

**THE LEGISLATIVE COUNCIL SELECT COMMITTEE ON ROAD SAFETY MET  
AT THE ACCIDENT RESEARCH CENTRE, MONASH UNIVERSITY,  
MELBOURNE ON WEDNESDAY 28 JANUARY 2009**

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DISCUSSION WITH Ms EVE MITSOPOULOS-RUBENS, RESEARCH FELLOW, Dr DAVID LOGAN, SENIOR RESEARCH FELLOW, Dr BRUCE CORBEN, SENIOR RESEARCH FELLOW, Mr JIM LANGFORD, SENIOR RESEARCH FELLOW, Dr PETER HILLARD, SENIOR RESEARCH FELLOW, Professor MAX CAMERON AND Ms NOELENE DEVESON, ADMINISTRATIVE OFFICER.

**CHAIR** (Mr Wing) - Thank you for being with us, we do appreciate that.

**Prof. CAMERON** - It's worth saying that around this table and within our centre we have a lot of very experienced people who have long histories in the road safety field. You are likely to get different answers to the same question from all of us.

**CHAIR** - We are pretty independent, too.

**Prof. CAMERON** - I think it is important that you recognise that, as an independent academic research centre, that's a value that we hold dearly. It is a very important part and is valued by the various people around this State and around Australia, and even internationally, who come to us seeking advice. We have no internal processes of reaching agreement on these subjects. We all have our own independent views, so you may find that we say things that contradict each other.

**CHAIR** - That's good.

**Prof. CAMERON** - I hope you welcome that because that's the nature of the beast. If we all knew what the instant answer to road trauma was, then we wouldn't be sitting here today. We would all be out of a job, I imagine, by then.

One of the major issues in road safety at the moment is this concept of reducing deaths and serious injuries to a zero level or at least an acceptably low level. I should say on that subject that the Parliamentary Advisory Committee on Transport Safety in the UK I think has started to question whether it's the British psyche to really try to achieve a zero level. In fact their current thinking is that perhaps a more reasonable target is one whereby we should reduce the risks on the road to the same sorts of risks as in everyday life, whatever that means. That is, I think, then starting to become a different sort of target and one worth bearing in mind.

However, it does turn out that when you are looking at death and serious injury, the big issue is the transfer of kinetic energy to the humans involved in the crashes. It is not so much that the crash occurs in the first place; it is about the transfer of kinetic energy. Vehicle design, and even the design of the road infrastructure, has been very well developed to minimise that transfer of energy through processes where basically we are making use of the controlled crush of the physical environment, either built into the cars or built into the road environment, to in fact write off some of that kinetic energy before it gets transferred to the humans. There is only so far that can happen because we are not

all that clever at reducing all energy, so it comes back to the question of how we minimise kinetic energy out there on the road system. We all know the  $\frac{1}{2}mv^2$  law and clearly the velocity is a very important factor because it has a squared factor in such a relationship. But so also is the mass of the vehicles and in particular the relative masses of the two things colliding with each other. Even humans colliding with the insides of cars is still an energy transfer process that we have become quite clever at reducing. The big deal does seem to be the travel speeds on the road or, more subtly, the impact speeds. Fortunately we do write off some impact speed before the crash actually occurs, but the travel speeds are the big deal. You will notice I think from my colleagues around the table that there is a lot of focus in our work on ways of reducing travel speeds on the road, through all sort of things that range from the most traditional like speed limits and speed enforcement to some of the things that Eve might talk about in the intelligent vehicle domain.

In the area that I am most familiar with, speed enforcement, it is worth noting that Australia is in fact very well advanced in our knowledge of what makes effective speed enforcement. Some of that comes because here in Victoria and some other Australian States we have done some quite novel things. Here in Victoria there was a decision made at the end of the 1980s that we would no longer apologise to the Victorian motorist for trying to restrict his speed. That led to the Victorian authorities and the police embarking on a very so-called draconian speed enforcement program, mainly through our speed cameras. Victoria is one of the few places in the world that operates its speed cameras vigorously and covertly. It does that for the reason of trying to reduce speed everywhere at any time. Some other Australian States are maybe moving away from it. A State like New South Wales only operates its speed cameras as an accident black spot treatment. Its concept is that it is trying to address an accident problem at a given location and hence reduce the road trauma at that given location. Whether or not the New South Wales motorist believes there is a risk of being caught for speeding everywhere or anywhere, I doubt it, but no-one has actually measured it to know whether that is the case. So you have almost two extremes even within the Australian mainland of very powerful speed enforcement, as typified by Victoria, versus probably the weakest and most apologetic in New South Wales.

We have been asked in recent years to develop new speed enforcement strategies for the State of Western Australia and at the moment I am doing one for the State of Queensland. Basically what we have been able to do is take what we know about speed enforcement and apply the appropriate form of technology to the appropriate part of the road system. One of the weaknesses with a covert speed camera program is that it does not work all that well out on the rural highways but there are other ways of effectively reducing speeds on rural highways. I do not want to go into that detail here because it is all in our published reports but we have been able to develop a speed enforcement program that would reduce deaths on Western Australian roads by at least 25 per cent, serious injuries by 12-15 per cent, all through proven methods used in proven ways on the appropriate part of their road system. Something similar can be developed for Queensland and hopefully it will in the near future.

That is just one of the novel things that I think we do and can do in an innovative area to assist at least speed reduction. It could be transferred and adapted to any Australian State, as the Queenslanders are asking for at the moment.

**CHAIR** - Thank you very much, Professor Cameron. So you were engaged by the authorities in Western Australia?

**Prof. CAMERON** - Yes.

**CHAIR** - Well that is a very significant - 25 per cent - potential reduction in deaths.

**Prof. CAMERON** - Yes.

**CHAIR** - I talked to the Director of Road Safety in WA in February of last year and they were disappointed with the outcome of their measures because the statistics were not looking good.

**Prof. CAMERON** - No, and they at various times have had a very impressive road safety record in terms of deaths but in recent years not so good and bear in mind that change fluctuation I mentioned earlier.

**CHAIR** - If you were engaged by the Tasmanian Government do you think you could put forward a proposal to reduce road deaths in Tasmania by 25 per cent or is there something particular about Western Australia?

**Prof. CAMERON** - I do not think there is anything particularly unique about Tasmania, in fact there is probably a simpler problem there because you do not have the vast rural and remote highways that Western Australia and Queensland have. The best knowledge of effective speed enforcement is maybe that that comes from urban areas but we do know quite a lot about how to address the rurals highways as well.

**CHAIR** - That is very interesting. Could I just ask members if they have any questions of Professor Cameron before we move on.

**Mr DEAN** - I am just going to follow on the issue of the covert camera use and just try to draw a bit more out from you on that. I will just use an example. Tasmania is a good example going back about 18 months ago where a vehicle sped through a covert camera site at about 180 kilometres an hour and 200 to 300 metres up the road they crashed and there were three people killed.

**Ms FORREST** - It was in a 60 zone, though.

**Mr DEAN** - Yes, but I am just saying that it was a covert camera operation and had it been in the open perhaps it would have saved those lives. I was just wondering whether or not you would want to go into that any further.

**Prof. CAMERON** - No, I hear what you are saying and what you are talking about is one of the major dilemmas in this area. It is thought that a visible police presence and a real threat of being caught will change behaviour rapidly and instantly almost, especially if the driver is apprehended and receives a penalty there and then, and that is true, but the problem is only at that particular location. Police forces typically do not have enough resources to be everywhere all the time so that is why automatic surveillance in a general sense of the word has become very attractive to police forces. It is a cost-effectiveness argument. It is probably true, although the research is not there, that apprehending a

speeding driver on the spot and punishing him there and then changes his behaviour more rapidly and more effectively but no-one can afford to do it. Regrettably, while we all like to believe that we have infinite resources to invest in road safety, it is not true, and you probably know that better than anyone else as members of a government.

**CHAIR** - We are not members of the Government, we are members of parliament.

**Prof. CAMERON** - Yes, okay, but you are sitting beside those who have control of the purse strings. The thing about the covert methods of operation and other methods that can spread the effect everywhere at any time is that they go beyond those individual sites and while the automatic surveillance methods may result in the receipt of the notice about the speeding offence one or two weeks later, the behaviour change is much more effective long term and of course spreads throughout the whole driving population.

What I have also said can be applied to another way of achieving a so-called general effect rather than a local effect through an overt operation and this is typified by Queensland where they deliberately randomly assign their camera activity in time and space and in fact it derives from the old random road watch technique that Mark Leggett pioneered in Tasmania probably two decades ago.

**CHAIR** - That is going back a bit. Where is he now?

**Prof. CAMERON** - He is in Queensland Transport in the Corporate Governance area but he still dabbles in road safety and I sometimes interact with him.

This random allocation in time and space, which again seems to be anathema to the idea you put most of your resources where most of the problem is, has also been shown to be very effective in having that general effect on speed everywhere at any time. So it is not necessarily covert operations but it is clever operations that go beyond using speed enforcement in a black spot sense. And there is a lot of good knowledge about that.

**CHAIR** - So generally I think we have very little visible presence of the police on our roads. I was not aware until recently that we have a separate traffic section in the police force. I thought that must have gone but I am told that it is still there -

**Mr DEAN** - In a way.

**CHAIR** - There is no doubt the visible presence of the police is a very strong deterrent to people offending. How would you describe the level of police being visible in Victoria? Is it adequate in the circumstances? I think ours is inadequate. How do you feel it is there?

**Prof. CAMERON** - If your objective is to be visible, then I would probably describe Victoria's traffic police visibility as not necessarily adequate. I am not going to use the word 'inadequate' because I think that is overstating it. I mention my experience driving in the United States in recent times. I have driven through three of the west coast States and California is unique in that you see a lot of the Californian Highway Patrol, but it is usually highly visible, stationary vehicles, and for a knowledgeable person about road safety, I think to myself, what sort of threat is this. But in terms of visible police presence, California would be head and shoulders above Victoria and probably most

Australian States. But whether it represents a real threat and whether it really deters illegal traffic behaviour in California, I think is a moot question. It might make the Californian citizens feel warm and fuzzy but that is probably where it begins and ends.

**CHAIR** - Thank you very much. Who would you like to speak?

**Prof. CAMERON** - I think my colleagues should put their own hands up.

**CHAIR** - We have had quite a good and formal discussion so we can still discuss matters that we have discussed informally and put them on the record. So please do not be deterred from raising a subject that we have already discussed.

**Dr CORBEN** - I was thinking about what would be the most valuable advice or information that, from my point of view, we could offer. I think it is reflected in the work that we have been doing recently in Western Australia. I mentioned earlier that we have helped Tasmania with the development of its current road safety strategy and that was probably a couple of years ago now.

**CHAIR** - I think, for the purpose of the record, if we can record that Dr Corben has recently been appointed to the Tasmanian Road Safety Council.

**Dr CORBEN** - I mentioned earlier that we had been assisting DIER with the Tasmanian strategy, which is the current strategy. We have also given considerable assistance in Victoria with its latest strategy and, likewise, in Western Australia. That being the third one out of a series, it probably represents the most advanced thinking that David Logan and myself and Peter Vulcan and Ian Johnston have been able to put together on that. It is worth talking a little bit about that I think because of it represents some innovative thinking and some advanced ideas about how to get the biggest impact that you can in terms of trauma reduction.

Some of the key elements of the approach that we have taken there firstly I think is that the West Australian Government or the Office of Road Safety, through the Premier, was particularly keen to use the safe system road safety philosophy as a driver for the approach in Western Australia. I am not sure whether you have been made aware of that strategy or that approach and how well it is understood. I guess it is Australia and New Zealand's version of the Swedish Vision Zero and the Dutch Sustainable Safety. It is a way of thinking that we have adopted in Australasia to try to capitalise on the best features of the Netherlands and Sweden in particular because of the success that they have had and the well-founded thinking that goes into their approach. So we have used that in developing the West Australian Government's draft strategy. It hasn't yet been adopted; it was presented to government two hours before they called an election in about August last year. There was a change of government and that means that that strategy is waiting to be decided upon.

One of the features of that strategy is that we have developed what we have called a 'safe system matrix', which has four cornerstones. One of them is about looking at infrastructure and how you might invest most productively in the infrastructure in order to get the biggest effects for the dollars available.

The second cornerstone is about safe speeds and picks up very much on the sorts of things Max has spoken about, speed enforcement and how Max's recommended approach might apply in Western Australia but it also goes a bit further and looks at what might be the savings in deaths and serious injuries from reducing speed limits in both rural and urban areas in Western Australia. That acknowledges, I suppose, the fact that in Australia speed limits are generally at least 10 kph higher, sometimes 20 kph or more, than in comparable countries, the best-performing countries. That presents lots of opportunities for some substantial reductions in trauma there.

The third cornerstone is in the vehicle safety area. As we have already talked about, it is not so much about focusing on eliminating vehicle defects because that makes only a very small contribution to trauma. It is more about capitalising on vehicle safety features that have been proven to be successful in reducing the likelihood of severe injuries in the event of a crash or in reducing the likelihood of crashes through features such as electronic stability control. We have looked at how you might combine different types of proven vehicle safety features to get the biggest gains possible over the life of their strategy, which is a 12-year strategy, taking them through to 2020.

The fourth cornerstone is how we can best use behaviour-change programs through advertising and mass-media-type campaigns to try to target things such as fatigue, drink-driving, speeding and those sorts of things. In that strategy we have put together what we think is representing best practice. We have tried to forecast from the application of those measures across a 12-year period what the savings might be in deaths and serious injuries over the life of their strategy. There is an optimal mix of measures and we think it is not unrealistic to expect something like a halving of the deaths and serious injuries in Western Australia over that 12-year period. But, as you take things out or delay them, the opportunities to make those sorts of gains decline accordingly.

