy type, for which I think there is less of a case.

The CHAIR — Max, when we travelled around Victoria and spoke to various councils, some of the councils proactively supported the speed limits on gravel roads. I am interested in your thoughts with regard to a blanket 70 or 80 kilometres on gravel road as compared to the default of 100 kilometres at the present time?

Prof. CAMERON — In the analysis I showed you earlier regarding speed limits, while the roads considered there were all sealed roads, it could be done in exactly the same way for the gravel roads. They start with the typically much higher casualty crash rate per vehicle kilometre than sealed road and in response to that I guess that is why those roads do not have anything like the traffic volume. But of the vehicles that do use those roads, I would guess, without having done the analysis, that even lower speed limits than what we did for the single-lane undivided roads would be appropriate. At the moment my understanding is they would qualify for the current default 100 kilometre an hour speed limit.

Mr BISHOP — When I asked the question about why you do not do that and you properly answered that you do not have funding for it, it brings forth the view that there is a lot of research and a lot of views done independently by a lot of organisations around Australia and probably within Victoria. I worry that in fact that information is not collectively gathered for the betterment of safety on roads. Is there a better way in relation to managing that in the governmental system, for example, in Victoria where road safety is involved in the Minister
for Transport’s area but also linked up to various other areas. Have you had any experience where there are any other structures around Australia that might be different than what we have here?

Prof. CAMERON — In most Australian states the safety responsibility sits within the transport sector. Here in Victoria I think we have a different model whereby other agencies with clear responsibilities like the Transport Accident Commission, the Department of Justice and VicRoads, work in a coordinated sense through a ministerial council, I think. That is somewhat unique but Western Australia is a different situation where, first of all, there is such a coordinating council, but secondly the road safety policy function sits within the Department of Premier and Cabinet whereas it previously was in the Department of Transport.

Mr BISHOP — How long has that been there and is there any indication that it draws departments together more readily, or any results?

Prof. CAMERON — It has been within the Department of Premier and Cabinet for about three or four years. It seems to make some sense in that it avoided the conflict of interests where it sat only within the transport department. Whether it has been successful, I am not in a position to say.

Prof. JOHNSTON — There are about as many different institutional models as there are institutions. What really matters at the end of the day is whether there is a whole-of-government commitment to changing the system, and if you have that, then the precise institutional structure is less important. I think the Victorian one has been especially successful because of the partnership that is brought about between the police and the educators, and it has been unique, mainly due to a lot of the research that Max has aired, which has shown that the synergistic effects of getting the public education and the enforcement really well coordinated and pulling in the same direction. Victoria is also quite unique in that the TAC as the insurer has been prepared to invest in prevention to improve its own bottom line. That aspect has been really quite unique amongst compensation insurers around the world. We would never have got intense random breath testing in Victoria because the police did not have the capital for the booze buses or the social pull, if you like, that was provided by the enforcement. So all of that has been much more important than the precise structure.

Prof. CAMERON — If I could add to that: Victoria is a unique model in that the injury compensation insurer is a monopoly government body and is the direct beneficiary of investment by other government departments. It in turn also invests in assisting the police and other agencies that are doing the work. That is almost without precedent except in British Columbia, Canada, where the beneficiary is within government. I guess that leads to the argument for a central government body to somehow provide that whole-of-government link. Here in Victoria perhaps we do not need it because of the TAC’s monopoly situation.

Prof. JOHNSTON — If I could try to bring it together in a few minutes, I am very conscious of the fact that you did not invite us here to read you a lecture on the latest state of knowledge in all these bits and pieces but rather to try to give you an independent view of where you might go and what you might recommend. I will throw caution to the wind and have a go at that.

