ROAD SAFETY COMMITTEE

Inquiry into vehicle safety

Melbourne—6 August 2007

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Dr S. Newstead, Senior Research Fellow, Statistician, Road Safety, Monash University Accident Research Centre; and

Dr D. Logan, Senior Research Fellow, Vehicle Safety Manager, Road Safety, Monash University Accident Research Centre.

The CHAIR—Welcome today to the inquiry for vehicle safety. I do need to tell you—and you have probably heard this before—that all evidence taken at this hearing is protected by parliamentary privilege as provided by the Constitution Act 1975 and further, subject to the provisions of the Parliamentary Committees Act 2003, the Defamation Act 2005, and where applicable the provisions of reciprocal legislation in other Australian states and territories, any comments you make outside the hearing may not be afforded such privilege. We are recording the evidence and we will provide a proof version of the *Hansard* transcript at the earliest opportunity so you can correct it as soon as possible. I would like to now invite you to make your verbal submissions and we will ask the questions as we find appropriate. Over to you.

Prof FILDES—Thank you for the opportunity to be here, firstly to submit to the inquiry but also to be here and make this presentation today. What we will be presenting is a version of the document that was tabled about a week or so ago, but I will not go through that in any great detail. I will really skip through what are some of the highlights and some of the technologies that we think are appropriate for you to consider as part of your inquiry. To formally recognise ourselves I am Prof Brian Fildes. I hold the chair of road safety at Monash [MUARC]; Dr Stuart Newstead.

Dr NEWSTEAD—I am a senior research fellow at MUARC, a statistician, heavily involved in vehicle safety evaluation.

Dr LOGAN—Dr David Logan, vehicle safety manager. I have a background in mechanical engineering.

Prof FILDES—The fourth author, Judith Charlton, will not be joining us this morning. Let me refer to what our submission was addressing, and that is not new to you, of course, that is what the document for the call for submissions identified as the issues that you included in your review. We thought the first approach should be to give you a review of what technologies are currently under development or are starting to appear in cars. You will find in the report there is a fairly extensive range of those technologies; some are little more than ideas at this stage; some have already found their way into some of the vehicles that are offered, not so much in this country but certainly in many other countries.

We thought having done that that the appropriate next step would be to try and identify which are the ones that we feel are the high priority technologies that we should be focusing on, and we will take you through some of those. The other two issues that we thought we could touch on were the strategies—this was one of the calls—to encourage manufacturers to fit leading edge vehicle safety technologies in their vehicles. The fourth point was how can we increase the public's knowledge about vehicle safety and, in doing so, presumably would lead to increased demand for these technologies through buying decisions and so on. We thought they were the issues that we would try and address this morning. Please stop me if there is anything you want clarification on as we go.

The prioritisation procedure that we adopted was really to consider anything for which there was published literature or recent research that we are aware of that has been conducted here or overseas that would suggest that these technologies are likely to be quite effective in terms of reducing fatalities, serious injuries, harm or crashes themselves. Where we could identify that there was some evidence—and of reasonable value to Australia—we classified that as a high priority issue. However, there are a number of technologies that to us and to others would appear to be extremely valuable if they were fitted to cars but because of their newness or the fact that they are still under development, there was really little or no formal studies that had been published that would suggest what level of effectiveness they are likely to give. However, so they do not get ignored, we have classified those as a medium priority but something certainly to keep an eye on.

In terms of the technologies themselves we have really classified them in two categories: those that are aimed at avoiding crashes or primary safety—as most people would know that—or those that are aimed at avoiding injury and to do that through improving the crashworthiness of the vehicle. They are commonly called secondary safety. We have also put in one or two that occasionally get referred to as tertiary measures but I will touch on those at the end.

What are some of the high priority, primary or crash avoidance technologies that we feel are things that should be encouraged in this country? The first one is no surprise to you, it has received a lot of publicity in recent

times, the issue of electronic stability control which is really a form of additional braking that when the driver gets out of control typically in a corner, such as that, the vehicle takes over the control of the vehicle itself and attempts to get the car out of the skid or the situation that the driver has put the car in. This is a technology that is being widely distributed right across the world, more so in Europe, and starting to show signs here in Australia. We would certainly like for that to be encouraged in some way or other.

Dr NEWSTEAD—Could I add here, Brian, that our own evaluation that we have recently completed—and it should be published in about a month or so—indicates in Australia this technology is extremely effective in reducing single vehicle crashes. We estimated about a 60 per cent reduction in single vehicle crashes for four-wheel drives and about 24 per cent for regular passenger vehicles.

The CHAIR—How do you come up with those figures?

Dr NEWSTEAD—We analysed the mass crash data that was available to us and used international standard techniques to try and estimate the relative crash reductions in various crash types.

Mr TREZISE—Stuart, are there figures to say what percentage of cars currently on the road have [ESC]?

Dr NEWSTEAD—It is currently only five per cent or less, but of new cars being sold the fitment rate is only about 30 per cent overall.

Mr KOCH—The difference between our motor vehicle fleet and the four-wheel drive fleet, that is a staggering number you put on the table.

Dr NEWSTEAD—Four-wheel drives have at least double the rollover risk of a regular passenger vehicle which has been well established in a lot of our research and hence the vehicle class that could benefit most from that technology.

Prof FILDES—Those figures are confirmed from overseas evidence as well.

Dr NEWSTEAD—They are very consistent with the US figures that have been found.

The CHAIR—This is of a lot of interest to our committee, especially the [ESC]. There might be a number of questions on this. In terms of when you do that analysis, the severity of the crash and in translation to saving lives, is there any of that data?

Dr NEWSTEAD—ESC is about primary safety measures. It is all about reducing the risk of having a crash in the first place. Our research also indicates that it is slightly more effective on higher severity crashes too which you might expect.