That draft strategy has not yet been formally adopted, but it is available on the WA office of Road Safety web site as a draft document. It is very accessible. To me, that is representing the best ideas that we have been able to assemble to give the biggest effect.

**CHAIR** - What is the composition of your group preparing that report? Are they all from Monash University?

**Dr CORBEN** - Primarily it has been David, who is sitting beside me here; Peter Vulcan, our founding director who has had some involvement in preparing a previous strategy for Western Australia; and also Ian Johnston, who is our most recently-retired director. We have had the advantage of some very experienced people working with us on the project.

**CHAIR** - When do you expect that report will be available?

**Dr CORBEN** - I think the report is available, but it is a draft strategy that was recommended by the WA Road Safety Council to the Government two hours before the election was called so it is now waiting for the new Government to decide how they want to handle it.

**Dr LOGAN** - Our report to the Office of Road Safety is available on our web site.

**Dr CORBEN** - Yes, our web site as well as the WA web site.

**CHAIR** - I see.

**Dr LOGAN** - We sent them a report and they wrote their strategy using some elements of our report along with some of the community consultation stuff that they did themselves, so ours is more of a technical report and theirs is a report for public and government consumption. I think it is No. 275 on our web site.

**CHAIR** - Thank you.

**Prof. CAMERON** - All of our reports are readily downloadable from the web site and we can provide also a DVD with a full collection, which should be useful.

**Ms FORREST** - At the ARRB and we were talking about truck rollovers and things like that and the possibility of reporting of central events, like trucks that nearly lose it on a corner but not quite and they get it back and they are not going to tell anybody for fear of being in trouble with their employer or admitting that they might have been a bit reckless in their driving or whatever. Is there any place for some sort of process that might enable and encourage truck drivers as well as other road users to identify areas where they have perhaps got into trouble, particularly if a corner was signed at 45 kph and they did it at that speed and there were good conditions and they still had a problem or thought there was a problem, to identify some of these problems with the infrastructure itself, the roads. Do you think there is a place for that?

**Dr CORBEN** - One of the alternatives is to look at traditional approaches, which is using crash data over a number of years to take us to the places which have clearly demonstrated problems, perhaps of the type that you are alluding to there. That has been the traditional approach and that has been used I think in Australia probably since the late 1970s or early 1980s, that sort of black spot type of approach to identify the worst sites and then prioritise and then invest. Generally I think agencies have steered away from using that kind of reported information from users because it does not necessarily have the objectivity or the demonstrated problems that crash data have. This always highlights challenges as to whether you rely on the public to report those sorts of things. I guess the fact that road authorities do not invite that kind of input is probably indicative of the fact that they do not necessarily see it as a reliable way of finding out where the problems are

**Ms FORREST** - From your own comments there, Bruce, you are basically saying that we rely on historical evidence, where we wait for a crash to happen and then we look at it. What I am talking about is prevention. Is that not the way we need to head, trying to identify where there could be problems and acting to prevent rather than waiting for a crash to occur - saying that we will look at that now.

**Dr CORBEN** - Prevention is obviously a better way to go. There is a lot that we can learn from historic crash data that can be used as a preventive approach so that we can look at the way we design the road system and operate the system in order to take that preventive approach. I do not know yet whether it is proven that that kind of reporting by individuals is a good source or not; I think it is probably a question that needs to be answered.

**Ms FORREST** - It has not actually been tried anywhere to your knowledge then? I think as a road user who is on the road an awful lot, and truck drivers who are on the road because that is their living and even taxi drivers, people who use the roads a lot, particularly the more remote roads and rural roads where potentially, even though we are not experts, we are more likely to identify a potential or an area of road that appears to be wearing away or whatever to our untrained eye without the laser to assist us, is it worth considering that sort of approach? I do not know how easy it would be to do or how hard.

**Dr HILLARD** - There would be a lot of advice on the type of people who would report things. What you are talking about is seeing road safety audits. We actually have some software which is a very jazzed up road safety audit process but they are very expensive because it is very time consuming for somebody to check each length of road.

**Dr CORBEN** - Victoria did actually try something similar to that with their black spot funding. They did invite the community to tell them of locations that they thought were really hazardous and some were chosen to be part of their black spot program without necessarily having a crash record to support them.

**Ms FORREST** - That is the sort of thing that I am talking about. Even if it were only for a three-month period, you invite comment from road users. Obviously you are going to get people who just want to have a bit of a go about an area outside their house that they want sealed or something. I know a lot of the problems that could eventuate but potentially you could prevent.

**Dr CORBEN** - A substantial amount of money was spent on treating both types of problems, those that were supported by crash data and those that were supported by public reporting. There was a big difference in the performance of the two different methods; the traditional approach, I guess, performed far better. The actual reporting mechanism that you have talked about I am not sure has actually been tried in quite the way that you have described.

**Dr HILLARD** - An example would be when witnesses describe the behaviour of motorcyclists. They very often suggest that the motorcyclist was riding very fast. What they actually mean is that the motorcycle accelerated very fast, it was a high rate of acceleration rather than the speed. There are issues attached to it, as Bruce was just saying.

**Mr CORBEN** - I think that is not to diminish your point about trying to be preventive in the approach. I think that is a very important aspect.

**Ms FORREST** - For truck drivers, particularly, the truck is their work place, the road is their work place. I know in health there was this culture of blame and a witch-hunt and if something went wrong we were out to get someone and say 'It was your fault, if you had not done that'. Air safety was the same. There was always this, 'It was your fault'. Whereas now there is the culture of let us open this up and talk about how we can prevent it. I am sure that it would be quite difficult to get all the truckies on board to actually say, 'I nearly lost truck' or whatever.



**Dr CORBEN** - There could be a place for it. I guess it just needs a bit of thinking through about how to do it and try to make it as objective and valuable as you can.

**Mr DEAN** - It has been said by a number of people that there is far too much reliance now in some States by police on speed cameras to moderate driving behaviour. They are overconcentrating on that and therefore they have lost the ability to use other methods of controlling speed. Do you have a view on that?

**Prof. CAMERON** - The other methods, apart from the speed cameras, in the area of speed enforcement are hand-held radar or laser, or alternatively a thing called 'moving mode radar', which is usually vehicle mounted. The idea is that the technology can measure the speed of an approaching vehicle relative to the other moving car police car - or even a departing vehicle. All of those methods, because there is no camera gathering of evidence, involve the police officer intercepting the driver either from the car or another officer stationed down the road. These are the sorts of technologies that lead to an immediate interaction with the driver and perhaps change his or her behaviour rapidly, instantly and maybe even more effectively, but they are very labour intensive. This is the dilemma that police forces have. It perhaps even drifts into management issues because they cannot afford to have enough of these to cover the road system adequately.

Like most people who have large empires of staff working with them, they want those empires to be preserved or maybe even grown, so they tend to have a bias towards labour intensive methods of operating. But the grim reality is that if you want to cover a broad part of the road system much more cost effectively, then camera surveillance comes into its own. All the economics show that quite clearly, and used in the right way they can have very powerful effects on speed everywhere most of the time.

**Mr DEAN** - That brings me to the next question. We had some evidence yesterday that corporations, big organisations, should probably have more emphasis on their drivers or people driving their vehicles to abide by the laws, to restrict themselves to the proper speed limits, and that they should have probably penalties imposed by their companies to ensure that their people do the right thing. Do you think there's an area there for us to work on as well?

**Prof. CAMERON** - I do, and in fact what you are talking about is using, in a sense, the employer as a supplementary police force. At the moment the man in the street has just the recognised police force who is trying to control him or her, and one of the things that is perhaps more relevant in the drink-driving area than it is in speeding is that there are the sanctions of our peers and relatives. That is why people are strongly deterred from recommitting drink-driving offences, because there's a real social stigma associated with it. I am old enough to remember when it wasn't such a social stigma, and perhaps you are too.

**CHAIR** - Adequately.

*Laughter.*

**Prof. CAMERON** - Yes, and these days I think we are rapidly moving towards at least the severe speeding offences as having a social stigma associated with them, and more strength to the arm of such thoughts, in my opinion, because that really then provides

again another form of supplementary police force - the social peers. If you have an environment where there is employer control of drivers and their behaviour, and the sanctions imposed upon them, then it is a way of supplementing existing police forces. Think of it in those terms.

**Ms FORREST** - There's a similar situation with one of the big employers in Tasmania that puts all their drivers through a defensive driver program, and they also have a rule with engine on, phone off. It's not a matter of 'put in the hands-free kit,' it's 'phone off'. I understand they ring them while they know they're on the road, and if they answer it they might get one warning before they get sacked.

**Prof. CAMERON** - Really?

**Ms FORREST** - Yes. So there's every incentive there, and that is certainly an example of an employer acting as that supplementary police force.

**Prof. CAMERON** - Yes. I think we need it. The well-known, effective way of changing behaviour, especially illegal behaviours, is the fear of detection, rapidly followed by the severity of the penalty.

**CHAIR** - Yes, first and foremost.

**Prof. CAMERON** - As legislators, please resist the temptation to increase the penalties without raising the fear of detection. Whether it is real or perceived it doesn't matter, but raising the sanctions is not always the best way to go.

**CHAIR** - I agree entirely, but that is usually the knee-jerk reaction of most governments; if there is a spate of accidents, increase the penalties or create new offences -

**Prof. CAMERON** - Indeed it is.

**CHAIR** - and it's not the way to go.

**Prof. CAMERON** - And it's a cheap way to proceed, but whether it is as effective is another question entirely.

**Mr DEAN** - There is another question I had in this line as well, and this was brought back to me on a recent visit to Singapore. In Tasmania in particular, and I am not sure if it applies to other States, you can apply for a special licence, if you lose your licence through speeding or drink-driving, to continue in your employment. In Singapore it can't happen, you lose your licence and that's it, and you must be retested. There's no such thing as a licence being automatically returned to you after a suspension period. Do you have a position on that at all, have you looked at that?

**Prof. CAMERON** - We have something analogous with our alcohol interlock program. In many places around the world, including the United States, an alcohol interlock is offered as an alternative to licence loss, especially when the defendant argues that it would be a huge imposition on livelihood. Victoria resisted the temptation to do that, we require the licence loss, and as a condition of relicensing, the alcohol interlock may be imposed by the magistrate, typically for a period of at least six months. That tends to be

used in the cases of very high level BAC for a first offence, or quite commonly for second offences. Most drink-drivers have very high BACs, and I think it's a very important issue.

We are very successful in most Australian States with our random breath testing, we have essentially halved, or even three-quartered, the social drinkers but the hard-core is still there. In Victoria we are now looking at the question of how we address people who are alcoholics and are drinking and driving, who really don't have the option of not drinking because they are sick people. In rural places they don't have the option of not driving. You need very strong enforcement and sanctions to overcome that problem.

**Ms FORREST** - You are probably aware of the recent decision in Tasmania related to the publican who was charged because he gave the car keys back to a customer. The customer had given the publican his keys, he then had a few drinks and demanded the keys back. The publican, under threat of violence, I believe, gave them back. The customer drove off, was killed on the way home and the publican was charged.

**Prof. CAMERON** - Probably that is appropriate. I'm not sure how strong your legislation is in that area, but I think the Victorian legislation might lead to the same thing.

**Ms FORREST** - It puts the publicans in a difficult position. If you have an 18- or 19-year-old behind the bar who in good faith takes the keys - I have talked to a couple of publicans about this and one of them was in the same situation where he refused to give the keys back, the guy said, 'I only want my house key. I need to get in when I get home in the taxi'. Dutifully he handed him the keys to get his house key and he took off. It is a difficult situation in that sense.

**Prof. CAMERON** - Most States have a requirement for publicans to not serve alcohol to intoxicated people. Maybe that is what the publican should have done on this occasion. He is getting a bit beyond his authority, asking and withdrawing the keys from people.

**Ms FORREST** - He didn't ask for the keys; the man volunteered his keys. He gave his keys and asked the publican to look after them. That is what happens quite often now. In fairness, a person could have been out having a few drinks somewhere else and gone to the pub down the road, appear sober when they walk in, and you have served them two drinks and they're over the limit.

**Prof. CAMERON** - It doesn't take much for anybody to get beyond the legal limit, so I think we have a real dilemma there. One of the really interesting things we found in our research was that when they started using the booze buses in rural Victoria - which was thought to be a really good thing to do because they had been shown to be so very effective in Melbourne - it essentially led to the small towns being so-called 'destabilised'. The bush telegraph was alive and well, everyone was aware that the booze bus was in town and where it was, and the fact that there weren't many other policemen around apart from the booze bus. What happened was that they typically kept drinking but went home on the back roads that they thought they knew well - little dirt tracks and that sort of thing - and we found that crashes went up on the minor roads in the same area as the booze buses were operating. It caused the Victorian police to have a whole rethink about how to use booze buses in rural Victoria. That message has been picked up by most Australian States and it really is an important way of showing that things aren't

always obvious, that what works in one place doesn't necessarily work perfectly elsewhere.

**Mr DEAN** - That was identified in Tasmania in this last 12-month period where they slackened off on the number of random breath tests being done and put them into the back streets and the drink-drivers went up and randoms dropped off.

**Prof. CAMERON** - As a researcher, this is quite often what we find. When things are changed in terms of police activity, crashes change dramatically. Because these measures are so powerful, when you don't use them or use them in the wrong way, crashes do increase.