Part of it is on this slide, but one of the absolute key things that has got to happen is that there needs to be a major overhaul of the relevant standards for road infrastructure safety. I think we have said enough during the presentation on the issue of clear zone — the 9-metre clear zone — and really that just goes back in time with no real scientific basis; the median barrier standards and the whole speed limit setting process where we seem to assume that 100 kilometres an hour is the base limit and we only work upwards from there as we get better roads. I think all of the evidence that we have got is suggesting that is starting at too high a point for those low standard roads. That is not being critical of VicRoads. VicRoads has got the same standards as everybody else. It is really being critical of the entire standard setting process internationally and nationally within the road and traffic engineering profession, if we are going to make progress. What is really interesting is that the road toll in Victoria has been brought down, and down and down because we have been very successful in changing people’s behaviour. Now we are getting to the point where the next big gain is going to come from changing the system — getting a safer system than we have had in the past. That is the next big quantum leap. It is really interesting that — as someone asked the question before about who is in the system — the more you bring the road toll down the more what is left is a rump of a lot of antisocial behaviour. Who are the 3 per cent who do not wear their seatbelts that account for 25 per cent of the deaths?
There are a lot of alcoholics in there. There are a lot of drug-takers in there. You are getting a subculture. And the question is how do you get rid of that subculture. Having a safe system in a sense protects them from themselves, but it protects us from them as well. So that standards review is the first thing that really needs to happen. We need to really have a go at that. The second, which picks up on the point that Mr Bishop was just making, is about creating an institutional dialogue between the road asset managers, whether at the local level or state level or federal level for that matter, and the people who are responsible for environmental protection — so the Department of Sustainability and Environment — and the utility authorities who are putting the poles and things around the place. Because at the end of the day it is all going to be a balance, a balance between what you are prepared to pay — —

We saw that in the cost-benefit stuff. Time dominates the whole speed analysis, and the same is true with roadside hazard management. If you want to get the objects down — and a lot of them are poles in the urban area — what does that imply for electricity costs? And how does all of that get managed? But I think if one were able to get those institutions together in the opposite of a blame-and-shame approach — rather, ‘How can we can collectively alter what we do to get a win–win for everybody?’ — that is the kind of leadership we were talking about before, as well, which I think you can make a substantial contribution to. That institutional dialogue I think is of two kinds. One is we must make sure that we do not add to the stock of roadside hazards. We have a set of standards — for example, I think the new road management bill gives VicRoads some powers over where utility authorities can put their poles. That manages it in the future. That stops the thing. So it is making sure that we do not create unsafe roadsides in the future as we redevelop the system. But the other is how do we manage the existing roadside hazard problem. I do not think there is any doubt that if we focus on the high-volume, high-speed roads, which is where a large proportion of the fatality and serious casualty crashes are happening, and have a major program of roadside hazard management, it is almost certainly going to mean a lot of guardrail. Whether it is flexible or not is going to come out of the motorcycle debate and all the rest of it, even though we know it to be the best type of barrier.

So a program of managing that roadside can be done. It is expensive; there is absolutely no doubt about that. The question is: Where do you start? How do you prioritise it, and how much can you do in the three to five years? And then for the urban area I think it is so much more difficult, even with a 3-metre clear zone. You are just not going to get that in most places. We know that the best way of handling that is to keep the travel speeds in the urban area down as low as possible. That is where the intense enforcement process has probably got as much going for it as anything else. That is an attempt just to capture, if you like, the messages we have been trying to give you. I do not know whether my colleagues want to add anything to that.

Mr CORBEN — Just to perhaps strengthen one point a little bit further, I guess it is as we were saying earlier: so many of the solutions we have known about for such a long time, so a lot of it is not new, but I think it is a matter of finding ways of getting natural and effective incentives operating within the system to make all those things happen. I think that probably what is missing at the moment is natural incentives to do it.

The CHAIR — Thank you, Ian. I say personally, and I am sure on behalf of the committee, we found it very interesting. We do appreciate your time and input into the committee.