Prof FILDES—The second one that we would certainly also want to encourage, based on some evidence that we have been involved in, is the issue of electronic brake assist. It is a technology that in a sense overrides the driver's reaction in an emergency situation. It senses when the car is in an emergency braking situation. A pedestrian walks out in front of the vehicle or whatever, the driver brakes rapidly, there is two forms of sensing of that but sensing is fairly reliable these days. What the car does, by having an emergency brake capacity already installed will override the driver's braking force and cause the car to stop, even faster than any of us could by purely rapidly braking on the pedal.

Dr LOGAN—It does use the anti-lock braking system, but it responds to the fact that people do not tend to give maximum brake pressure as quickly as what they should do. Often that can be due to the negative feedback that people sometimes feel from the anti-lock braking system there is often a juddering through the brake pedal. The [EBA] automatically applies maximum braking a lot more quickly than what the driver could otherwise.

Mr KOCH—How does it know to do it?

Dr LOGAN—It uses a variety of sensors to detect an impending crash situation. Often they use the speed—if a person takes their foot off the accelerator pedal in conjunction with a brake application beyond a certain threshold. If you brake quickly—it is more the speed of braking, not just the force.

The CHAIR—How do the two technologies communicate with each other because, as I understand it, the ESC automatically applies the braking in a circumstance when you move the steering wheel rapidly and at the same time it is a normal reaction that you would apply the brakes. Is there a communication between the two, or one applies the brake automatically and—

Dr NEWSTEAD—It is a different type of braking in ESC. ESC tends to brake one or another wheel to try and correct an aberrant attitude on the car—oversteer or understeer—whereas EBA is about stopping in a straight line quickly. The technologies are probably related in the sense they are used but they are quite different algorithms on what they are trying to control.

Prof FILDES—Again the evidence on EBA is only starting to come in but certainly from some studies that we have been doing recently, in terms of preventing pedestrian crashes, preventing vehicle collisions where the primary vehicle—the one that is most likely to be affected by EBA—has EBA fitted, then there is likely to be rather impressive benefits.

The CHAIR—Presumably the percentage of cars fitted with the EBA are small as well.

Dr NEWSTEAD—It is small but it is probably slightly higher than ESC.

Prof FILDES—Yes, indeed. It comes, as David was saying, really as part of the ABS package. The third technology, which is really a very old but generally starting to be taken up technology, is something very simple, just getting people to put their headlights on during the daytime, what is commonly called [DRL] or daylight running lamps. Some of the vehicles are currently being manufactured with options for having the car in a DRL phase all the time. For example, one of the Australian built, the Commodore, has an option where if you get out of the vehicle with the headlights on, the headlights will go off automatically. That is an attempt at the daylight running lamps—

The CHAIR—Ford had it as well.

Prof FILDES—Ford, yes. There are others as well. Certainly the studies of effectiveness, mainly coming out of the northern hemisphere countries, suggest that it could be as high as 25 per cent effective.

Mr LEANE—25 per cent effective in doing what?

Dr LOGAN—In reducing crashes, particularly crashes where vehicles are unseen. It is usually intersection crashes and pedestrian crashes, for which it is particularly effective.

Mr TREZISE—The motorbike fraternity were opposed to it—I think they were opposed to it—on the basis that if only they are allowed to have headlights on, they are minimising their chances of not being hit. Is there any substance to that argument?

Prof FILDES—You mean the trade-off between them and vehicles?

Mr TREZISE—Yes.

Prof FILDES—I am not aware that I have seen any evidence. I know countries like Canada and Sweden and a few others have had this mandated now for some time, but I cannot say I have seen any studies that have identified that as a big issue.

Dr LOGAN—I have not read any evidence of increases in motorcycle crashes as a result of DRLs.

Dr NEWSTEAD—This issue really ties in with a study we recently published on the relative crash risk of various vehicle colours, and this could be extremely useful for some of those less conspicuous vehicle

colours as well, and the effectiveness that they quote is about the same as an increased crash risk for certain of the darker coloured vehicles too. It is a bit more that coincidental.

Prof FILDES—The seven to eight per cent effectiveness came from a study in the US in the south. They are not totally ineffective in countries that do not have snow and bad weather.

Mr KOCH—Brian, is there an opportunity of using the technology that Holden and Ford use, if you leave your lights they turn them off, that in some way could be incorporated into these vehicles running around in daylight with headlights on cannot run around with high beams on?

Prof FILDES—Technically it would be possible.

Mr KOCH—It something that should be looked at.

Prof FILDES—Indeed.

Mr KOCH—Motorbikes are one of the biggest culprits, tend to run around on high beam instead of low beam which tends to distract drivers of other vehicles and that would be a safety issue. In fact that could be incorporated into something, I think.

Prof FILDES—I am sure it could be, yes.

Dr LOGAN—A purpose designed daylight running lamp is generally about 80 per cent of the power of a headlight and it is aimed specifically to act as an aid to visibility, rather than aid for the driver to see where they are going, which is what the main purpose of the other beams are. In the short term it is easy to ask people to leave their headlights on, but in the longer term it may be something that you want to encourage; the designing of specific daytime running lamps, as they have done in Sweden and in other countries where it has been mandated.

Mr KOCH—Keep it on low beam, to be more specific than that.

Dr LOGAN—Yes, that is right.

Mr KOCH—I do a lot of country driving confront high beam more and more these days.

Dr NEWSTEAD—A lot of vehicles have light sensing technology in them anyway. You could link up to that—

Dr LOGAN—Technically it is quite easy.