**Mr HARRISS** - As a bit of research stuff - Ivan has been raising the matter of speed camera detection - ARRB mentioned to us earlier today the point-to-point speed detection and they suggested that might be productive method for us to use in Tasmania where you don't need to worry about so many cameras. Have you done any particular research in that area?

**Prof. CAMERON** - We have. In fact, that is one of the things that the West Australians and Queenslanders are particularly interested in, especially on highways that are very long and no-one can conceive of the idea of enforcing the speed limit from beginning to end. Even spot speed activities don't work all that well. Point-to-point has been well-used in the UK, but also here in Victoria. There are four contiguous sections on the Hume Highway going north from Melbourne, one up to 25km long, where the vehicle, as it goes past a trigger point, has its numberplate recorded optically and character recognised. Then as it goes past each of the other points, that process is repeated and then the two registration numbers are matched through computers at some central place and they work out the time over distance, and the average speed.

**Ms FORREST** - That must reduce speeds over the whole of that section of the road.

**Prof. CAMERON** - It does.

**Ms FORREST** - I can spot a speed camera fairly well these days on the usual spots on our main highway and as soon as you have gone past that's it that one is out of the way.

**Prof. CAMERON** - Yes and it is quite amusing because the New South Wales motorists who have come to this same section of road have thought just like that and found that they have received a speeding ticket for an average speed offence -

**Ms FORREST** - They thought it was a spasmodic taking -

**Prof. CAMERON** - Yes, but it is early days. There has been a fair bit of experience in the UK, especially in the Strathclyde area of Scotland, and the crash reduction benefits are quite impressive.

**Ms FORREST** - So is there a particular length or section of road that it needs to be for it to be effective?

**Prof. CAMERON** - No.

**Ms FORREST** - It can be any length?

**Prof. CAMERON** - It can be any length.

One of the issues that worries some people with it is whether vehicles have the opportunity to enter and leave between the two camera points. So typically the roads are chosen as ones where there is no great incentive or even opportunity to do that. Freeway environments are good because while there might be a parallel road, you would get there faster through the point-to-point camera system. That seems to be the only weakness in anyone's mind.

**Ms FORREST** - In Tasmania we have lots of little side roads that come into most of our highways at various places and if someone came in off a side road they would only get picked up by the last camera -

**Prof. CAMERON** - Indeed they would and the cameras can operate as spot-speed, fixed speed cameras at each of the points but such a person would not then have the two readings recorded to calculate an average speed. So you tend to choose highways where most of the traffic is travelling throughout the length and has an incentive to do so or no incentive to leave and rejoin and all that sort of stuff.

**Ms FORREST** - The side road is just too far out of the way?

**Prof. CAMERON** - Yes. So the application tends to be favoured for freeways and other highly trafficked roads with potentially high numbers of crashes but in fact the thing can be used anywhere in any short section of the road.

**Dr HILLARD** - The big picture is that you can have mobile point-to-points as well in the -

**Prof. CAMERON** - No, that is a different technology, but such point-to-point does exist.

**Mr DEAN** - Did you say that point-to-point is operating now in the UK?

**Prof. CAMERON** - Yes, it has been in the UK for quite a long time. It tends to be used in the UK, apart from Strathclyde, for roadworks speed limits where they are trying to enforce an average speed over a kilometre to make the most of road. The UK evidence is quite good as to crash effects. There has been a very good study of such a system in a tunnel in Austria, which is also very convincing.

**Mr DEAN** - I guess you wonder why it really has not taken off here then because I suspect the cost of that sort of a proposal or strategy would not really be much greater than the other camera -

**Prof. CAMERON** - No, it is quite expensive and I think it represents that it is early days for the technology so the cost reduction curb hasn't really taken effect. The Victorian system, which is 10 banks of cameras in pairs covering the five road sections in two different directions, - can you put this off the record?

**CHAIR** - Yes.

**Mr HARRISS** - Bruce, you mentioned that some other jurisdictions, particularly overseas places, have speed limits 10-20 kph less than ours and yet they have superior infrastructure. Would you go back to that and give us an analysis of the effects of that? In addition to that, it was said just recently that Tasmania has the oldest vehicle fleet in the nation. Is that going to have some negative impact for us in terms of road safety measures or crash reduction measures because of that, and the lack of contemporary technology in vehicles?

**Dr CORBEN** - I think maybe Jim and David might like to comment as well. I saw the work that Jim has been doing over a number of years for Austroads, which has shown that Australia's speed limits across the urban and through the rural settings are typically at least 10 kph above comparable roads - sometimes even more like 20 kph, I guess, on some of the local roads - in the likes of Sweden, the Netherlands and the UK et cetera. All of that I guess tends to reflect a different emphasis or a more advanced understanding of the importance of speed, particularly in urban settings and being able to use that to bring about reduced risk but more importantly lower severity of crashes in the event of a crash. I think all the evidence of the reliable studies show that when speed goes up, then typically trauma goes up. That is not surprising, it is simply the laws of physics, that when speeds go down then trauma goes down.

There are cities such as, for example, Gothenburg in Sweden where there have been quite dramatic improvements - a halving in the number of pedestrian deaths and something like a 30-40 per cent reduction in cyclist deaths because that city set out about getting speeds down in the city centre area to levels around 30-40 kph - maybe 50 on the arterials. In places where pedestrians are mixing with vehicular traffic in those built-up areas, then 30 kph is probably the speed that they aim for. So not only do they have a speed limit but they also have infrastructure that has been designed so that that becomes the natural choice by drivers.

**Ms FORREST** - So they have traffic calmers and things assisting that?

**Dr CORBEN** - Yes, they do. They have raised platforms and road narrowings and so on. They have put in in Gothenburg something approaching 700-800 individual treatments of that type over recent years and they are absolutely convinced that that is the reason for such dramatic improvements in the rates of pedestrian and cyclist deaths.

**Ms FORREST** - Have they actually released any figures of the savings to the health system through those changes?

**Dr CORBEN** - Not that I have seen but they may have. I think they are writing up an evaluation of that work at the moment, but whether they actually just stop in saying that has resulted in this many fewer people being killed as pedestrians or cyclists or whether they take it to the next stage and talk about some of those flow-on benefits that come from the reduced load on the health system, I do not know.

**Ms FORREST** - And the lack of impact on productivity because someone is dead they cannot work anymore, and even with the seriously injured there are productivity issues.

**Dr CORBEN** - Yes, the costs are very high in terms of the estimated costs of deaths and serious injuries. The impacts as they flow on to the health system would be very considerable as well.

I think that has been the experience in so many parts of the world when the speeds have been matched to the type of road users and the quality of the infrastructure, then you get substantial gains and that is an area where I think we are falling behind in Australia. We are not as advanced in our thinking about managing speeds. Certainly, as Max has described, our way of enforcing existing speed limits is very well developed, but in terms of looking at how we might use lower speed limits in certain settings we have a lot of opportunities to develop this to more effect.

**Ms FORREST** - In the implementation of that, I think perhaps the average rager out there thinks, 'Crikey, I do not want to go 10 kph slower, it is going to take me an extra half an hour to get there. In reality it is probably three minutes or less, depending on how far you are going, obviously. Has that been part of the promotion of those schemes, do you know? For example, advertise that if we are going to reduce the speed limit in a 300-kilometre stretch of road by 10 kph, if you travel at the speed limit, you will only lose however many minutes, so that people can put it into a really meaningful number. Ten kilometres sounds like a lot in people's minds.

**Dr CORBEN** - We were invited by the Transport Accident Commission a couple of years ago to look at that issue of the relationship between urban speed limits and urban journey times. There is very little evidence around to say that travel time impacts are anything more than minimal as a result of lowering urban speed limits. In fact, we, ourselves, back in about 2001 did some modelling of that in relation to the reduction in the default urban speed limit from 60 to 50. Our estimate, using some well accepted models for forecasting travel time impacts was something less than 10 seconds' increase per average urban journey by reducing 60 kph roads to 50 kph..

**Ms FORREST** - It is just that your media machine needs to get that information out there to make it meaningful for the average punter.

**Dr CORBEN** - I think there are a lot of safety benefits but the travel time impacts are minimal. In terms of environment, lower speeds mean, generally speaking, smoother flow of traffic which means reduced emissions which is good for the environment and health with people who have respiratory illness et cetera. Lower speeds can also present less of a threat for people and therefore people would be more likely to want to walk, use public transport and use bicycles et cetera which leads to healthier lifestyles as well. So I think there are a lot of benefits that would flow from that lower speed environment.

**CHAIR** - Also less serious consequences in the event of collision.

**Dr CORBEN** - That is right. It not only reduces the risk but the severity of injuries could be dramatically reduced, particularly for pedestrians because their risk of death is very sensitive in that range of about 30 to 50 kilometres per hour. There is a dramatic reduction in the risk of a fatality if the impact speed is down.

**Mr DEAN** - It has been said by some that the longer you keep a person out there on the road, the more likely they are to have an accident, and that the slower you make them drive the

more likely they are to drive without full attention to what they are doing. In other words, they become somewhat drowsy, but I am looking for another word to say that they are not as aware of what is going on around them because they are not driving reasonably fast, they do not have to concentrate as much on their driving and so therefore they relax more rather than concentrating on what they ought to be doing. Have you done any research on that to see whether there is evidence to support that?

**Dr CORBEN** - I invite comments from my colleagues about that. I certainly have not done any of that research. But even if there is such an effect, evaluations of lower speed limits show that there is still a net gain. I think that is the important thing, even if that is occurring. I do not know whether anybody around the table has any knowledge of that.

**Mr LANGFORD** - We have heard quite a bit in trying to sell some of the safer speed limit systems around, particularly the local municipalities in Western Australia - and, to me, it has always been an argument somewhat akin to if you sprint a marathon you are not going to get so tired because you are going to be running this time.

Just about every piece of research study shows that as the overall travel speeds decline, so too does the severity of crashes. There is no indication I have come across anywhere that supports that argument.

**Mr DEAN** - My next question was -

**Mr HARRISS** - Before you do, if somebody can address their mind to that other matter that I raised about the vehicle age.

**Dr CORBEN** - I do not know whether David or others might, or Max would want to comment on that - age of the fleet.

**Prof. CAMERON** - I think it probably is true that Tasmania does have an older vehicle fleet and, at the other extreme, the ACT has a particularly young vehicle fleet but probably in the grand scheme of things it is a second order effect. Australia, as a whole, has relatively old vehicles - long-living vehicles, I guess you should put it.

Secondly, I do not think we have followed the European and North American fashion idea of turning over our vehicles as rapidly as they seem to do. It becomes an issue for new vehicle safety design filtering through the vehicle population, which might be thought to be a counterargument for doing something in that area but I do not think it is. We turn over our vehicles rapidly enough to make improvements in the design clearly apparent.

We have been able to show that since the early 1960s before Australia adopted a lot of the American federal motor vehicle safety standards that in the next decade there was a demonstrable improvement in vehicle safety; they are much more crashworthy. In the decades after that they kept on improving. That is probably sufficient in itself to justify continuing to favour policies to get the best-quality designs in Australian cars.

**Ms FORREST** - Should there therefore be a higher premium paid, like an MAIB premium or TAC premium on older cars?



**Prof. CAMERON** - It is interesting you say that because one of the things this centre has done for about 15 years now is calculate the relevant safety of cars. We have now some 300 million vehicles in this database and we provide to our sponsors information for an annual brochure they put out - it is in your handout, I am told, the used car safety ratings.

If you were in a commercial insurance environment, you might well argue that you should ask for lower premiums or, vice versa, higher premiums for the cars that have the higher risks of injury and so on to their occupants.

**Ms FORREST** - The people who own these older cars are often the disadvantaged, the low-income earners and you slug them with a higher premium. It is a difficult situation.

**Prof. CAMERON** - Yes, but even for people who can afford the newest cars or the second-purchase cars, there are much better decisions to be made in terms of reducing the risk of death and injury than the car choice than some people are making. That brochure provides all the information for them to do so and could, in fact, be used by people like the TAC and your own organisations to favour certain cars by the third party insurance premiums.

**Ms FORREST** - I will just check where mine is on the chart. It looks okay. It is in the dark-green section at the top of this one, thankfully.

*Laughter.*

**Prof. CAMERON** - That brochure has become a bit more subtle in recent years in that we have added a dimension to it to reflect the risk of death and injury to the other people that the cars crash into, so-called 'aggrocity'.

**CHAIR** - I like mature cars.

*Laughter.*

**CHAIR** - When I have a car that I like, I like to keep it as long as it is going well.

**Prof. CAMERON** - You can keep it but if I were controlling your insurance premium I would charge you for it.

*Laughter.*

**Dr LOGAN** - One of the possibilities for accelerating the rate of improving vehicle safety through the take-up of modern safety features is to try to encourage corporate and government fleets to take up the best possible safety features they can, because they tend to be the group who can most afford it and you are trying avoid penalising the disadvantaged, so to speak, but their vehicles tend to have fairly quick turnover time so they soon become a semi-new vehicle for someone in the private fleet. You have a lot of two- and three-year-old vehicles that will be coming onto the market at good prices - ex-government and ex-corporate fleet vehicles - which are probably quite a bit more affordable because they have three years of depreciation behind them. In the large car market I think corporate fleets probably purchase 60-70 per cent or more of the new

vehicles, so that method can be a very good source of getting safety features into the fleet.

**Mr DEAN** - On the accident side of it, evidence has been given to us that inattentive driving in Tasmania - and I guess it is probably the same here - has been the greatest cause of fatalities on our State roads. It has been suggested to us that there are too many distractions becoming available in vehicles now - GPS, radios, telephones. Has there been any research by Monash or by you in relation to that side of things?