Witnesses withdrew.
ROAD SAFETY COMMITTEE

Inquiry into country road toll

Inquiry into Crashes Involving Roadside Objects

Melbourne – 10 May 2004

Members

Mr B. W. Bishop       Mr T. W. Mulder
Mr J. H. Eren          Mr E. G. Stoney
Mr A. R. Harkness      Mr I. D. Trezise
Mr C. A. C. Langdon

Chair: Mr I. D. Trezise
Deputy Chair: Mr E. G. Stoney

Staff

Executive Officer: Ms A. Douglas
Research Officer: Mr G. Both and Mr P. Nelson

Witnesses

Mr P. Makeham, general manager, safety and environment; and
Ms D. Soo, policy analyst, safety and environment, National Transport Commission.

Necessary corrections to be notified to executive officer of committee
The CHAIR — We open our next session and welcome the National Transport Commission, represented by Peter Makeham, general manager, safety and environment and Ms Donna Soo, policy analyst, safety and environment. We do appreciate your time and input into our inquiry. As you are aware, this is the Victorian parliamentary Road Safety Committee and we are running two concurrent inquiries at the present time. The first is into the Victorian country road toll and the second, obviously related, to crashes involving roadside objects. We are today operating under parliamentary privilege, so what you say cannot be held against you legally in the future. We are also taking transcript and will provide a copy to the commission in due course. Again, welcome. We do value your input, and I will hand it over to you.

Mr MAKEHAM — Could I just say at the outset how much the commission values the opportunity to make a presentation to you today. I have prepared a submission which I have provided to the secretariat as well as a couple other documents. What I propose to do is walk you through the executive summary, which summarises the key points I want to make.

We are a national commission which was set up initially as the National Road Transport Commission under the 1992 reforms of commonwealth and state affairs to advise governments — commonwealth, state and territory — on transport regulation. It was re-formed as the National Transport Commission in January this year to encompass, as well as road transport, rail and multimodal transport. That is it in a very brief explanation, and I have a little bit more in the submission about where the commission comes from. We have six commissioners and they report to the Australian Transport Council, which is the council of commonwealth, state and territory transport ministers. That is the background to the commission.

What I am going to talk to you about today is that we are able to contribute to a general discussion on road safety. We do quite a lot of work on road safety issues and one of our principal reasons in our charter is to improve the safety of transport. Safety is very important to us. We do not have a role in terms of infrastructure, a vision, that is not in our charter, so I am not going to comment on that, but some of our work does have a bearing on that because the road conditions have an important role in terms of crashes. I would certainly comment on that.

There is a range of work that we have done that I believe has some bearing on this issue. The international benchmarking of heavy vehicle safety performances — and I will go through this in a little more detail, but I will just give a list of them: a national heavy vehicle safety strategy and action plan; work on fatigue; compliance and enforcement laws; and a summit commenting about speeding and heavy trucks. Let me just talk a little bit about each of those.

The first one I want to talk about is the international benchmarking report. It is a fairly interesting report, and I have provided a hard copy to the committee. This was commissioned by the National Road Transport Commission and was carried out by Professor Peter Vulcan, Dr Narelle Howarth and Dr Peter Sweatman. It was reported in 2002. What that had sought to do was compare Australia’s heavy vehicle performance with a range of OECD countries, countries that we normally compare ourselves to, like the USA, Britain, Canada, Germany, Sweden, France and New Zealand. A very detailed analysis was made of data.

In terms of the heavy vehicle fatality rate per kilometre, we did not do as well as we thought we should. We are 47 per cent higher than the USA; 39 per cent higher than the UK; we are about the same as Germany and Canada; 20 per cent lower than Sweden; 45 per cent lower than France; and 55 per cent lower than New Zealand. So we are in the comfortable middle group of countries, and that is on a kilometre basis, so from a freight point of view that is fairly comparable information. The chart that I have circulated summarises that. It is actually covered in a bit more detail in the submission and in considerable detail in the report that I have given to you. Having said that, the report also looked at the reasons we did not do as well as those countries, and the interesting finding was that the road environment was probably the biggest contributor. If we had a road system comparable to the USA and Britain we could do as well as they — that is, we could get something like a 40 to 45 per cent improvement.