Prof FILDES—The fourth one, one that is coming now in several different forms—this is one form, it comes from Sweden from Saab—is alcohol detection devices. There is the breath type; this one requires the driver to blow into the key before the key will work as an ignition key. There are also other types within the vehicle itself. We have completed a study for Europe looking at what the effectiveness of these devices is likely to be. If you look overall at the total fleet it is very small because the problem is relatively small for the total fleet but it is much larger for particular sectors of the fleet, such as probationary drivers and particularly for recidivist drivers. Studies would suggest that the benefits, if targeted at those groups in particular, would certainly be reasonably substantial in terms of preventing alcohol-involved fatal and serious injury crashes.

The CHAIR—Just on that, I know in a previous study tour that we did, and Saab was talking about that, how does it work then if the driver in question gives that to somebody else that has no alcohol on their breath? Is it programmed to that specific driver or how does that work?

Prof FILDES—I do not believe so, no, and indeed there is no reason that that could not happen. I am not sure about the Saab device but some of them have a five, 10-second recall where you have to go back and retest. It is difficult if the device is the key, of course, because that would mean shutting the car down while you retest it. Most of these devices can be worked around. We were only claiming in those figures about a 25

to 30 per cent effectiveness rate; in other words, 70 per cent of the time the driver would get around it in some way. Even for such low figures—and 17 per cent was our claim for recidivist drivers—if we could get a quarter of them to comply with the key that is still a reasonably sizeable benefit.

Mr TREZISE—Brian, in this case here we are talking about recidivists and is therefore 00, given we have, for example, .05 laws in Victoria, could you envisage somewhere into the future where they could be calibrated to .05 for anybody and say they are fitted to all cars, not only to 00 but .05 preventing people from driving over the limit?

Prof FILDES—Sure. I think you certainly could.

Mr TREZISE—There is further potential in the future for this of technology.

Prof FILDES—The only reason that we have targeted the recidivists and probationary is that when we did the study, looking at the whole population, the benefits were nowhere near cost effective because, as I say, it is really a small problem involving a particular group of people, rather than the majority of motorists. But nevertheless drink-drinking is still a big issue in this country. Obviously we should be thinking of ways of even addressing that. VicRoads will probably talk to you about the effectiveness of their recidivist program.

They were the four that we thought were the most immediate high priority but there are a number of others that we would also like to at least raise as potentials for the future. The first one is getting very close to becoming high priority and that is intelligent speed adaptation. Certainly the technology is there. There have been a number of studies conducted overseas in which they have demonstrated the benefits of such a technology.

There is a paper coming up at the AAAM Conference this year here in Melbourne that is published by Renault and they claim fairly sizeable benefits for some trials that they conducted looking at intelligent speed adaptation. There are a range of types of feedback that you could give to a driver using this technology, from at the one end providing some advice and suggestions to identify when the vehicle is travelling faster than the speed limit in the area that it is travelling in—more a warning device of some kind—right up to making it very difficult for drivers to speed. Again part of the early days in the Vision Zero program, they had positive accelerator pressure applied on some trial vehicles where the vehicle was exceeding the speed limit in that region. It made it much more difficult for the driver to do that. Ultimately you could intervene on the vehicle itself and its performance if it was to persist. It comes at a number of levels. At this stage I am not sure if we could identify what is the appropriate level. Maybe people who have been conducting these studies will be publishing those data soon.

Forward collision warning: it often also gets termed as intelligent speed control. It is really identifying when the vehicle is in a hazardous situation and providing some response to the driver. In fact one of the forms, the next level, of electronic brake assist is autonomous braking. With that technology, the vehicle itself senses when it is in a hazardous situation and automatically applies the brakes, so it is the next step beyond EBA, but it requires some forward collision warning. I know there are difficulties currently in sensing some of those things.

Mr KOCH—Brian, how does that come about when you are driving a car and you may not even be aware of the circumstances, where is the trigger—I assume the driver condition triggers some of this technology.

Prof FILDES—Correct.

Mr KOCH—If they are unaware of what they are confronting what in actual fact brings this into play, especially points 2 and 3?

Prof FILDES—It is the forward collision warning that will initiate the braking and if the driver happens to be not watching the road or whatever and unaware that there is a situation, the car will brake automatically.

Dr LOGAN—In the Mercedes system, which has been in production for a couple of years now, there is a warning initially when the car is approaching a vehicle in front too quickly (following vehicles too closely). It waits until the driver has ignored that for a certain amount of time and then it will start to apply gentle braking and then it will tighten up the belt pretensioners, the belt will tighten, which gives another form of feedback to the driver and it will then apply stronger braking if the driver still has not responded himself by that time. It is a staged process and it gives the driver plenty of time—if they are awake—

Mr KOCH—So it works both ways?

Dr LOGAN—Yes, it does. It should hopefully take them away from whatever distraction is keeping their eyes off the road first, but obviously if they are asleep it will go through that whole process fairly quickly and instigate the braking—

Prof FILDES—There are one or two concerns that the technology manufacturers have with some of these technologies and that is why at this stage they are really only coming out in a trial sense. One of the things that manufacturers are concerned about is that you do not overload the driver with warnings that makes them less interested in the technology or ignore it.

Mr KOCH—Like you have signage.

Prof FILDES—Yes. Until you can get the sensing perfect in that situation it always has that potential. Nevertheless there are a number of systems that we are aware of that have started looking at those processes. Lane departure monitoring is something that is starting to find its way, certainly amongst some of the conference papers that we have been seeing. That is sensing from the lane markings on the road when the vehicle moves out of its own lane. One of the applications for lane departure is as a fatigue monitor because often when you get tired you do tend to drift on the road, but also as a distraction device. If the driver is distracted and the vehicle drifts out of its lane it will give a warning in some form or other, through the seat or as a sound or whatever, to alert the driver to the fact that they have moved out. In terms of its crash benefits, obviously if it can keep the vehicle in the lane that is a clear benefit. If it is to try and stop a vehicle weaving out of the lane into the approaching lane, it would depend on the situation. I am not sure how effective it would be likely to be. By the time the warning was given to the driver, the car would have been in a collision anyway. Certainly as a fatigue monitor and as a distraction monitor it has a lot of potential.