**Ms MITSOPOULOS-RUBENS** - As part of the work I do, we are quite interested in exploring the effects on driving performance of what is called more generally your 'in-vehicle information and communication systems' - IVICS or IVIS for short. Of those types you have named a few - for example, navigation systems. In cars now what we are seeing more of is the ability to play MP3s, so there are more complicated ways to access the information in your in-vehicle system. Rather than pressing your presets to go to a different radio station, you would press one button to go to another menu and then press another button to go to the next level of menu until you find a song you want to play. It does produce some interesting challenges for safety. There has been quite a bit of research which will say that things such as your placement in the lane, your lateral position in the lane, is affected by interacting with those sorts of systems. Looking away you might weave around the lane a bit more, which could mean that you run into other traffic. On the flip side, there is also some suggestion, although limited, that certain types of drivers might be able to compensate for those sorts of interactions, although there is still additional work that needs to be done there. As a general rule, those sorts of systems are a particular issue from the distraction point of view and have a negative impact on safety. A similar issue is that often we can bring into the vehicle things such as iPods, any sort of MP3 player device, that can be sat in the vehicle and people can interact with those. That is a big issue; it is an issue worldwide about how people can control the use of those systems and how it affects their driving.

**Ms FORREST** - Kids will argue that they can text without looking at their phone anyway, so they can watch the road and text at the same time. They just can't read the screen when the message comes back without taking their eyes off the road.

**Ms MITSOPOULOS-RUBENS** - It's not only about taking your eyes off the road, it is about the mental demand associated with it as well. We are not only talking about your lateral position within the lane, but it could impact your speed. If you are following another vehicle, you could close in on that vehicle and if the vehicle in front was to brake abruptly then your ability to stop in time is affected. It is a particular issue and it is becoming more of an issue because those sorts of systems are not designed with the user in mind.

**Dr CORBEN** - From a practical point of view in terms of the Tasmanian context - and I guess like pretty much every other State in Australia - people are leaving their lanes, particularly rural areas are probably the single-biggest challenge you have, resulting in a left or right departure into the roadside, hitting trees, rolling over, hitting poles and so on, or maybe having a head-on collision. I know a bit about Tasmanian roads. Quite often they have unsealed shoulders; they tend to be narrow, often curvilinear. All those combinations of the physical environment combine with that kind of distraction effect that Eve has described. You might only need to get one wheel into the gravel and that

can be enough to lead to loss of control, which then results in very severe impacts with roadside trees and embankments, overturning, and so on. Those kinds of issues can be a real concern in rural settings where speeds are high and road quality is not always as good as we'd like.

**Ms FORREST** - What about mobile phones, then? We've had evidence, and I speak from personal experience, that holding a conversation is as distracting as trying to use a phone even with a hands-free kit. What is the view of the people around the table here about mobile phones? Should we not be able to use them in cars at all? Engine on, phone off or is there a place for them?

**CHAIR** - Just before answering that, Peter, I think you were going to make a comment on the last topic.

**Dr HILLARD** - It was just about distraction. Lots of other things can distract a driver. I worked on a project where we recruited a sample of 79 drivers who had been involved in crashes. It involved interviewing the driver and then accessing the vehicle and going to the scene. We got information on all three fields and then we presented the information to panels of experts who knew the locality where the crash happened, and where possible we got the emergency personnel who had been at the scene to come along as well. The panels had to choose what they thought were the contributory factors to the crashes. A researcher wouldn't say it was a random sample, but a layman would say it was a random sample. It was a sample of 79 crashes, almost random. From memory, in about 30 of them distraction was judged to be a factor. In only one of those was there a technological source for the distraction. It was somebody who was using a mobile phone or they were texting or retrieving a message or something like that. In the rest of them there were natural sources of distraction, the most common of which was - and it was in more than 10 - that people said they were just distracted by their own thoughts. They were thinking about a divorce or an argument they'd had earlier or whatever. Several people were distracted by infants, children or insects in the car; they were trying to get insects out of the window. Several people were arguing with passengers in the car. People were arguing with other drivers, so there are all sorts of sources of distraction. As I said, out of 79 only one was involved in technology.

**Ms FORREST** - So a lot of those were people running up the back of somebody?

**Dr HILLARD** - They were all serious injury crashes, whereas rear-enders tend to be of lower injury severity.

**CHAIR** - So even having a discussion with a passenger or the passenger having a discussion with the driver and looking at each other worries me. I have always looked straight ahead and the passenger gets to understand eventually that I am not going to be looking at them. Then they stop expecting me to be looking at them. When I am a passenger I never look at the driver. I look straight ahead and then the driver gets to understand that I am not going to be looking at him or her. I was a passenger a few weeks ago with a friend who was -

**Mr DEAN** - Was I in that vehicle as well?

**CHAIR** - Yes. You were in the back seat. The driver was conducting discussions as if he was sitting in a lounge room chair.

**Ms FORREST** - I think kids know very well that the parents can't look at them and drive at the same time, that's why they always ask you those really tricky questions when you are driving the car. That is great, because they have actually asked the question about where they come from or whatever.

*Laughter.*

**Ms FORREST** - But you've got to think, 'Oh my God, we're having this discussion now'. So obviously that is a distraction even though you might not look at them. Kids do it all the time to their parents; they lay something on them at that particular time.

**Prof. CAMERON** - So you can't make eye contact.

**Ms FORREST** - That's right, exactly.

**Ms DEVESON** - Two of our researchers have just published a book called *Driver Distraction*.

**Ms MITSOPOULOS-RUBENS** - In your understanding of the sorts of influences that passengers can have on you I think you are just talking about having that awareness. There are many people out there not aware of the sorts of influences that passengers or what effects the introduction of certain devices into the vehicles can have. A lot of people think that this is for other people. Bans on mobile phones in vehicles applies to other people, not to me. So there is this sort of optimism bias out there as well. I think it is about increasing awareness, first and foremost, and then through research getting a better understanding of the effects these technological devices have in the vehicle and then doing something about it on the basis of what is found.

**Ms FORREST** - So there should not be a ban on mobile phones at this stage and we need the research to back it up first?

**Dr LOGAN** - Practicalities of the ban would be very difficult. How would you ever enforce preventing mobile phone usage? It is almost impossible to do.

**Ms MITSOPOULOS-RUBENS** - There are restrictions, certainly in Victoria. It is a tricky one to introduce bans like that. Even with respect to young novice drivers and introducing things such as passenger restrictions is a very difficult one because it is not really favoured by a lot of people. It is not really understood why that sort of restriction could be beneficial.

**Ms FORREST** - We did hear from one witness in relation to that. We were in Tasmania talking about passengers for novice drivers. If you put a young guy in the car who is driving and you put a girl in the car with him, not his sister, then he actually drives a lot better and more safely than if you put another male in the car with him. Then it all goes a bit bad.

**Ms MITSOPOULOS-RUBENS** - There is some research that suggests that is the case. The least safe combination is a young male carrying a young peer male passenger. The most safe combination is probably a female carrying a female or a male carrying a female.

**CHAIR** - Preferably his grandmother.

*Laughter.*

**Ms MITSOPOULOS-RUBENS** - There is an age dynamic as well. This is within a young age group when young people are carrying their peers as passengers. It is a whole different story when you are talking about young people carrying parents or grandparents in the vehicle. It changes the dynamic completely.

**Prof. CAMERON** - It may well be tricky to ban mobile phones from an enforcement perspective but it is certainly a clear-cut issue from a road safety perspective. From that perspective they should be banned.

**CHAIR** - Even with the car kit, hands free?

**Mr LANGFORD** - Yes. There is a marginal safety benefit if you are using a hands-free one compared to a hand-held one but it is a minimal benefit. Both of them are near as dammit to a four times crash risk, so the best research says. That is driving with a BAC of 0.08 or thereabouts.

**CHAIR** - So it is a greater distraction to converse on a mobile phone hands-free than it is with a passenger?

**Mr LANGFORD** - The general argument, and it is really an argument rather than any empirical finding, is that the nature of the conversation that you get on a mobile telephone by and large is a lot more intense and a lot more focused than with a passenger. For example there was your anecdote that you can handle a conversation with a passenger fine by looking ahead, by not taking in a full range of cues. Very few people tend to do that on a mobile and their distraction occurs not only while the conversation is going on but also before and after the conversation.

**Dr HILLARD** - And the passengers in the vehicle are aware of the environment and what is changing around them.

**Ms FORREST** - So from an enforcement point of view it is very difficult and essentially almost impossible, but from a road safety point of view it is absolutely imperative that this occurs. Do you take that step then and say, 'Okay, no more mobile phone use in the car regardless of whether it is hands-free or not.' That would send a clear message to drivers that that is what we are doing and then enforcement is another issue. Do you think that is the way forward or not?

**Mr LANGFORD** - It is interesting that when I was working in Tassie a lot of our policies were, quite rightly, developed hand-in-hand with the police. Their stance always was that each time you introduce a piece of legislation that cannot be readily enforced you weaken the total legislative structure, and there is strength in that. Certainly with mobile phones if you look at the current ban on hand-held ones that seems to be as violated as

much as it is obeyed. You need only walk the streets of Hobart to see that happening. On the other hand I guess you can argue that having that legislation in place encourages at least a proportion of people to do the right thing and therefore the overall safety benefits are there.

**Ms FORREST** - So another approach, rather than putting in another law that is difficult to enforce and that undermines the legislative structure altogether, is going back to the supplementary police force, like the employers, and saying that when you work in my employment and so on. Parliament could do this as we are employed by the people of Tasmania. If the clerk wanted to ring us and we answered the phone, you can't really sack us but it would send a message in that way rather than trying to enforce it through the law.

**Dr LOGAN** - Like an educational message?

**Ms FORREST** - Yes.

**Dr LOGAN** - And you could do it through a corporate fleets because it is an OH&S issue for them as well. You can encourage them to discourage their employees. We're banned from using mobile phones in cars at all here at the centre as well, so we try to practise what we preach.

**Dr CORBEN** - In my mind at least there is an ethical issue about not telling people. If you withhold it because of the enforcement difficulty you are withholding some really important information to people who would be compliant.

**Ms FORREST** - I can hear the cry from other members of parliament saying that our constituents expect us to be available immediately. We will all have messages on our phones when we go out of here today, people asking where have you been and why didn't you return my call. When I go down the west coast of Tasmania I am out of range most of the time anyway so it is a good excuse. People are reluctant to accept that. They think you should be available. I am sure there are other professions like that - like doctors.

**Prof CAMERON** - Road safety researchers.

*Laughter.*

**Ms FORREST** - You have an excuse for not having it, though, because you have the research to show it.

**Mr HARRISS** - Jim, you would probably be more familiar than most here with condition of our roads. Is there a compelling case to forget about mucking around with 110 kph and the mix between that and 100 given the condition of our roads and just set it at 100? You might be familiar that the Kingborough Council over the last six months or so has had a trial of reducing speeds to 90 kph on sealed roads and 80 on unsealed roads where not marked. The results of that will not be known for a while yet because I do not think the analysis has been made as to any particular outcome. Should we stop stuffing around and go to 100 and be tough about it and not apologise?

**Mr LANGFORD** - Yes. I think by most international standards there would be a minute proportion of the Midland Highway and the Bass Highway that would qualify as 110 kph. It is minute, not even worth trying to work into a speed management system, in my opinion. I can also argue that probably very little of our 100 kph road network anywhere else would be graded at 100 kph, but I guess you walk before you run. I would agree with you entirely that 110 should be dropped off and then go further.

With the Kingborough trial that you are talking about, the bulk of opposition to those lowered speed limits from the local community has been that they have not been lowered enough rather than lowered too far.

**Mr HARRISS** - I have not heard one complaint, and I live in the area, from a resident who has says it is a pain to sit at 90 in our municipality as opposed to somewhere else.

**Ms FORREST** - Is it a fairly high traffic that it has impacted?

**Mr HARRISS** - Yes; on the Channel Highway all way through, which is a residential area these days.

**CHAIR** - And it is winding and fairly narrow in many of the parts?

**Mr HARRISS** - In parts, yes. You could probably drive about 100 but there is no inconvenience at 90.

**Ms FORREST** - Your travel time is probably not impacted because there would be times when you cannot go that speed anyway because of the traffic.

**Mr HARRISS** - In addition to that 100 kph business, that proposition could be supported by the ARRB laser evaluation or analysis of the roads. You could support it by saying, 'These roads are simply not up to standard and here's proof'. DIER have all that information if they really wanted to release it or we could get it if we really wanted it.

**Dr CORBEN** - I support Jim, too, with what he is saying. I have driven recently up the Midland Highway and with that very thing in mind, to have a look at the speed limits versus the quality of the road, and I think what Jim is saying is quite right.

**CHAIR** - And it is rapidly deteriorating, the quality of the road.

**Ms FORREST** - With the Bass Highway, the new sections up there are quite good. If you are going to make that rule of 100 kph you would not want to make them an exception because the south are jealous enough as it is.

*Laughter.*

**Ms FORREST** - Would those roads in Victoria qualify to be at 110? Have you been on the new Bass Highway section between Ulverstone and Penguin?

**Dr CORBEN** - Not recently anyway.

**Mr LANGFORD** - That is pretty much at 110 kph standard, particularly where they have the run-off road protection as well as the central barriers. As you say, it is a very small section and you would not want to be confusing the public with a speed limit just for that bit.