There are a range of other things — I do not want to focus just on roads. It looked at road standards and it looked at a whole of range of issues like speed and fatigue. A whole range of things are referred to in the report, but given that your inquiry is essentially oriented around the road environment, I thought I should highlight that finding, that that very significant deficit in terms of our performance is related to the road environment and what goes with that. There is a whole range other things where our laws are comparable, but in terms of our road environment we are behind the game, compared with those best countries.
The CHAIR — Can I ask — I know this is a broad question — what difference would I see between a USA road and an Australian road?

Mr MAKEHAM — The main thing is that a much higher proportion of travel is done on limited access dual carriageway, freeway or near-freeway standards. They have quite a magnificent highway system, and even their state system is by and large dual carriageway and limited access. So that would be the single, most important difference, I think. And also, in terms of the single carriageway, they often have better geometry than we do.

Mr HARKNESS — And there is a 55 mile-an-hour speed limit, which is much less than the 110 km/h on probably comparable roads?

Mr MAKEHAM — Yes, that is correct. That is all covered in the report, the issues of day/night-time driving is an issue; truck occupant protection, front and rear underarm protection — they are all issues that contribute to that difference in the road safety performance. But probably the biggest one was the road environment.

Again I could go into much more detail but it is covered in the report. I think it was worth emphasising — and there is some quite clever analysis in the benchmarking report — that the dominant factor is really the road environment. So based on that analysis if we had a road system comparable to the United Kingdom and Germany we could equal their performance. That is obviously a big investment, but equally what we are saying is there are a whole range of lower cost roads and roadside improvements that could have benefits to get there much more quickly. The sorts of things that have been done by VicRoads in north-eastern Victoria, or are starting to be done, would have a very big impact in terms of roadside treatment, run-off, edge sealing, because a large proportion of crashes are related to loss of control, fatigue and so forth.

The study also points to the speed limits and speed management, as Mr Harkness pointed out, and that was all covered. For us, that was an important benchmark because we established where we stand with other countries. Then we said, ‘How do we go about trying to improve that?’ We embarked on the process called the national heavy vehicle strategy — I have given you a copy — and that was developed with the four states, VicRoads and others, and the heavy vehicle industry, and has been endorsed now by the ministers as a benchmark which sets about improving the road toll by 40 per cent by 2010. It looks at a whole range of things like seatbelt use, safer roads, more effective speed management, driver impairment, safer vehicles, industry issues, enforcement, research, and education. Accompanying that is an action plan for 2003–05, which will probably be revised in the next year or so to bring it up to the next range of initiatives. In those, there is a whole range of initiatives to improve heavy vehicle safety, including a chapter on improvements to the road environment which would traverse a number of issues I believe you would be interested in during your current inquiry.

The process of developing that strategy was a useful one because it is a collective thing and one with industry involved. That in a sense is one of its strengths, having the states and industry get some ownership of it, and we have a process for revising, reporting and improving. We have an obligation as a commission to give a report to the Australian Transport Council on progress and we are probably starting work on our first report now. So it is still in the scheme of things, a relatively recent process.

The other issue I wanted to talk about is some of the things we are doing. We are doing work in terms of fatigue. We have a major review of fatigue and there has just been a ministerial vote on a set of proposals to improve the conditions of heavy vehicles in terms of fatigue and that has been voted upon as a policy and some of my colleagues are now working on turning that into a draft model law, which is the way we work.

Mr HARKNESS — Just on fatigue, we have heard from several people regarding the provision and the quality of rest areas, and that in some country towns some types of vehicles such as cattle trucks cannot stop in the towns themselves, so are reliant to rest in rest areas on the major roads. I wonder if you could comment about this issue and whether you have got any ideas or initiatives?