Vision enhancement is a system that has been tried by several manufacturers. I know General Motors, and Ford in the US, have both run such a system. Mercedes Benz have run such a system also in Europe. What it does is to project, usually onto the windscreen in some appropriate area, an enhanced picture of the road ahead. It does that through various sensing means, usually infra-red or through other sensing devices.

The CHAIR—That is a distraction in itself it appears though.

Prof FILDES—Not necessarily. It depends on how it is presented to the driver. You do not present it obviously where you are looking, it usually gets presented either higher, lower or to one side. Again it is a means of providing a clear review of the road ahead. It is interesting that while there has been a number of trials some of the systems have not been adopted as part of their standard features in the vehicle. You would need to ask the manufacturers or the developers of the systems as to whether they are really effective. For night-time driving, particularly, or driving in poor weather—fog, heavy rain—there is some potential there as a benefit.

Mr WELLER—I do a fair bit of country driving and night-time driving and my concern is kangaroos, particularly when I dip my lights. I have no problem seeing them on high beam but if there is another coming and you dip your lights, would this be able to pick it up?

Prof FILDES—That is exactly what the technology is aimed at, and in urban areas for pedestrians. When you have your lights on low beam you have a limited amount of sight distance ahead. Most people at night-time drive beyond their sight distance at night on low beam. What this is giving you is an enhanced view of what is on the road ahead and it could be a pedestrian or a kangaroo or whatever.

Dr LOGAN—The manufacturers claim a range of about 200 to 300 metres which is probably as good as a high beam. When you drop it to low beam you should still be able to see warm objects 200 to 300 metres away.

Prof FILDES—The head-up display, which is the issue about presenting another display on the windscreen, has been around for a long time but there are very few of them you see of them in production. It is an interesting question as to whether it is as effective as it could be, but at least it is keeping the driver's view about the top of the dashboard which, as a potential distraction device, is I would think ideally quite a good system.

Mr TREZISE—I might be behind the times but have we resolved the age-old problem of the blind spot on the right-hand side mirrors.

Prof FILDES—In overtaking? Some of the mirrors are probably better but I was reading something recently about some of the new sensors that are being talked about—I do not know if they are under development. You can get sensing for just about anything in a vehicle if you wish. Is it going to be of benefit, well, it would depend if it is used. Again it is probably a bit like lane departure warnings, that if the warning is to stop you pulling out after you have pulled out, then it is probably too late in terms of preventing a collision. That is really what lane departure is doing, but certainly there are a number of sensors—those technologies and the earlier ones will call on various forms of sensing. The last one, reversing rear impact warning, is one that is now starting to find its way into cars, more for parking than what we would like to see.

One of the problems we have seen—we have certainly had it here in Victoria—young children being hit by vehicles backing out of driveway, particularly high-backed vehicles—SUVs and so on. If we can come up with a clever way of sensing when there is something behind then that has a lot of good potential. I am not sure the current sensors are quite up to it yet. I saw some presentations at a conference a year or so ago showing that under some circumstances they will, but not always. They are not reliable enough yet. Some of the talk is around videoing out the back of the car. I do not know whether any of the vehicles currently have that on board but that is again because they cannot totally rely on these sensors. Certainly there is a good argument for trying to come up with a fairly low cost technology that is effective to do that. Again that is another form of sensing.

Mr WELLER—There is an ad on telly—I do not know what brand it is—where it has a mirror or video at the back.

Dr LOGAN—Ford Territory.

Mr WELLER—Ford Territory, yes.

Prof FILDES—Turning now to secondary safety what can we expect in the area of better protection in our vehicles. I have to say that most of the effort that I observed seems to be more in terms of primary technology these days. There is a general feeling that we are running low in the barrel in terms of technologies for crashworthiness and there is a lot of attention now being directed towards trying to prevent the crash rather than just prevent the injury.

Dr NEWSTEAD—Having said that, a lot of the technology that exists in secondary safety still has not made it into the Australian fleet, so it is a big issue.

Prof FILDES—I do not think we want to give up on secondary safety either. There are some technologies out there that are still worth pursuing but in conjunction perhaps with crash avoidance. One that we would love to see in the whole fleet is curtain airbags. In side impacts there is very little scope for doing very much at all to alleviate the injuries a person is suffering because of the small amount of metal between the impacting object and the occupant. That one seems to offer enormous benefits in terms of head injury protection. As we all know, head injury is one of the greatest sources of injury that we experience in car crashes and certainly the least injury that anyone wants to sustain in a road accident. We would certainly like to see wider use of side air curtains for improved side impact protection; not just the curtain, it really requires a thorax bag, a bag that will give some protection to the chest as well. A number of these cars—several of

them overseas at least—are now offering both of those airbags. There is an airbag in the door or often in the seat swab itself that will act to give you protection in the chest area, while the curtain will come down to give you head protection as well. It does not only apply in the side impact, it also stays up, unlike a conventional airbag that inflates and then deflates immediately. It does tend to give you some protection in a rollover collision as well—very slow take-up rates in Australia though.

The CHAIR—I think it is less than ESC.

Mr LEANE—Is there a percentage you could say of the fleet on the road at the moment?

Prof FILDES—No idea. It would be very small.

Dr NEWSTEAD—It is probably less than ESCs. It is probably less than five per cent. New vehicle fitment rate is somewhere around 20 to 25 per cent as well. The trouble is all these things are still optional. People do not buy them.