**Dr CORBEN** - If you look at Victorian crash records, our best roads in terms of their design standards in rural areas are the Hume Freeway and the Western Freeway, both national roads, but they have probably got the worst performance in terms of run-off-road crashes, deaths and serious injuries. That is not because the road itself is poor; it is because the roadsides are not of a high enough standard. Once you get off the paved surface you have unsealed shoulders, or if you have sealed shoulders you have trees and embankments and so on. We tend as designers to neglect the quality of the roadsides when we set speed limits.

**Ms FORREST** - When you say 'sealed shoulders' how far is it considered to be a sealed shoulder as opposed to an unsealed shoulder? How far from the white line?

**Dr CORBEN** - It varies quite a bit but I think something in the order of 1.5 to 2 metres.

**Ms FORREST** - Around the back of Wynyard they have recently sealed all the shoulders. There are some sections that certainly would meet that 1.5 to 2 metres but there are several areas that would not.

**Dr CORBEN** - The wider it gets obviously the better opportunity you have to recover if you depart from your lane, but then you do not want to make it so wide that it becomes a pseudo traffic lane so that people start to use it that way as well. You can get improvements of something around 30 per cent to 40 per cent in casualty crashes by sealing shoulders. The difference between that and the next step of putting in roadside barriers is probably a three-fold better performance with the roadside barriers than to go for sealed shoulders. That is what I think distinguishes an approach which is fairly traditional, which is to put in the sealed shoulders, versus a safe system approach where you try to accommodate people's mistakes. You know that people are going to leave their lane at some point in time and at those speeds so unless they have some sort of forgiving flexible barrier then the outcomes will be very severe.

**CHAIR** - I would like to raise three points which were raised with me last night. The first does not apply to Tasmania but to Victoria. The gentleman who spoke with me had recently been to New South Wales where trucks are forbidden to be in the right-hand lane of a three-lane section of roadway or four-lane section of roadway. He said that they are not forbidden to be in the right-hand lane in those circumstances in Victoria. Should they be, on the basis that they are obstructing other traffic from going past and should be in the left or middle lane?

**Dr CORBEN** - I am not personally aware of any research that has been done to help distinguish whether the risks are greater by having heavy vehicles in the far right-hand lane. You can put forward opinions about that kind of thing but I am not aware of any robust research on it.



**Prof. CAMERON** - We all have strong opinions on the subject. Anyone who has driven in Europe and in the United States sees that truck-lane discipline is much better than it is here.

**CHAIR** - Forbidding them to be in the right-hand lane?

**Prof. CAMERON** - Yes, the centre lane. Whether it is a demonstrable road safety issue is another matter. I do not think anyone has shown that. It is more of a frustration issue.

**Dr HILLARD** - When they are trying to attack each other and they are both lumbering.

**Dr CORBEN** - Allowing trucks out in the fair right-hand lane leads to more lane changing manoeuvres, by definition. So that then sets up opportunities for crashes and things that might otherwise be minor but can lead to vehicles being pushed off the road at high speed into trees and so on. The other thing is that when you have them in the far right-hand lane they tend to be out there because they want to travel fast. They then tend to then drive at quite short headways between themselves and the vehicles ahead of them. Again, that sets up problems, particularly on busy high-speed roads for pretty severe rear-end collisions as well.

**CHAIR** - I sense that there is a consensus that the New South Wales system would be preferable to the Victorian one, although there is no research done as to the impact on road safety?

**Prof. CAMERON** - Yes, I think there is a consensus on that.

There is a special issue for Melbourne because Melbourne is the biggest container port in Australia. We are all noticing more trucks competing with us on the road system, especially on our freeways and it is very frustrating for Victorian motorists.

**CHAIR** - The second point is that a gentleman noticed in New South Wales that there were a number of electronic signs showing the speed of vehicles approaching them. We have some in Tasmania. They are not used frequently. I would like to ask about the effectiveness of those and the desirability of their being used more frequently.

**Mr LANGFORD** - There is evidence to show that even the advisory signs would increase compliance and reduce speeds. Whether it is cost-effective or not, I do not know. But in terms of impact of travel speeds, it results in greater compliance.

**Dr CORBEN** - These are the speed indicator displays fed back to people as they approach?

**CHAIR** - Yes, to show what their speed it as they approach these signs, to help them comply with the road signs rather than being booked.

**Mr DEAN** - On the road from here to Bathurst I think you have two or three overhead ones; you go under and it tells you the speed.

**Dr CORBEN** - Probably six or seven years ago we did some research on those types of displays. It was based on the results of work done in Switzerland that showed reductions of between four and eight kph as result of using these displays. That, in any speed

setting, is a very significant reduction in crash injury risk. We then went to the next step and tried to forecast what savings and what cost-effectiveness you would get by applying that technology in a number of different settings, from urban setting through to rural freeway settings. Generally the results were very positive. There is a conference paper and report around on that.

**Mr LANGFORD** - If I am remembering it correctly they were particularly effective in specific zones - school zones and work zones, for example, particularly profited from them.

**Dr HILLARD** - The mobile ones tend to be used where a speed limit has been reduced or something has changed or new advisory sign had been put up.

**Ms FORREST** - There is one in Launceston going up the hill towards Hobart if you turn off to go the north-west coast. It is a circle loop and you go underneath and there is a sign there with a recommended speed for the corner. The sign only lights up if you are over that speed, otherwise it does not light up.

**Mr DEAN** - I do not know what the speed is but I went around there at 50 the other day and it told me I was going too fast. I thought I had better turn around and reverse around the damn thing.

*Laughter.*

**CHAIR** - The third one is the policy applied in some places during the Christmas, New Year and Easter holiday periods of double demerit points being awarded for infringements of traffic laws. I invite comment on that.

**Prof. CAMERON** - I have seen weak research evidence that it works; in other words, that you will get greater compliance when you have the double demerits, but I would not go to the wall to say it was good research.

**Mr LANGFORD** - I would agree with Max that the research is weak. It is a good example of what I was cautioning you earlier about increasing the sanctions rather than increasing the perceived risk of detection. Western Australia and New South Wales have done it for that motive. There is a belief that increasing the sanction will change behaviour.

**Ms FORREST** - It is usually long weekends and things like that when it is used. If it were combined with a much greater police presence and campaigns that say, 'We're going to be out there in force with breathalysers, speed checks and the like', would it be a reasonable thing?

**Prof. CAMERON** - It may be but it may also be worth increasing the enforcement even without doubling demerit points, but that is costly. Just bear in mind what you are really trying to achieve.

**Ms FORREST** - Double demerit points can actually increase unless you increase the fines as well. It would be a revenue raising opportunity.

**Prof. CAMERON** - I think the demerit point system has an awful lot going for it because in some places where there are no demerit points associated with camera-detected offences, and New Zealand is a classic example, they do not have the same strength of deterrence.

**Ms FORREST** - They only have a fine?

**Prof. CAMERON** - Yes, they only have a fine and some people can afford to pay the fines. Salary-linked fines are another way to go but there tends to be a resistance to that. The threat of licence loss through demerit points has been one of the key features of Victoria's speed camera program.

**Ms FORREST** - Are you aware whether fines linked to salary have been implemented anywhere?

**Prof. CAMERON** - No, it is a system that is talked about. Scandinavian countries have talked about but -

**Dr LOGAN** - Isn't it done in Finland?

**Prof. CAMERON** - It could be but I do not know for sure.

**Dr LOGAN** - I have not seen any evaluations of it but I think it is done in Finland.

**Dr CORBEN** - I seem to remember our former director, Ian Johnson, saying in relation to double demerit points that it is something of a fallacy that fatalities actually increase around the holiday periods. I have not looked at that but I think he has questioned whether they really do rise or whether they are still at the same level, but somehow the perception with the public is that they are increasing. I think he made the point that unless there is genuine evidence that we are getting a higher incidence of severe crashes that the justification for going to double demerit points is weakened.

**CHAIR** - There would be more people travelling during those periods, and probably longer distances on holidays, so in terms of the number of deaths per kilometres travelled it may not be as great.

**Mr LANGFORD** - You lose all your business travel during the holidays. Depending on where you are in Australia it is half the travel at any given time so in terms of absolute deaths and injuries the holiday periods are usually the safest of the lot. It is only when you start to consider it relative to the number of vehicles on the road that you suddenly see that individual risk per vehicle can quite often be higher, but again probably not as high as peak periods like Friday evenings and Saturday evenings.

**Prof. CAMERON** - We have done research here in Victoria because of concern that the very vigorous speed camera program may be pushing people into licence loss through demerit accumulation. Indeed there have been more people getting to the 10 and 11 points but the ones going to 12 do not seem to be there. They actually learn and drive safer.

In Victoria the demerit points go up with the level of the speeding offence. So for an offence more than 25 kph above the limit it is four demerit points and three for 10 to 24 kph above the limit.

**Ms FORREST** - It is the same in Tasmania, graduated.

**Prof. CAMERON** - I would have guessed it was similar. So if you start doubling those then there is an increased threat but whether it really is productive is a good question. I do not think that anyone knows.

**CHAIR** - No. Well, thank you very much for your views on those three points. They were raised with me last night at the Australian Open by Mr Geoff Pollard, the President of Tennis Australia. I told him that I understood that he would have difficulty meeting with the committee this week because of the responsibility that he has with the Australian Open but I told him that I would take the matter up with our committee.

I appreciate the opportunity of taking it up with all the expertise that is here today. I will convey those views to him as soon as I am able to use the information in the transcript after our report has been presented. Now, off-road motorcycle crashes. That is one subject that we are looking at.

I received a message from an orthopedic surgeon in Launceston by e-mail yesterday, saying last weekend was a very bad weekend at the Launceston General Hospital for a number of injuries caused by off-road use of motor cycles on public land and also on private land.

I do not know if you have done any research on that subject or whether you have views about how they can be controlled and how the number of crashes can be reduced. I would like to open that topic up for discussion.

**Mr CORBEN** - I believe that one of our colleagues has done some research in that area. Does anyone else know of it?

**Prof. CAMERON** - When Lesley was here she left with the chairman, I think, one of the hazard reports that compared on and off-road motorcycling. You have it. This is actually a very good report and very comprehensive on the subject.

**CHAIR** - Thank you for that.

**Prof. CAMERON** - We can provide extra copies if they are wanted.

**CHAIR** - That would be appreciated and then I can send a copy to the orthopedic surgeon I mentioned.

**Prof. CAMERON** - I happen to have read that report because I wanted to pass it on to a young lad I know who does tend to ride motorcycles off road and it does show that particularly for young teenagers there is a real issue there. My motive was to discourage motorcycling in general and off road motor cycling in particular.

**Ms FORREST** - Talking about kids, are you talking about kids who are too young to be licensed?

**Prof. CAMERON** - Yes. It is under normal licensing age. Is it 17 in Tasmania?

**Ms FORREST** - It's !7 to get your Ps; you get your Ls at 16.

**Prof. CAMERON** - This is prior to that age. Motorcycling, I think, is just an inherently dangerous thing to do. All our data shows that. It is regrettable that there are still people who feel the need to do it for their own reasons.

**CHAIR** - There are a lot of young inexperienced people and who sometimes ride cheap trail bikes from overseas, poorly equipped and taking risks.

**Prof. CAMERON** - That report, from memory, does show that the typical off-road motorcyclist is not always wearing a helmet, very seldom wearing protective clothing, riding at excessive speeds on roads that are not designed for it, dirt tracks and so on.

**CHAIR** - It could be controlled to some extent when the riding occurs on public land if police officers or other enforcement officers are there but they are usually not in remote areas. It is more difficult when it occurs on private land and when there are a group of young people riding there. I do not know if anybody has any views on that. I must say that that report looks to be thoroughly detailed and excellent. We appreciate having that so we will formally take that into evidence. I do not know if anybody has views about what should happen to curb the occurrences and trauma on private land.

**Dr CORBEN** - Not so much suggestions about how to tackle it but maybe other sources of information about that particular topic. I do not know if this cropped up in the discussions with VicRoads yesterday but certainly one of the areas of the road safety department at VicRoads has been commissioning research to try to estimate the extent of the problem, because it is a kind of under-reported problem size and whether it is available publicly or not. There is probably a report around about that - the extent and the nature of the problem.

I think also that the Department of Sustainability and Environment - whom you are meeting with tomorrow - have also been trying to develop some programs to manage off-road riding on land that is within their control as well. You might find that a useful discussion and a useful topic to bring up with them. Other than that, I cannot suggest things that you might do as solutions, but I think there is some additional work done in the area.

**CHAIR** - Thanks for that reference, Bruce. We will take that up with them.

**Ms FORREST** - Just on that note, Don, the potential for having an organised and supervised location where you have a one-way track - a dirt track - and preferable for most of these riders in an area where you are not disturbing other people which is probably preferable because a lot of that goes on, do you think there is some merit in that? It is an area set aside for that sort of activity and you would probably need to have the police to have some jurisdiction over it to be sure that people are licensed and their bikes are registered. In Tasmania, MAIB does not cover unlicensed or unregistered crashes as far as their injuries go. Do you think that that would be a possible solution?

**Dr HILLARD** - It depends on the compliance of the riders. We have had some informal discussions with people from DSE and they say when they put barriers across the forest tracks, the riders just incorporate it into their riding.

*Laughter.*

**Dr HILLARD** - They just see it as an extra challenge. If you make it a manicured track, they probably would not use it.

**Ms FORREST** - It would not have the appeal.

**Mr LANGFORD** - If you go back to the safe system principles that most jurisdictions are increasingly accepting, and to pick up on a point that Max brought up earlier where you are trying to manage crash energies, then with the motorcyclists you really do need to get their impact speeds pretty much down to a maximum of about 30 kph. Motorcycles travelling at 30 kph are just total anathema to most motorcyclists.