Mr MAKEHAM — I think rest areas are an important issue with us and I think they have got a very good point. If you look at the Victorian system on the Hume Highway, there are very good rest areas and they would set the standard nationally, but I think overall our roads do not have adequate rest areas for a heavy vehicle to stop and the driver to have a reasonably peaceful rest for a period. The whole philosophy of reform that we have been working on is built around the working day which includes not just the driving task but the loading and unloading task which should be included in it, and adequate rest, fatigue and adequate breaks which have been redefined and
brought the numbers of hours down. Things like that have been voted upon and rest areas underpin that because if you do not have anywhere convenient and safe for the driver to stop — safe in terms of the vehicle not rolling away, and reasonably off the road — I do not think they have to be McDonalds or anything like that but a good hard standing which is reasonably separated from the road where they can stop a vehicle safely. We are underdone as a nation on that and I think there is a clear issue there. In terms of initiatives, having set the policy in terms of fatigue, the things we are looking at now are drivers diaries, and rest areas is one of the following projects we are doing so it is important and we are now working on it and it is something you should also consider.

The CHAIR — Across the state are the rest areas pretty much the same or does one state stand out from the others with regard to provision of rest areas.

Mr MAKEHAM — I think Victoria in terms of the Hume Highway and the Western Highway would stand out as the model.

The CHAIR — Across the nation?

Mr MAKEHAM — Yes, I think so. They are good facilities, off the road, good entries and sufficiently away from the road with screen trees and that sort of stuff. There are good ones on the major routes in New South Wales, but once you get on some of those big arterial routes — which are probably less concern to you as a Victorian Parliament but of concern to us — the Newell Highway and so on, rest areas are virtually non-existent and it is very hard for drivers to stop. I would have thought the frequency should be at least an hour’s driving between them and desirably half an hour, but an hour driving or intervals of that would be the model in my view.

Mr LANGDON — How do we compare overseas to say the United States of America?

Mr MAKEHAM — The United States of America, as I said earlier, has a very good highway system with good rest areas to which the Victorian ones on the Hume Highway between here and Albury would be comparable. Because of their higher traffic, particular on the intrastate highways, they probably have more of the facilities where you can even buy food and drink. They would have more of those, but I do not think that is essential for a rest area; what the driver is looking for is somewhere safe to park where they can get an hour or 2 hours sleep and I think the Victorian ones compare quite well on that.

The other things we are looking at briefly are compliance and enforcement. There is a whole range of new model law compliance and enforcement, which is seeking to institute what is known as a chain of responsibility. In other words, it is not just the driver’s responsibility to obey the law — of course it is — but it is also the people who consign the freight and sometimes people further up and down the food chain have a responsibility in terms of road safety behaviour. Where somebody can be shown to be requiring a driver or operator to break the law to meet contractual requirements they are also subject to the weight of the law. So the chain of responsibility is also an important innovation in terms of the freight system and interestingly enough it is quite well supported by the heavy vehicle industry.

The other thing to mention to you is that we are doing work on intelligent transport systems. That sounds a long way away, but we have a team in our office, in conjunction with AusRoads, which is the organisation which looks after road infrastructure standards, and they are working on a number of projects which are related to using intelligence systems to position the vehicle, weigh the vehicle in some cases and to provide information on where the vehicle is, what it is carrying, what speed it is doing and a whole range of things like this. Now it sounds a long way off, but in fact it is not very far away at all. It is currently being used by the grain industry and things like that with great benefit not only to the safety of the operations but also to the industry itself in getting better productivity.

Mr STONEY — Is there a danger in that the truck companies will know perhaps where their trucks are and might set schedules not taking into account that the driver is tired? If it knows the truck has stopped it might ring up and say it has to keep going — the driver may only have had 4 hours sleep and be tired, but the company wants the driver to keep going?

Mr MAKEHAM — Clearly with information about where the truck is located you could argue that, but because of the chain of responsibility I referred to before that would then put the manager in the firing line in terms of any breaches. So it is not just a question of the driver being pinged by the enforcement agencies, it would be the management being pinged by the enforcement agencies.
Mr STONEY — Are you confident that companies are honing their act in that regard and not putting demands on the drivers the way they used to?