The CHAIR—Just on that, in terms of the costings, so far you've said in terms of the technologies on board and the secondary priorities, is there a costing on that, because currently there is a program that TAC is doing that is advertising really well about How Safe Is Your Car, and highlighting to people that rather than getting the 10-stacker CD maybe you should look at—

Prof FILDES—On what; the cost to fit?

The CHAIR—Yes.

Dr NEWSTEAD—It varies in a lot of the Australian fleet. You can get presumably something like $750 for an enhanced safety package, including those features, up to about $2000, so they are not hugely expensive. The problem is the lower in the market you get—we are talking about some $20,000 cars, the take-up rate in those cars in particular is so small because people are not willing to wear that extra cost differential.

Dr LOGAN—The other problem is the manufacturers are often offering safety features with luxury features as well. You have to buy leather upholstery and the 12-stacker CD with the side airbags.

Dr NEWSTEAD—Yes, there is an example in the Holden Berlina. You have to buy leather seats to get the curtain airbags which I think is very strange.

Prof FILDES—That is certainly a technology that we would like to see greater use of.

Mr WELLER—ESC—I have heard a figure quoted—if it is standard in all cars, if they built it in, it was only $US110 to put ESC in every car. What is set in the price if you were doing side curtain airbags?

Prof FILDES—I would think the side curtain airbags would be dearer than ESC because ESC is an adaptation and extension of an existing system. I have not seen any figures on what the cost of curtains is.

Dr LOGAN—It is probably something only the manufacturers could really comment on because they do their deals and—

Prof FILDES—Or the providers. It would be the level 1 suppliers who would be able to give you that information.

Mr KOCH—Is that the information that should be in the marketplace—I think where Paul is coming from—that we do get some idea of costings of those interventional safety opportunities, something that is pretty well flagged, because a lot of the take-up is a lack of marketing in many ways. It is not availability. Motor companies are marketing it the other way to better their own commercial opportunity but we are about safety and that is an area that we should probably have an idea of what these actual options are worth if it was across the new fleet.

Prof FILDES—The trouble is that they will be marked up at varying levels depending on how keen the manufacturer is to sell. What is the real story is what do they cost to produce? What do they cost from a manufacturer to fit? That is much less than what the marketing value will be.

Mr WELLER—If they were standard in every car it is a lot cheaper.

Prof FILDES—Yes.

Mr TREZISE—Didn't you say that Holden, for example, restrict that so you have to buy—

Dr NEWSTEAD—In certain of their model range too. It is not uncommon for people to do that. They have bundled all the other options.

Prof FILDES—Exactly.

Mr TREZISE—So you would have to buy the leather—

Dr NEWSTEAD—You would have to buy leather chairs to get the curtain airbags which is nonsensical.

Prof FILDES—Anyway, the benefits are fairly substantial. This one again is not a big serious injury issue in terms of severity but it certainly is in terms of incidents, and that is whiplash. There are two technologies that we are aware of that have been developed. Both of them were developed in Sweden, one developed by a consortium of Autoliv and Volvo which is fundamentally a little different to the one that was developed by Saab, but nevertheless both of them aimed at trying to absorb some of the energy involved, particularly in a rear-end collision, by allowing the occupant to go back somewhat in terms of the structure of the seat. How effective they are, I am not sure. They are certainly starting to become available here in some of the cars. I know again the Commodore has the Saab system fitted to it currently. Ford would probably go down the Volvo system, I would imagine.

Dr NEWSTEAD—Volvo, I think.

Prof FILDES—Again, given the high incidence of whiplash as an injury in crashes—the TAC claim that it is a very high proportion of their payouts—there is still really a need to be looking at whiplash or ways of preventing whiplash or soft tissue injuries to the back, particularly in rear-end collisions.

Dr NEWSTEAD—One of the difficulties with this technology too is defining what they are fitting because a lot of the Japanese manufacturers claim to have anti-whiplash seats in their vehicles but they do not tell you anything about how the system works.

Prof FILDES—At least with the two Swedish systems we have some understanding of how they operate.

Mr LEANE—Can you expand on how they operate?

Prof FILDES—That one, the Saab system, the seat—

Dr NEWSTEAD—That is the Volvo system.

Prof FILDES—The Volvo system, I am sorry, yes. That has a link where that orange colour is that gives way under a certain load and allows the seat to go back a little way.

Dr NEWSTEAD—It gives way in two ways: firstly it translates the whole seat backwards and once it is reached, leave it there and it starts to tilt the seat back as well.

Mr LEANE—There are no electronics in that. I would imagine it would be an inexpensive—

Prof FILDES—Both mechanicals, yes.

Dr NEWSTEAD—Both of them are mechanical systems. The Saab system has a pivot in the seat-back. When you go into the seat-back it brings the headrest forward to the back of your head.

Prof FILDES—One thing that we would be remiss if we did not stress is the need to have three-point belts in all positions in cars. It is happening. I do not know if it happening in third row cars at this stage—I do not believe so—the people movers, where there is more than the two rows. It is absolutely essential.

Dr NEWSTEAD—Some of the examples where you find it missing is the centre seat in multi-row vehicles.

Prof FILDES—Yes. We would like to see that across the whole fleet, including buses as well. Some of the medium priority, secondary ones, we certainly see there is some benefit in encouraging—and probably the first one is a relatively new technology; the other two are technologies we would like to see included. The dual stage or what is also called intelligent airbags are airbags that will sense the occupant in the car and the damage that the car is involved in when it is in a collision. One version of them—and there are various versions—will only fire at one level if it senses that the car is only in a moderate severe collision, or if they sense that the occupant is sitting too close to the steering wheel but will then fire at a higher level when the car is involved in a more severe crash. It is really trying to tune the airbag deployment to the severity of the crash and the situation that the driver happens to be in. Luggage retention guards, there is nothing terribly new about those but they are not widely used, I am afraid.