**Ms FORREST** - Scooters perhaps.

**Mr LANGFORD** - Scooters perhaps, but to suggest that a motorcyclist's chief form of strategy is to avoid an impact speed of more than 30 kph by travelling at roughly that speed, and they have no other protection that their vehicles can offer them, you are really on a hiding to nothing insofar as safety benefits are concerned.

**Ms FORREST** - Those tracks are all rough anyway.

**Mr LANGFORD** - At least they are not mixing with traffic, which is about the best thing you can say for it.

**Ms FORREST** - All the ones we see in Tasmania are head-on. The kids are out in the tracks and there is not a one-way system and they come around a corner and there is the next person.

**Prof. CAMERON** - They have hit another motorcycle head-on, you mean?

**Ms FORREST** - Another motorcyclist, yes.

**Mr HARRISS** - Max, you made the comment that motorcycling is such an inherently dangerous thing but so too is horse riding and water skiing and a whole range of other things. We have a specific term of reference here and acknowledging your comment and agreeing with it, how the heck do you address it from a social perspective when we have a recreational-driven society where we want to get out there and live on the edge, and have some fun?

**Prof. CAMERON** - To put it in perspective, the risk of a casualty crash, in other words being injured and probably admitted to hospital, on a motorcycle per kilometre ridden is about 30 times as high as a car occupant.

Fortunately the risks in both situations are actually quite small, but it is 30 times so probably out of all the motorised transport modes that we know about, it is the one that is most likely to result in death and serious injury.

I am inclined to think that there are two extreme views on this, one is to ban motorcycles entirely and utterly or, secondly, if they wanted to be insured against injury, make them pay for it. But of course the motorcycle lobby have this freedom mentality and so on. You have brought in an extra dimension to say that we do not want to overprotect society or we think we do not want to overprotect society, that people should be free to indulge in risky activities for whatever motive they like, whether it be horse riding, or jet ski riding or whatever. So does that really mean that motorcycling, especially off-road, comes out of the transport responsibility? Does it become more a recreational activity that people should be free to kill and maim themselves just as they are on horses? I do not know. It is a philosophical question.

**CHAIR** - It comes as highly adventurous activity.

**Ms FORREST** - But couldn't you say the same about cars though? Cars are inherently dangerous too. We'll have to go back to the horse and cart.

**Prof. CAMERON** - Indeed you could. But fortunately we are fairly sophisticated in regard to protection in cars.

**Dr HILLARD** - Most motorcyclists would have a car licence as well and you could possibly argue that most motorcyclists would use a car as their primary form of transport. So there might be a commuting aspect or a useful function for the motorcycle but it is ancillary. The primary reason they have a motorcycle is for recreational purposes.

**Dr CORBEN** - I think it becomes increasingly important, given that motorcycle sales and motor scooter sales et cetera, are rising and could be expected in the future that at the very least people understand the risks that they are contemplating either when they are making a purchase or making a choice. I know that amongst motorcycle riders and reps that they are not always keen for that statistic that Max mentioned - the 30 times the risk of a vehicle occupant - to be put out there because it probably does not help so much with promoting riding and so on. But I think people need to understand it in order that they make informed choices and that is very important. Just on the point that Jim makes too, people need to understand that if they having collisions of 30 kph or more, then their risk of severe outcomes rises very rapidly with increasing impact speed. So those two basic statistics I think need to be well understood by people who would consider riding.

**Ms FORREST** - They can only control their speed though, they cannot control the speed of the car coming at them.

**Dr CORBEN** - That is right and that is why motor scooters, with their lower speeds, address part of the problem, but it does not address the speed of the other vehicle or the driver who might be coming at them at a much greater speed.

**Prof. CAMERON** - It was mentioned earlier about Tasmania's vehicle fleet being relatively old. I have no idea whether it is, but I imagine it is. In New Zealand that used to be the case as well. But about a decade ago they started buying second-hand Japanese imports,

cars that in Japan had not survived the emissions tests that are quite strict and after two years people have to get rid of the cars. So the New Zealand Government allowed a lot of those to be imported. They still have very high safety standards but it meant that in fact that use of motorcycles dropped dramatically and it also meant that those former motorcyclists were driving cars which were clearly more advanced technologically in a safety sense than older cars. So there was a net gain all around for two very good reasons. As time has passed, the motorcycling population in New Zealand has revived and the reverse is happening. But they have still had a net gain because the Japanese imports were better than the antiquated cars they did have.

**Ms FORREST** - We were also told that the highest motorcyclist group who are represented in the crash statistics are the older and returning motorcyclists. Do you agree with that?

**Prof. CAMERON** - Yes. That seems to be a nation-wide issue, if not, world-wide.

**Dr CORBEN** - There is quite a bit of research around all that as well, if you want to get more information.

**Ms FORREST** - That being the case, do we need to target the returning motorcyclists particularly because they tend to be older anyway because they have left off for a while and come back? How do suggest that be addressed?

**Dr HILLARD** - Through licensing. I do not know about Tasmania but in Victoria, if you have a motorcycle licence from the age 18 or whatever, the endorsement stays on your licence.

**Ms FORREST** - Even if you are not riding?

**Dr HILLARD** - Even if you are not riding, so there is not requirement for maintaining skills currency et cetera. So there have been various suggestions. One as simple as the fact that you have to request the endorsement rather than it automatically be renewed when you renew your licence, through to some of the more extreme ends like some form of re-testing every 10 years or an extra fee for the endorsement. These are disincentives to make people give up the endorsement if they don't use it.

**Ms MITSOPOULOS-RUBENS** - Basically the returning riders are essentially novice riders; they become novice riders again.

**Dr HILLARD** - Worse than novice riders because they think they are not novices.

**Ms MITSOPOULOS-RUBENS** - That is right. There is also a great discord between the training and licensing process for car drivers and motorcyclists. To be licensed as a motorcycle rider, at least here in Victoria, you do not have to go through as rigorous a process if you are already licensed as a car driver. Just because you might be an experienced car driver that doesn't necessarily make you an experienced rider. You see the roadway differently and your perception of events is quite different as a motorcyclist compared with a driver, so there are other issues there as well.

**Ms FORREST** - In Tasmania, regardless of what experience you might have, to get a motorcycle licence you have to go through the whole motorcycle training.



**Ms MITSOPOULOS-RUBENS** - Okay. I am not entirely up with what the process is for becoming a motorcycle rider but it is certainly not as rigorous as it is for becoming a car driver, at least here in Victoria.

**CHAIR** - It used to be the reverse in Tasmania because they had a course of instruction, I think, of over three months for motorcycle riders.

**Ms MITSOPOULOS-RUBENS** - Was there an on-road component?

**CHAIR** - Yes. It was training to operate the motorcycle and lectures about safety and how to use it and that was highly regarded. That is going back over 20 years. I am not sure what the current situation is. I think they still have that course but I am not sure.

**Ms FORREST** - Yes, they do, but not for that long - a day-long course

**CHAIR** - So it is more rigorous. It has the type of instruction that is lacking in learner drivers of motor vehicles in Tasmania.

**Ms MITSOPOULOS-RUBENS** - Okay, that is interesting.

**Prof. CAMERON** - As Eve says about the returning mature aged ones starting as novices again, maybe those people need to have the same skills training.

**CHAIR** - And if they were getting a new licence they would have to do that. It proved beneficial and that showed up in the statistics for young riders.

**Mr DEAN** - Were you saying you were doing a thesis in relation to novice drivers?

**Ms MITSOPOULOS-RUBENS** - Yes, I am.

**Mr DEAN** - Can we hear a little bit on where you see that going because a lot of evidence has been given to this committee on learner drivers, P-plate drivers, novice drivers?

**Ms MITSOPOULOS-RUBENS** - My background is in psychology and the particular work that I do takes a human factors approach to study road safety. It basically tries to understand the operator or the driver in the road environment and how they interact with the road environment, and on the flip side what can we do about it to address the issue.

The way I view the young driver issue is that first and foremost we can control exposure in terms of reducing the amount of time they spend on the road. We can impact the quality of that exposure. We can impose restrictions on young novice drivers in terms of passenger restrictions, night-time restrictions, and interacting with a mobile phone while driving. There are other issues as well in terms of skill deficits associated with inexperience and also deliberate risk-taking associated with being young, and the motivational influences. My particular interest is in skill deficits associated with inexperience. That is my focus and that is what I try to look at as part of my PhD research. In terms of doing something about it, ignoring exposure for a moment, that has probably more promise than trying to address the youthful component of why young novice drivers are involved in crashes. When we talk about skill deficits we talk about

what sort of training we give young novice drivers to try and accelerate the development of certain skills. Also there is increasing discussion about introducing into the vehicle certain types of safety technologies that might be able to facilitate or aid the young novice drivers given their skill deficits, so there are a number of opportunities there. Also the work done in graduated licensing around the world is quite a good counter measure for young novice drivers as well.

My focus is on skill deficits. I am looking at a particular skill deficit which is called calibration and that is defined very generally as the ability to match task demands with capabilities. So it is about knowing what your capabilities are as a driver. As a young driver it might be knowing that, 'Okay, I am a newly licensed driver, so I may not be able to take in as much information as a more experienced driver'. That is probably not something a lot of young novice drivers think of themselves as having. So it is about having a good awareness of your capabilities and of the task demands. It is about being aware of your environment around you, knowing what constitutes a hazard, knowing that if you are talking a passenger there are certain times when you should just ignore your passenger and focus on the roadway ahead, knowing that interacting with the mobile phone increases the task demands so you might want to do something about mitigating that increase in task demands. Above all, it about being able to match task demands to capabilities to know when you need to make an appropriate modification to your driving performance. If it is pouring with rain it might be that even though you know there is a two-second rule for car following, you need to increase that following distance. It is along those lines that I am interested.

My research sought to compare young novices. Here in Victoria that is 18-21 year olds - the minimum licensing age here in Victoria is 18 - and young novice drivers with less than six months on their Ps. Some research will tell us that the riskiest time for a newly licensed driver is the first six months to a year of licensing, not the learner period but that first year when they get their P plates. That is not just peculiar to Australia; that has been found elsewhere as well. That is why I targeted the very newly licensed drivers. I compared them with older and more experienced drivers - 30-50 year olds with at least 10 years driving. There were some interesting differences that I found with respect to the way that experienced drivers adapt to the task demands. For example, when it comes to car following, novice drivers will have a tendency to adopt the two-second rule no matter what, whereas experienced drivers are more likely to adapt according to the task demands. So they will drop off and accept a larger following distance in more difficult situations. This is actually consistent with what we know about the development of skills, that people go through a process. This is not only about learning driving skill. People go through a process where they are very reliant on what their instructor might tell them early on. Then they go through a phase which is very rule-based, so they take on board rules of thumb like the two-second rule. Then we move into a phase where we are able to adapt ourselves to the task demands and we become a little more metacognitively aware. It is about having an awareness of what is going on and being able to adapt yourself to the task demands. That is an area that young novice drivers are not very good at yet because of their inexperience and lack of experience with different types of driving environments. For me, in terms of what I want to do with all of that research, it has implications for driver training. Something I would like to look at is developing some sort of in-vehicle safety technology that would facilitate deficiencies in calibration and put that into the vehicle. There is research being done in the United States where they have put in a drive cam - it is basically a video camera in the car - and

when the driver hits a particular threshold - I can't remember what the exact thresholds are, but there is some literature on it - he sees a little flashing light so he knows that he has committed some sort of bad thing.

**Dr LOGAN** - It is when they do an extreme manoeuvre - it is related to braking and steering input.

**Ms MITSOPOULOS-RUBENS** - It's a number of things - speed exceedences, travelling too close to the car in front. They basically notify the driver that they have done something wrong there. A lot of the time it is a lack of understanding of what is going on. You don't know that you have done something wrong.

**Ms FORREST** - Is it aimed at being a temporary thing that's put in the car for the first 12 months or whatever? Is it like a step-down process with the supervising person beside you and you have the video camera that can electronically warn you?

**Ms MITSOPOULOS-RUBENS** - Exactly. What happens is at the end of every week the parents of the novice driver get sent a report card, which basically summarises all the bad things they did during the week. The idea is that the parent and their son or daughter are supposed to sit down and discuss it.

**CHAIR** - I thought statistics showed that the risk period extended up to the age of about 25 because the accident rate for novice younger drivers is very high in the 17-25 age bracket, well beyond the six months I would have thought.

**Ms MITSOPOULOS-RUBENS** - It certainly is high relative to your 30- to 50-year-old age group. It is decreasing but certainly within that first period it is at its highest.

**Mr DEAN** - Did you say that America currently has this technology?

**Ms MITSOPOULOS-RUBENS** - It is testing the technology. They are doing a study. It is based at the University of Iowa's public policy centre. I have some papers on that. It is being led by Dan McGehee, who is at the public policy centre.

**Prof. CAMERON** - Eve, just to interject, is the simulator involved in this research?

**Dr MITSOPOULOS-RUBENS** - In my PhD research, yes, I used the simulator.

**Prof. CAMERON** - Of course it is; I guessed it must have been.

**CHAIR** - Are we going to have a look at that at about 4.30 p.m.

**Prof. CAMERON** - I was going to make that point. As we draw to the end of discussions here, we might send Eve ahead to turn the simulator on.

**Dr MITSOPOULOS-RUBENS** - I will leave a little after 4.30 and that should be fine. Before I go I might cover the housekeeping for the simulator as well whilst everybody is in the one place.

I will finish the point on the work at the University of Iowa. I think first and foremost what they are trying to demonstrate is the role of feedback. There is parental feedback as well. There are two types of feedback, there is the immediate feedback that is delivered by the light stimulus after the person has performed a particular extreme driving manoeuvre and also that delayed feedback where they discuss it with their parents.