Mr MAKEHAM — The companies that are using that technology are in terms of communication what I would call at the better end of the industry. They are better controlled, they worry more about the health of their drivers, they have courses for their drivers in terms of health and fatigue and how to manage their issues at home and all that sort of stuff, so they are at the top end. My gut feeling is that they are the ones that are least likely to be doing that sort of thing. In a real world you cannot preclude that occurring, but it is not happening at that end of the market at the moment. I think the people who are most likely to be breaching are the ones who are the owner-drivers with a couple of trucks and a big mortgage and big repayments. who are therefore very subject to pressures, whereas the big organisations have got things more under control. They are business people that want to stay in business and will do that. At least that is my impression of the industry at the present time.

Mr STONEY — Thank you.

Mr MAKEHAM — Another thing I just want to refer you to, and I have again provided copies of it to you, is heavy vehicle speeding, because it has been of great concern to us, the issue of heavy vehicle speeding, and we have referred to it in the submission.

I have given you a glimpse of our perception of the heavy vehicle speeding problem, and there is a proportion of vehicles that speed and speed excessively, and that is recognised by us and I think it has been recognised even by the organised end of the road transport industry. For that reason we had a summit, which we jointly convened, in Canberra in March this year, and we had about 90 people from the jurisdictions, from the research area, and particularly pretty heavy representation from the industry. They met for two days and were presented with research and discussed issues, and it was interesting that what came out of that — I have given you the communiqué that came out of it, which is what came out of a two-day discussion — was universal agreement that speeding by heavy vehicles should be addressed. Getting people as diverse as that — industry, government and so forth — to agree on those sorts of things is not bad going.

There was a strong belief that they need to shift the industry, and within the industry they want speeding to be seen as antisocial in the same way we have done, by and large, with alcohol. I know you were talking to previous witnesses about that, but we have, I think, as a generalisation had a very significant change in attitudes on alcohol. We do not yet have it in terms of speed, certainly not with heavy vehicles, but also for the light vehicle drivers. There needs to be much more enforcement, and I think it was quite clear when some of the data was presented that if you compare Australia and New Zealand, New Zealand spends a significantly higher proportion of its police dollar on transport enforcement than we do in Australia. It was a factor of two to three or something like that; it was very high. So there is the issue of enforcement. There was strong opposition to any change in heavy vehicle speed limits. Industry is not interested in higher speeds. They just want to stick to the speed limit.

There is a range of other things. I have talked about chain of responsibility, and there is a range of things that we are going to work together on to try and improve that using technology — better speed limiters, intelligent transport, smart cards, safety cam, which you are probably aware of in New South Wales, maintenance and things like that. I will not go through everything that was discussed at the summit, but to me it is significant that a group as diverse as that can get together and agree that speeding is a problem, agree that a cultural change is needed and agree that something should be done about it. That has been provided to transport ministers at a recent meeting and action will be taken on that.

They are the principal things I wanted to cover. I have gone through very quickly what is in our submission, and there is quite a lot of information there, but those are the principal issues I wanted to say something about. Road safety is important to the commission; we have a role particularly in terms of the heavy vehicle industry. That is our charter, and I suppose it focuses more heavily on that. We have a range of things aimed at fatigue, speed et cetera, et cetera. Just to recap on the point about the benchmarking report: the road condition, which is the principal focus of your two inquiries, has a very, very strong role in improving this.

The CHAIR — Peter, with regard to trucks or heavy vehicles speeding, is it an increasing problem or is it a problem that the commission is now addressing because it has been an ongoing problem?
Mr MAKEHAM — My feeling is that it is less of a problem than it was 10 years ago, but it has not changed much in the last 5 or 6 years. There is still that 20 to 30 per cent that are speeding, with a relatively small percentage doing what I would call gross speeding — that is, more than 15 per cent over the speed limit. I think at that level things have improved a lot. If you go back 10 years, there was a very high incidence of these very high speeds. There is a lot of research now on speed. The work that Jack McLean has done in Adelaide, which has been built upon by the Australian Transport Safety Bureau, indicates that there is an effect of speed, and even low-level speeding — by that I mean within 10 per cent of the speed limit — can cause a safety problem. And because it is much more frequent in aggregate we would argue that it is probably as serious as gross speeding. I think the gross speeding has certainly come down, but there is still — I do not like using the term ‘low-level’ but that is what it is, less than 10 per cent — a fairly high incidence of that.