Dr NEWSTEAD—Particularly in SUVs. We have an additional row of optional seats in the back. There is almost never a luggage guard fitted there.

Prof FILDES—Again in a head-on collision, people really do not understand the dangers they put themselves in by having the back end of the station wagon loaded up with equipment with no form of keeping that equipment in that part of the vehicle. The last one is something I am sure you have heard lots about. We do not let it slip. We like to see no bullbars in urban areas.

Mr TREZISE—This committee supported that a couple of years ago, and the old chestnut had been, 'How do you actually implement it.'

Prof FILDES—Exactly.

Mr LANGDON—Particularly people that may live in the urban areas but travel in the bush that need the protection of the bullbars from kangaroos.

Prof FILDES—That is why I say urban areas.

Mr LANGDON—So I have to swap vehicles at Craigieburn, do I?

Mr KOCH—Are you looking at (indistinct) as an urban area? I would have thought you would have.

Prof FILDES—I would be all for a widespread banning of bullbars but I know the farmers have a different view about that. We see the consequences of bullbars when David and his team go out and investigate crashes. There has been a few crashes where we suspect that bullbars played a role in the severe injuries that the occupant in the other vehicle has experienced. We cannot put figures on what it is but we should try and do that one day.

Mr KOCH—Are you collecting figures at all, Brian?

Prof FILDES—We are collecting evidence on the crashes that we investigate. We try and attribute the injuries or what caused the injury to the occupants in those cars.

Mr KOCH—Are they necessarily loss of life accidents?

Prof FILDES—I have seen a couple where there have been loss of life accidents.

Dr LOGAN—They are mostly serious injury in our study though—hospitalised victims only—but we have had a couple of fatalities.

Prof FILDES—It is very difficult because when you look at the side of a car, say a side impact, where it has been hit by something with a bullbar, you can see a clear imprint of the bullbar on the side of the vehicle and you can piece together that that is probably where the occupant's head might have been. Particularly, the one I am thinking about involved a couple of 15-year-old girls who happened to be sitting on that side of the vehicle and their head lined up precisely with the top of the bullbar. You can do it yourself, driving around, when you pull up at a traffic light next to a car with a bullbar have a look where the bullbar is, it is about head level.

Mr WELLER—On four-wheel drives or normal vehicles?

Prof FILDES—Normally on four-wheel drives. We attribute that the person suffered their head injury to contact with a door but, of course, what was pushing the door in was the bullbar.

Mr LEANE—Is there ever any evidence the other way as far as people who are travelling in the country, and unfortunately a kangaroo jumped in front of the car and hit it, or a bull or whatever—

Prof FILDES—We do not see too many bulls.

Mr LEANE—Is there ever any evidence the other way as far as protecting the occupant of that vehicle?

Dr NEWSTEAD—Getting evidence in this circumstance is very difficult because you have to go out and do an actual inspection because nowhere on a vehicle register is a vehicle noted as having a bullbar fitted or not. You have to physically go out and inspect the crash which getting enough data on it or make these statements with such precision is difficult.

Prof FILDES—Do they save the car, I am not sure. I have seen a number of vehicles with bullbars fitted—not always SUVs, sometimes just passenger cars—where the bullbar has clearly struck something—maybe a kangaroo, maybe something else—but it has not prevented damage to the vehicle. It may have minimised the amount of damage.

Mr LEANE—I am saying damage to the occupant, the driver, or the passenger, like an injury.

Prof FILDES—Would it have prevented the injury to the occupant?

Mr LEANE—Injury, yes.

Prof FILDES—I would be very surprised.

Dr LOGAN—I do not think there is much evidence to support that. It may have some effect but I do not think so.

Mr LANGDON—To get a proper handle on this, do you believe bullbars should be part of the registration—like, if the car is installed with a bullbar it should be noted somewhere?

Dr NEWSTEAD—It would certainly help a lot to be able to differentiate the outcomes for a bullbar and non-bullbar if a car is hit.

Mr LANGDON—It might help this committee in years to come.

Dr NEWSTEAD—Yes.

Mr TREZISE—How effective are other technologies—what I know as the 'shoo roo'?

Prof FILDES—The warning device?

Mr TREZISE—Yes.

Prof FILDES—No idea.

Dr NEWSTEAD—Again any assessment of an after-market technology is difficult because we are never really sure (indistinct) or not.

Mr WELLER—Is there any one of you in your research unit who does a lot of country driving on a regular basis or are most of you metropolitan based?

Prof FILDES—Probably our vehicle inspectors would be the ones who do most of the driving. They spend a fair bit of time on the road.

Mr WELLER—All conditions?

Prof FILDES—Yes.

Mr KOCH—Night-time?

Prof FILDES—Yes.

Mr KOCH—I support the question—I do not know who asked. It was probably Paul, was it, or Ian, in relation to 'shoo roos'. I would have thought government agencies such as CFA, SES, and what have you would come to the likes of yourselves as to qualify whether or not—and I know CFA about seven or eight years ago, it was a standard option on non-metropolitan vehicles put a 'shoo roo' on. Now, I do not know what gave them the knowledge to go that far down the track. I assume it is organisations like your own that they would foster that information from. From what you are saying it is obviously not coming from yourselves.

Prof FILDES—It has probably come from the suppliers of the technology, I imagine. Tertiary and other measures that we would like to present to you as well we think would have some benefit. This one is something that is currently on trial—Automatic Crash Notification. It is a system where, when a vehicle is involved in a collision with the appropriate technology on board, the information about the collision is immediately transmitted back to usually a depot somewhere with an operator. It requires certain technology in the car and I will come to that in a moment. It requires GPS obviously so the information can be transmitted back. The information can come at various levels in terms of the severity of the crash, the speed the person was travelling at, the type of crash, and there are various other options as well. What that does is to give immediate notification that there has been a road accident; particularly useful where there are crashes in remote areas.