An area of increasing popularity with young drivers is making parents more active participants in the training of novice drivers. Parents have been encouraged to play a more active role. We talked earlier about enforcement, and certainly in the States with respect to enforcing things like passenger restrictions and night-time restrictions, there needs to be a role for parents in enforcing those sorts of measures.

In terms of the work that the University of Iowa are doing, I think at the moment they are just trying to understand the effectiveness of certain types of feedback. It is a study that has been going on for a number of years.

**Prof. CAMERON** - It has been found to be effective, hasn't it?

**Dr MITSOPOULOS - RUBENS** - Absolutely.

**Prof. CAMERON** - In the large proportion that people have participated.

**Dr MITSOPOULOS - RUBENS** - Yes.

I read a study very recently that even things like seatbelt compliances have increased. Of course they do not have the high seatbelt compliance that we do here. Seatbelt compliance is one thing that has improved. The data is just starting to come out now. They have a very young licensing age in Iowa; it is 14.

**CHAIR** - Really? What age is a learner's licence?

**Dr MITSOPOULOS-RUBENS** - The issue in Iowa is that there are a lot of farming communities. For young kids their only way to get to school is to be able to drive themselves. So what they have got is this thing called a 'minor licence', which allows them to drive to and from school.

**Mr DEAN** - How would you be rocking up in your Hummer at school at 14?

**Dr MITSOPOULOS-RUBENS** - I know - for us it is hard to understand. But to them the fact that we have licensing ages of 17-18 just seems strange.

**CHAIR** - Retirement age almost.

**Prof. CAMERON** - The US has always had relatively low licensing ages but usually with compulsory pre-driver education.

**CHAIR** - Aaaah, I see.

**Prof. CAMERON** - And that is maybe the situation in Iowa.

**Dr MITSOPOULOS-RUBENS** - Throughout the United States now they have some sort of graduated licensing with some similarities to what we have here in Australia because we have differences across the States. There is graduated licensing in New Zealand as well and also in several jurisdictions in Canada. I think that the situation is a little bit different in Europe, but graduated licensing is an area that tries to tackle issues to do with exposure, to do with skill deficits and to do with being young. It tries to introduce novice drivers to high-risk situations later on in the process. So they start off driving in low-risk situations and once they become more experienced drivers that is when high-risk situations are introduced.

**Prof. CAMERON** - They are constrained out of those high-risk situations by various conditions such as not being able drive at night and low alcohol levels - zero usually.

**Dr MITSOPOULOS-RUBENS** - Absolutely.

**Mr DEAN** - I asked the question earlier about affordability. But you are saying that you do not have any data - there is no costing done to your knowledge?

**Dr MITSOPOULOS-RUBENS** - I am not sure whether that system will eventually be put into the vehicles. They are still evaluating it. At the moment I think that they are exploring the idea of feedback. I am more than happy to forward publications to you on that area.

**CHAIR** - That would be interesting if you would not mind Eve, thank you very much.

**Dr MITSOPOULOS-RUBENS** - I can also give you publications on my PhD, give that a plug.

*Laughter.*

**CHAIR** - We would especially like to have that when you have finished.

**Dr MITSOPOULOS-RUBENS** - You will be invited to the party. It has been a long time coming.

*Laughter.*

**Ms FORREST** - Most PhDs are.

**CHAIR** - I expect you will be finished that before we have finished our report.

**Dr MITSOPOULOS-RUBENS** - I am more than happy to send things to you.

**CHAIR** - You mentioned zero tolerance rates. That is the last point that I wish to raise today. What are the views are about whether the blood alcohol level should remain at .05 or whether it should be reduced or made zero?

**Prof. CAMERON** - Very few countries have anything lower than 0.05. Some of the Scandinavian countries do and even Australia is low by international standards. Most states in the US are at about 0.08 or 0.10. Think carefully about the motive because all

you are really doing making illegal a group of people who are not really a road safety problem at this stage. All the research shows that the risk associated with BAC goes up at about 0.05, except for young drivers, and that justifies the low level used in most Australian States.

**Ms FORREST** - So should we make the penalties greater for those who exceed rather than making the limit lower?

**Prof. CAMERON** - As I was saying before, with the success of random breath testing the residual problem now tends to be the very drunk - the 0.15 and above.

**Ms FORREST** - Should we be more harsh in our treatment of those people?

**Prof. CAMERON** - I think you need a different approach. Perhaps you do need to be more harsh but remember that random breath testing is about raising a perceived risk of being caught. It's not all that great at catching drink-drivers; in fact it is very inefficient. Most policemen can drive around and pick a drink-driver better than they can through random breath testing.

**CHAIR** - But that's random, too, isn't it?

**Prof. CAMERON** - Yes. You could use - and I think Victoria Police are seriously considering it - techniques that are really designed to focus on the locations where the serious drink-drivers are and either using random breath testing or other direct interventions to detect, test and prosecute them. Then comes the question, 'Having done that, what do you do to prevent them doing it again?' - apart from jailing them or impounding their vehicle. Then you get into some very difficult areas and that is where the alcohol lock programs are starting to play a big role, at least in this State.

**Mr LANGFORD** - The argument I have heard at several conferences now is that enforcement of drink-driving is almost its own victim and it's got out those that it is going to get out pretty much. Those who are left really are a problem that is beyond standard enforcement procedures.

**Dr LOGAN** - It is more of a public health problem than a road safety problem.

**Mr LANGFORD** - We could keep it as a road safety problem if we're going to continue to tackle that, and indeed we should, then alcohol interlocks and related technologies are the solution, and probably the only solution.

**Ms FORREST** - If you're going to introduce alcohol interlocks, they're only going to work in the vehicle they are fitted in. If that person chooses to drive another vehicle then you do not have that issue. If the alcohol interlocks were introduced, should it be part of a rehabilitation program that the person has to undergo?

**Mr LANGFORD** - Probably as a short-term measure that may be the solution or partial solution, but to me the argument that makes the most sense is that alcohol interlocks become part of the standard vehicle equipment. You don't have a new car that doesn't have an alcohol interlock. You could extend that argument also to seatbelt interlocks and, if you wanted to be really brave, to the speed governors. Suddenly the three big

killers on our roads are controlled, or will be over about a 12-year period, or 16 years in Tasmania. It doesn't need to be said that no legislature has had the courage to do those things yet.

**Ms FORREST** - You can't legislate against stupidity. If you could take out the capacity to be stupid, in that you take out the capacity to drive when you have been drinking, take out the capacity to go over a certain speed and to drive without a seatbelt, that takes out some of the aspects of stupidity.

**Prof. CAMERON** - What you're really talking about is physical interventions for addressing behavioural problems.

**Ms FORREST** - Are we turning into a 'nanny State', though, doing that?

**Prof. CAMERON** - This is the sort of social and political dimension in itself.

**Mr LANGFORD** - Volvo has gone so far as to come out in public now and say that in 20 years' time anybody driving one of their vehicles will not be killed or seriously injured while driving on the roads. How exactly the hell they have done that I still don't know. They are that confident that they can, as it were, design against stupidity rather than legislating.

**CHAIR** - I hope it won't be like 'No child shall be living in poverty by 2000'.

**Mr DEAN** - You obviously haven't done any research on zero alcohol to drive a vehicle?

**Prof. CAMERON** - Victoria introduced a zero blood alcohol level for novice drivers in three steps. First of all it was the first year, then the first two years, first three years. I think it stopped there. You can show that on each of those steps there were real road safety gains. But the big ones seemed to be after it was extended from one year to two years, when they had to say to themselves, 'I am now captive to not drinking for quite a long period'. That is when they really changed their behaviour. The young people I interact with are very concerned about driving after drinking.

**Ms FORREST** - In my experience with young people that is the case. They know the rules and they think that either you do not drive or you do not drink. They are all good, for all the criticism young people get.

**CHAIR** - Yes, I have found the same with most of them.

**Mr DEAN** - The reason I asked that was that I was listening to an ABC program awhile back now where a medical person was saying that there is no safe level of alcohol in a body to drive a vehicle. He said that even one glass will impact considerably on some people, and that one glass will have an impact, however minor, on any driver. That was the comment he was making on ABC Radio. I do not know if he was right, I have no idea.

**Dr HILLARD** - There is a wide range of human response to a certain amount of alcohol.

**Ms FORREST** - You could say the same about fatigue then. If someone has not been asleep in the last four hours when they get behind a wheel then they are not safe to drive. Four hours is just a figure I plucked out.

**Prof. CAMERON** - It is known that females with low body mass are more susceptible to alcohol than the opposite.

**Dr CORBEN** - I do not know the answer to it but, as Max said, in Scandinavia there is a 0.02 limit.

**Prof. CAMERON** - Yes.

**Dr CORBEN** - It would be interesting to explore whether there is published scientific evidence about why or what the justification was for going to that next step.

**Dr LOGAN** - But 0.02 is the lowest measurable level that they can do with the blood testing so when you get a blood test in hospital it will say less than 0.02 millimils per litre or whatever it is. I think it is about that level so it is the lowest reliably measurable level I think it could potentially be derived from.

**Ms FORREST** - Even on a blood test, is it?

**Dr LOGAN** - Yes.

**Prof. CAMERON** - If I remember correctly, the legislation in New South Wales says 0.02 whereas in Victoria it says zero but of course then there is the measurable accuracy.

**CHAIR** - For provisional licence holders you mean?

**Prof. CAMERON** - Yes.

**Dr CORBEN** - I agree with that and there still may be some evidence around about what benefits you can get from going from, say, 0.05 to 0.02 and probably they are diminishing, but still I would expect -

**Prof. CAMERON** - But coming back to random breath testing, bear in mind that the human population is constantly changing and so is the driving population. There are new people coming in and the new ones that come in tend to be young and novice and they are the ones for whom the existing countermeasures need to continue at their current level, to persuade them not to indulge in these risky behaviours. That does not negate what I was saying earlier about the residual drink drivers being more the alcoholics; they need special attention as well.

**Dr MITSOPOULOS-RUBENS** - I think today's young drivers have not been around in a time when there was not this sort of restriction on alcohol. It is the same with seatbelts as well I guess, certainly for me. I do not remember a time when wearing seatbelts was not compulsory, so it is just something that we all take for granted. With each new generation of young novice drivers that come in there will be new issues. For example, now it is talking on your mobile phone, issues such as alcohol, abusing the blood alcohol



limit. That is why compliance is so good among the young novice drivers because that is what they grew up with.

**Mr DEAN** - The problem with 0.05 is that you get a number of drivers out there - and I guess it is the same here - who say, 'I miscalculated. I thought I could drink four. I drank four and I exceeded' or 'I thought I could have two wines and one light beer', all of this caper and they put that up as a reason for exceeding the limit. They are probably right in what they are saying but it seems to be a limit that they want to reach and still get to be able to drive a vehicle. It is a bit like the speeding limits, isn't it? It is a limit. It is not a challenge to get there; that is your limit and you ought not be trying to get there. You do not feel safe to get there.

**Prof. CAMERON** - Drinking alcohol is a process that you have some sort of long-term control over, it is not like a speed in a car that can fluctuate in some people's situations. I do not think the analogy is all that great actually, I am sorry.

**Ms FORREST** - The other concern is drug use. We were told yesterday I think that only 20 000 tests in Victoria a year are carried out and that they are only carried out in the metropolitan areas, which means I can go out to the country and do what I like, effectively, and drive and not get caught.

**Prof. CAMERON** - The random drug-testing situation is very like random breath testing in the 1970s in that the individual test is very expensive, and the people who recall it say that it was a similar order of magnitude. That is why in the mid-1970s and onwards the amount of random breath testing was quite low.

**Ms FORREST** - Do you think the same will occur with drug testing?

**Prof. CAMERON** - Yes, I think as the testing cost falls we will get more and more of it. I was asked to do something for the Victoria Police, that they could justify doing 100 000 random drug tests right now because of the road trauma savings that would result from that.

**Ms FORREST** - So in Victoria, if a person is involved in a crash where there is a serious injury or death, are they tested for drugs and alcohol in hospital?

**Prof. CAMERON** - No, that used to be the case. There used to be a legislation requiring the blood alcohol test to be taken for any road accident person, even the uninjured presenting at a hospital. But the medical profession objected to that some years ago and it all fell apart.

**Ms FORREST** - On what grounds, do you remember?

**Prof. CAMERON** - I cannot recall, but things like workload.

**Ms FORREST** - Our law in Tasmania is such that it will be taken unless the doctor have the says the patient's life is at risk if you do it. That is the only time they can really say no, because they are taking blood anyway. No person rocks up to A&E with a serious injury who does not get a blood test. They don't actually rock up, they get wheeled in.

**Prof. CAMERON** - You only have to watch any hospital show on TV; they are always taking blood aren't they?

*Laughter.*

**Dr MITSOPOULOS-RUBENS** - I might interrupt at that point. I will head over to the simulator and set things up for you but there are just a few things I need to go through about the simulator. Firstly, anyone who experiences motion sickness as part of their day-to-day life or frequently, is advised not to drive the simulator. It is just a precaution. Also, if you do drive the simulator, some people experience what we call simulator discomfort which does feel a lot like motion sickness. So if you do experience that at any time it could be just an off feeling. There are different symptoms associated. Some people feel a little bit nauseous and some people have upset stomachs. So if anyone at all feels unwell at any time while in the simulator just let me know and we will stop the simulation.