In that data in the submission probably the one that jumps out at me is the Victorian data on B-doubles in 80-km/h zones. You can argue that speed on our open roads is an important issue in terms of run-off and running into other vehicles and all that sort of stuff, but in 80-km/h zones that is still where a lot of people live. It is in our rural areas around the outskirts of regional towns and so forth. There was a reasonably high exceeding level of the 80 km/h limit by even B-double trucks. That was probably one of the things that alarmed me more than most.

The CHAIR — How effective are speed limiters? I do not know too much about speed limiters at all.

Mr MAKEHAM — Speed limiters are very effective if they are correctly adjusted and maintained. They are a device that electronically shuts the engine off when you get to 100 kilometres an hour. There is an international standard for it. Having made that bold statement, there is, as you will see in the data in our report and in some of the stuff that was presented to the Speed Summit, there is still a high incidence of speeding by heavy trucks, so there are a lot of people who are getting around their speed limiters in terms of modification and disabling and things of that nature. Some of the industry would argue that they are just running down hills and things of that nature, but I think the prevalence of speeding is such that there is a reasonably high degree of tampering with speed limiters.

The CHAIR — Is a speed limiter a legal thing that you need to have on a truck or is it by choice?

Mr MAKEHAM — No, it is a legal thing. Since about 1994 they have been required to be fitted to all heavy trucks. The Australian design rules for speed limiters require all heavy trucks to be supplied with a speed limiter fitted, and in the state laws there is complementary legislation that says that they have to be maintained. They are a legal requirement on a truck; it is not an optional thing at all.

One of the actions we will be taking is to look at the design rules to see if the rule can be made more tamper-resistant. I do not use the term ‘tamper proof’ because nothing is tamper proof, but to make it much tougher for them — tamper-resistant. It is interesting. I had an operator, quite a major manufacturer of trucks, in my office on another matter just last week, and they have got an electronic system which is embedded in their engine. They are of the view that is has taken the operators two years to find out how to get into the speed limiter, so it can be done, but we have an action to do that.

At the summit the Commercial Vehicle Industry Association, which represents a lot of the vehicle maintenance industry, tabled a code of practice for the repair industry in terms of maintenance of speed limiters and checking when they are maintained, and the chain-of-responsibility laws that I referred to earlier do in fact cover the maintenance industry. And they are starting to wake up to that: if a repairer sends a vehicle out with the speed limiter disabled and the police are able to ascertain that that was done as a result of maintenance or at the request of an owner, for the sake of argument, the person who has made that change is also liable. So it does have a very widespread chain of responsibility.

The CHAIR — Just thinking about it, I suppose the speed limiter is effective in the limiting trucks to 100 km/h; therefore it is not that effective in areas of 80 km/h or 60 km/h and hence you have trucks speeding in those lower zones.

Mr MAKEHAM — That is quite correct.

The CHAIR — Not that I am saying that every truck driver speeds.
Mr MAKEHAM — Yes, that is quite correct. That is the current technology — that you can only limit the top speed. It is only just around the corner, the intelligent transport project that I referred to has been done in the commission in conjunction with Ausroads. One of the issues being looked at is intelligent speed control. By that, the truck would be positioned by satellite technology and a road map is not difficult to build in. There are trials being done on this now. It is built in to the onboard computer and that would actually make the truck or the car or the motorbike only do the speed limit that is applicable in that area. So that technology is almost with us. It is not very far away. Of course it is a big investment to turn it into a reality, and you would have to weigh up the costs and benefits of doing all that.

The CHAIR — Are there any further questions? Are there any further comments, Peter or Donna?

Mr MAKEHAM — No, I just wanted to outline what we are doing in particular in the heavy vehicle industry and perhaps make a few comments about the importance of roads and environment to the safety of transport generally.

The CHAIR — Thank you, Peter and Donna, for your input. We will provide a copy of the transcript and the report in due course.

Committee adjourned.