Mr KOCH—Single vehicle collisions.

Prof FILDES—Single vehicle collisions. Even close to Melbourne, the road up through Mount Slide, for example, now there are barriers all the way along but certainly in the past there have been instances where the vehicle has gone off the side of the road and nobody has known, and the person has spent quite a bit of time before rescue was attempted. This technology would certainly aid that. It would probably aid most crashes, even if it is only a marginal improvement in notification. It also gives the operator, given the appropriate technology, the opportunity to alert the emergency people at the appropriate level. For example, if the car is involved in a severe crash, most of the vehicles fitted with the technology has telephone technology as well. Often the operator will ring the vehicle, see if they can speak to the driver to find out how severe, whether anyone is injured and so on. If they can, often they will allay any fears and alert maybe the standard ambulance procedure if it is required. If they cannot reach the driver and they sense that the vehicle has been in a very severe collision—because one of things, the information, they get back is the crash severity measure

from the car.

That gives them the opportunity to alert a different level of emergency service. Conceivably you could even send out a helicopter if there was a sense—and often that process takes time in the emergency process itself. Again the focus of the system is to try and get the injured person to hospital as quickly as possible. We are told by the medical people that if you could do that within the golden hour (the first hour after the smash), the chance of their recovery is vastly improved. We see that as a really nice, potentially useful technology. Ford and General Motors in the US have both been conducting a trial of this technology. I am not sure if they are both current. I think the General Motors one is still running; probably the Ford one as well. It will be interesting if we can get them to publish some results about how effective it has been. The claim is that if you can achieve this golden hour that there are potential benefits in terms of rehabilitation and immediate treatment to people. Potentially it is a useful technology.

One which is really a crashworthiness measure but aimed particularly at children is better child restraints. Where do I start? In Europe a few years ago they set up a committee to look at ways in which child restraints can be better fitted in cars. They came up with the IsoFIX technology. We have high mis-fitment rates in this country—in most countries in fact—firstly, in terms of getting the child restraint into the vehicle correctly and, secondly, keeping the child in the child restraint correctly. This technology is really aimed at the former, trying to make sure that the child restraint is firmly attached to the vehicle itself. It requires some attachments fitted behind the seat swab which are basically small links. It requires child restraints with that device that is shown there which is really a solid clip that would go in and clip on those bars that would be fitted in the vehicle. Some of the vehicles coming into our country already have the in-vehicle equipment for that.

The CHAIR—Most of the European ones have it already.

Prof FILDES—Yes. What we do not have are the child seats with those devices on. It is an issue that we have been quite unsuccessful in getting some of our child seat experts interested in even considering. I know Australian Standards are looking at it as an option but we do not see very much action coming out of them in terms of trying to promote the use of better ways of fitting the child seat. It still requires a top tether, by the way. It would be a firm three-point attachment.

Dr NEWSTEAD—There is fair evidence that it is fairly easy to retrofit fixed points into older cars too. You could convert older cars specifically.

Prof FILDES—Child seats do a pretty good job when people are serious about them and try and keep their child properly restrained in them. This would do an even better job in terms of making sure that the child seat is firmly part of the vehicle itself. We have done some crash testing both with and without the [ISOFIX] attachment and its greatest benefit is in a side impact. In a front impact the seats perform fairly well, but they do not in a side impact. This would certainly improve that level of protection.

Dr NEWSTEAD—The Australian figures show that still over 70 per cent of applications are either misfitted seat or misfitted child in the seat, so it is still a huge problem. The systems are very unworkable at the moment.

Prof FILDES—People like [RACV] and some of the emergency people and even some of the manufacturers are out there trying to show people how to fit child restraints into cars in a more effective way, but even so, as Stuart says, the mis-fitment rate is still quite high.

Mr LANGDON—Do you think radio advertising would help?

Prof FILDES—We have to have the technology first.

Mr LANGDON—The systems are often too complicated for people to work out.

Prof FILDES—Yes. Just attaching a child seat into a car with a normal seat belt, which is the way that most of them are, can be a bit complicated and not all parents really know what they are doing in terms of fitting them. From that point of view, yes, advertising would help. But this device is fairly fail-proof and it

would certainly go a long way to offering another level of protection for children.

Dr LOGAN—Even a correctly fitted seat belt around a child seat still allows a lot of movement of the seat and a lot of head excursion of the child in a side impact in particular, and that is a correctly fitted one.

Prof FILDES—Again we are not talking about a major crash reduction benefit here but we are talking about our next generation of people and I do not think we can afford to look at it purely from a crash point of view. The event data recorders is something that hopefully we will be seeing in more vehicles. It is an essential part of that one above it, the crash notification system. It is like a black box in a passenger car. It will record a whole lot of information about a crash which hopefully will go a long way towards improving the crashworthiness of cars; gives us access to automatic crash notification; it gives us much better access to our databases—both the police database or the TAC database or whatever. It will provide information—the only way of getting it today is what David and his team does in terms of going out and assessing the extent of damage of a vehicle, making an assessment of how severe the crash was. This gives it to you automatically. It is a valuable piece of information.

Mr KOCH—Driver behaviour?

Prof FILDES—Sometimes, yes. They will record various aspects—it can. They come at various, different levels—braking, acceleration, speed—all of those things.

Dr NEWSTEAD—Whether the brakes were working.

Dr LOGAN—Whether the seat belts were used.

The CHAIR—As I understand it, Saab already have these black boxes in the car, and I assume that other vehicles would also have a similar black box in them.

Prof FILDES—Certainly in the US because they are using it for the automatic crash notification.

The CHAIR—The question was at that stage when we were speaking to Saab was under the freedom of information and civil liberties, accessing that information, and whether that would be allowed in Australia. That was a sticking point for them. In terms of the insurance companies, whether they currently have access to it or not—

Prof FILDES—I do not think so.