**Ms FORREST** - Do you sign your life away?

**Dr MITSOPOULOS-RUBENS** - You do have to sign your life away I am afraid. If anyone is interested in driving the simulator, before you hop in the car I will just get you to sign a form. You are just signing to say, yes, I have been advised of these risks associated with driving the simulator.

**Mr DEAN** - If we fail it, you are not going to try to take our licences off us?

**Dr MITSOPOULOS-RUBENS** - No, my lips are sealed; I will just sell the video afterwards. No, I would not do that.

*Laughter.*

**Dr MITSOPOULOS-RUBENS** - Also, it is quite cool in the simulator room. You probably will not mind that on a day like today. But if you do find that you do get too cold in you, either pop on a jacket or hop outside for a moment to warm up and you should be fine. So, on that note, I will meet you over at the simulator.

**Prof. CAMERON** - Eve's departure is not meant to bring this session to an end. It is just that she needs that extra 20 minutes to steam up the engines and light the boilers.

What she is really warning you is that the visual cues sometimes do not correspond with the body cues. When we drive a car and go around a corner we feel being pushed to the side and so on. This simulator is not as sophisticated as that, so your mind and body will be out of congruence, and some people react badly to that.

**Mr DEAN** - Jim, you mentioned that you were looking at or doing research in relation to mature persons driving vehicles - older drivers. What are you doing in that area, Jim? What is your research showing, because we know that elderly drivers are involved in probably the more minor accidents, although we have had a number of accidents in Tasmania in recent times where elderly drivers have done some very foolish things by pulling out right in the face of traffic and being killed. There was one between Devonport and Ulverstone recently.

**Ms FORREST** - There was one at Oatlands, too.

**Mr LANGFORD** - What's happening in Australia is happening right around the Western world. We all have the same problem of ageing baby boomers. A lot of our effort has been trying to find out just whether or not that is a problem, and I think increasingly we are coming to a bit of a paradox. On one hand there are a number of older drivers who clearly should not be on the road. They are most obviously the ones who are suffering reasonably advanced dementia, and to a lesser extent some other sort of medical conditions and functional impairments. The other side of the paradox is that, putting those older drivers out there, the remainder are probably the safest driving group on the road, despite the fact they are also the most fragile and the most likely to get injured or killed in a crash. So our research is increasingly focusing on that very small subgroup who shouldn't be driving, whilst at the same time making sure we really don't disadvantage the majority who are perfectly safe to continue driving.

The sorts of things we are coming up with, to give a scattering of bullet points, is that age-based mandatory assessment of the type that's used in Tasmania and New South Wales and other places is effectively a total waste of time. If anything it actually increases the concentration of unsafe drivers on the road. To demonstrate that briefly, Victoria has no older driver licensing policy. When you get a licence in Victoria you've got it for life unless you do something really wrong to bring yourself to the attention of licensing authorities, yet by most measures Victorian older drivers are the safest older drivers in Australia when you compare them to other jurisdictions.

**CHAIR** - If they have some condition that makes them definitely unsafe, is there no control over that? Is there no responsibility on their medical practitioner to report that?

**Mr LANGFORD** - There is a responsibility on the older driver and to a lesser extent a legal responsibility at least on the medical practitioner.

**Ms FORREST** - It's only if the person reports a condition to the medical practitioner.

**Mr LANGFORD** - Or to the licensing authority.

**Ms FORREST** - Yes, but if you have a situation where you've got an essentially healthy older person in their 80s, 90s or whatever, and they develop a visual problem but physically they're well and they think they won't go to the doctor about this and they don't tell anybody, they're not going to be picked up under the lack of testing. Do you think that's a problem in Victoria? You say you've got the safest older drivers.

**Mr LANGFORD** - Two answers to that. They're not going to be picked up in New South Wales or Tasmania either unless they are very extreme. The testing that goes on - and I am intimately familiar with the Tassie one because we've done a lot of research into that - is that medical practitioners in Tasmania will pass them provided the older person has two eyes and two legs and all four of them are functioning pretty well.

**Ms FORREST** - So it's meaningless.

**Mr LANGFORD** - It is meaningless, and in fact it actually gives a false sense of security to the jurisdiction concerned because they're not putting their efforts into what could be effective ways.

**Ms FORREST** - So how do you try to encourage those people, then, because it's a matter of independence. Their partner may be dependent on them for transport; they might be the only driving member of that partnership, or whatever. So how do you encourage them to potentially seek treatment for a curable condition they have and enable them to be a safe driver before they kill themselves in the meantime?

**Mr LANGFORD** - That is the running problem that we have. We have a licensing strategy that we have recommended to the various jurisdictions in Australia and Tassie has trialled it on a couple of occasions. It is that you have essentially an enlightened doer in an older driver project. So you come to the licensing authority's notice because your family, your health care practitioner or whatever has sent that person in not to have their licence necessarily taken away but to come in for an objective and detailed assessment. In just the same way as the family quack would refer an older person on to an ophthalmologist or a heart specialist or something, so too will they refer them on to a driving specialist usually an occupational therapist, and they will do that independently.

**Ms FORREST** - So the OT does the assessment?

**Mr LANGFORD** - Yes, or someone. It depends on what their presenting symptoms might be. If they have a concern with vision then it is probably straight to an ophthalmologist rather than an OT. Our assumption is that by enlisting as a referral source older drivers themselves, their families, their health practitioners we will detect more and safer older drivers than we do with an aged-based mandatory assessment scheme.

**CHAIR** - So which States have that other than Tasmania?

**Mr LANGFORD** - Aged-based mandatory assessment?

**CHAIR** - Yes.

**Mr LANGFORD** - Every State in Australia except for Victoria has some form of aged-based mandatory assessment but Tassie and New South Wales are the most draconian. A number of them don't have the on-road testing. They just require medical or visual examination.

**CHAIR** - I assumed that our system applied nationwide.

**Mr LANGFORD** - No. Every jurisdiction is in some way different.

**CHAIR** - That is something we haven't heard of before which we should now pursue.

**Dr CORBEN** - Can I make another quick comment about the older driver issue? This goes back to some early work that Jim and I and others did in looking at the problem. It is in relation to the potential, I guess, to get better safety performance by improving the standards of road design, particularly at intersections. We found in some of our earlier research that older drivers are much more likely to have crashes at certain types of

intersection. If you look at the road design standards they have generally developed out of a set of assumptions based more on a younger, more able driver and don't necessarily take full account of the difficulty older people have in judging gaps at intersections and in terms of their reaction time and those kinds of things. I guess we saw opportunities through improvements to road design standards to be more accommodating or more forgiving of that declining function of performance with age. I don't know if that has gone very far.

**Mr LANGFORD** - Yes, it has.

**Dr CORBEN** - Good.

**Mr LANGFORD** - We stole from the Americans a whole lot of highway design recommendations, not just for intersections but across the board, that would particularly benefit older drivers and they are increasingly becoming a part of the road design standards in America. They are starting off with intersections and improving the capacity of older drivers to get through them.

**Ms FORREST** - We recently had a death at an intersection on a highway. What sort of recommendations were made or strategies looked at with intersections to make them easier or less risky for older people?

**Mr LANGFORD** - They include, perhaps in order of likely impact, a dedicated lane that the drivers themselves can stop in while they are making a right-hand turn. Roundabouts, particularly in urban areas, are a great idea even though older drivers hate them but they do have a huge impact. Most of the oldies' troubles come with the conflicting traffic streams. So if you can either sequence or separate the different traffic streams then you are improving that.

**Ms FORREST** - They don't like roundabouts because they have trouble getting into them or out of them or both?

**Mr LANGFORD** - It is the physical act of turning. Some of it is novelty; they are simply not accustomed to them as much. Part of it is because the engineers have so fouled up their expectations about roundabouts, with the two-lane and three-lane ones, that they automatically assume all roundabouts are going to be as complex as that, whereas the residential ones are not.

**Ms FORREST** - So that should diminish over time. Eve was saying she cannot remember when seatbelts were not compulsory so as we get people growing up with roundabouts all their lives that should become less of an issue.

**Mr LANGFORD** - That is one that should be.

**Dr HILLARD** - Roundabouts are a lot safer, a lot less severe from an injury point of view, than an intersection. With side to corner impact you get a lot of spinning of the car which, if the occupant is wearing a restraint, puts a heavy loading on their chest. As people age the cartilage in their chest calcifies, so they cannot stand the same sort of deflection and they end up having more fractures. Whereas at a roundabout the angles of impact, if an impact occurs, are far more oblique so it more like a frontal crash.

**Prof. CAMERON** - The centre has considered all these forms of mobile speed enforcement, which I mentioned. As I have also emphasised, you can operate the speed cameras in various ways. One of those ways is to focus the cameras at particular black spot sites. The other is to randomise the scheduling in space and time. That is something that is done in Queensland, for very good reasons.

When it comes to fixed cameras you can operate those in many ways as well but the new technology of point-to-point fixed speed cameras represents a new dimension. This just shows you how the different ways of operating vary even within Australian States as well as in Great Britain. It is interesting that speed cameras are pretty well unknown in North America. They have been tried in some Canadian provinces. In fact, governments have lost their vote in the House because they pushed speed cameras onto the Canadian provinces a bit prematurely. You can see how in New South Wales the cameras are very conspicuous, very obvious, and even in Queensland they are very obvious.

**Mr HARRISS** - Those photographs showing the pavement speed marking must be effective because the sign can sometimes be obscured by a tree or you are focusing on the road and you do not see in your peripheral vision -

**Prof. CAMERON** - I think that is probably true, yes. What we are seeing here is the approach to a fixed-speed camera, and how anyone speeds past it is beyond me but 1 or 2 per cent still do.

**Mr HARRISS** - So isn't there a case then for pavement speed markings on a reasonably consistent basis rather than just once at the start?

**Prof CAMERON** - There is, and as I think Bruce will tell you, that has real problems. The wear and tear on pavement painting is quite extreme and it is not cheap to put down, and it deteriorates rapidly with car traffic over it.

**Mr HARRISS** - What about colour-coding the lines, particularly in built-up areas?

**Prof. CAMERON** - I couldn't comment, it is not my area.

**Ms FORREST** - Motorcyclists claim that the road surface can become slippery where the paint is too.

**Prof. CAMERON** - Yes, that is true as well. This shows you the moving mode radar that I was talking about earlier. I am not sure if it is a technology you use in Tasmania but it has been shown to be very effective on our rural undivided roads.

**Mr DEAN** - In Tasmania they use mobile radar.

**Prof. CAMERON** - That is an example of one that involves intervention with the driver and, of course, that is a traditional way of operating.

This illustrates the point-to-point system. You can see that the vehicle is detected by a camera in two positions. The scale can be any distance apart and the registration number is matched. But as well as that, the speed is measured at the camera site.

After a lot of analysis we arrived at this recommended program. This shows you what I think is quite feasible to do. In Western Australia the current mobile cameras only operate about 3 000 hours a month and this recommendation included tripling that activity on Perth's urban highways - arterial roads - also the use of hand-held lasers in the urban residential streets. When this analysis was done the idea of using fixed speed cameras was used on the Perth freeways.

In rural areas there is more use of the mobile cameras, but in an overt way on the highways, and the moving mode radar on the rural local roads. You can see that when you put all of this together, combined with the evidence of the individual effects on the different levels of crashes, there is a 26 per cent reduction in fatal crashes, 12 per cent in hospital admission crashes and 9 per cent in medically-treated crashes. That translates into these sorts of savings of crashes - these are all per month - and social cost savings of this magnitude versus these program operating costs and a benefit costs ratio of over 10.

In summary, that comes from valuing the crashes in terms of the human capital method. This is the one that our Federal Government proposes but if you use the willingness to pay method, which would be about two or three times the road trauma values, then the benefit of cost ratios are even greater.

It is quite a substantial fine revenue. One should not mention those sorts of things but when governments are looking at funding streams to finance these programs it does become important.

After that analysis that I just showed you was done, a supplementary study looked at point-to-point and we were able to identify 74 links on the freeways, almost entirely in Perth, where this technology, which is quite expensive - some \$4.9 million - for that section with the benefit cost ratio again of above 10. But the method comes into its own when you get into the rural highways - nearly 3 000 kilometres of rural highways could be treated in this way for a cost of \$11.8 million and a very high benefit cost ratio.

I just wanted to illustrate that it is possible to develop a whole package and strategy of speed enforcement to match the different road environments.

**Ms FORREST** - Put a dollar number on it.

**Prof. CAMERON** - Put a dollar number on it in terms of the social benefits but also the revenue streams to government in the short term anyway. I do have to caution you that that revenue stream may die away as speeding behaviour actually improves but, in the short term, it is certainly going to pay for its way for implementation.

**Ms FORREST** - The Government will find other ways to get it, do not worry.

**Prof. CAMERON** - Some jurisdictions then reduce the speed enforcement tolerance, but that is a different issue.

**CHAIR** - Max, would it be possible at some later time for us to have a copy of that total presentation?

**Prof. CAMERON** - Yes, sure.

**CHAIR** - Thank you very much, if Nathan could liaise with your office.

**Prof. CAMERON** - Yes, I can provide that now if we have the memory sticks and things.

**CHAIR** - Thank you very much.

**Prof. CAMERON** - So thank you, Don, and other members of the Tasmanian Parliament for coming and joining us today. We enjoy presenting this sort of thing because, as you can tell, we are very passionate about our research. To be able to convey it to people like yourselves who can really do something about it is a great pleasure to us too.

**CHAIR** - We are very fortunate to be able to hear what you have all been able to tell us at such length and, apart from anything, it has been a great pleasure being with you all. It has been very enjoyable. Thank you.

**THE DISCUSSIONS CONCLUDED.**