The CHAIR—Would you think that would be useful in terms of assessing some of the situations in crashes to have access to such information as the black boxes that exist in the car, or do you think there should be another black box added to the car?

Prof FILDES—The only black box in most vehicles is the airbag module. I cannot think of too many vehicles that already have an event data recorder, other than the ones you have mentioned. We looked at setting up a trial many years ago of getting a few thousand vehicles fitted out with such a device. The legal information that we received at the time was that that would have potential problems. Ford and General Motors in the US—and that is one of the most legally sensitive systems—have this information and they transmit it. They are at least prepared to consider that it is valuable information.

Dr LOGAN—People are still grappling with the legal issues as to who owns the data. It is something that needs to be resolved. The situation is different here from the US, from some conversations I have had recently. I do not think there is any real benefit in having a separate box from the vehicle system. From a technical point of view it is better integrated within the rest of the car because the car is collecting all this information anyway and I do not think it changes it legally, whether it is part of the car or an add-on device. The legal issues surround who owns the data, given that the driver generates it.

Prof FILDES—There are a number of boxes that have been developed at various levels of sophistication. Ultimately it is going to have to come because more and more of the technologies that we have

been talking about require much more monitoring and much more sensing.

The CHAIR—I would have thought that in a case where there is a collision which involved fatalities that police investigating would want to use some of that data.

Prof FILDES—Sure.

Mr KOCH—Only if it is available. David is suggesting it may not be available.

Dr LOGAN—I think it probably would be. If it is there the police would get their hands on it but it is not really for us to comment.

Prof FILDES—The last one is a system that is about to happen in the US. In fact I only heard about it recently at a conference where [NHTSA] have now mandated that all new cars sold in the US have to nominate their star rating under [NCAP]—the USNCAP. We buy our refrigerators with the energy levels, we buy our washing machines with similar labelling, now they are suggesting we should be labelling our cars in a similar way. All new cars sold in the US, where there is an NCAP rating will now have to display that on their vehicle at the point of sale. That comes in I think in September this year. It is a nice way of keeping the profile of safety out there for people who are buying new cars. You can think about it, given that we also have used car safety ratings in this country as well that maybe we could even get the used car dealers required to publish results on used cars also. It is a very worthy technology, if I can use the term.

Dr NEWSTEAD—Well, they have an environmental rating on them, why not add it to the label.

Prof FILDES—Exactly.

Mr LEANE—I imagine if a system like this was introduced it would have to be reviewed annually or bi-annually if this technology is changing and new technology—

Prof FILDES—Yes. There are other issues and I am not sure how NHTSA propose getting around them but when you crash test a car the Australian NCAP system—and correct me if I am wrong if anyone knows—select one model of the vehicle. I believe it is done on a random basis but I am not totally sure of that.

Dr NEWSTEAD—It is supposed to represent the most commonly found—in Europe anyway—specification on the vehicle and I believe the system in Australia is similar.

Prof FILDES—Of course, as Stuart was alluding to earlier, with the leather seat option to get the side airbag, they may not necessarily test the one that is the most safe. The number of stars will reflect the model that they tested, not necessarily the best model in their fleet.

Dr NEWSTEAD—They typically do that. If most people do not option up the safety feature they will not test it on that vehicle.

Prof FILDES—I can see all sorts of squabbles about, 'You've only given us a four-star rating but if you had chosen this model it would have been a five-star.' But nevertheless the NHTSA system relies on NCAP. Whatever the NCAP rating is of that car that is what is going to be displayed on all models of that make.

Mr KOCH—How much time is your research centre is centred around motor vehicles, as in people carrier, sedan-type things, versus transports, versus motorbikes?

Prof FILDES—How much of our?

Mr KOCH—Are most of your efforts in the middle of passenger carriage?

Prof FILDES—Yes.

Mr KOCH—I have one large transport operator who is very keen on safety. I wonder how much of your effort is in that sphere—motorbikes are at the other extreme—or are you more mainline down the middle in relation to—

Prof FILDES—We cover most times of vehicles at the centre. Predominantly our focus would be on passenger cars, either passenger car configurations or SUV configurations. We do some work, we are currently involved in a motorcycle study, an in-depth motorcycle study, for VicRoads as part of—I think it is funded by the Motorcycle Riders Association, but looking at issues related to motorcycle safety. From time to time we do work with the trucking industry. Because we are self-funded research centre we tend to go where the money is because that is the way we fund our research. If people come and ask to address other vehicles, of course, we will. We do work with the ambulance service, for example, in assessing the safety of ambulance vehicles, both current as well as new ones.

Mr KOCH—Is that on a user-pay basis?

Prof FILDES—Yes, they pay for that.

Mr KOCH—That really drives a lot of your research.

Prof FILDES—Correct.

Mr KOCH—If they are willing to foot the bill and you will seek an outcome.

Prof FILDES—Yes. Unfortunately we do not have too many magic fairies out there that give us lots of money to do the things that we would like to do. We try and do as much as we think is appropriate. We always have a filter that whatever money is being offered, how good it is, is it an appropriate piece of research to do. We do not do just anything for which people are prepared to pay.

To turn to the last couple of questions that were raised in your call, 'How do you encourage manufacturers to fit this technology in?' Well, regulation and consumer testing has been the traditional way of doing that—regulation by forcing them; consumer testing by applying more top-down pressure, by getting the consumers to do it. The problem that everyone is facing with this new crash avoidance technology is, how do you assign benefits to crashes that do not happen?

There are some clever ways—and Stuart and his team have been doing some really clever research to try and come up with the benefits of things like ESC and ABS. What you tend to look for are there shifts in crashes that happen as a result of the technology that you might be able to attribute to the technology. Nevertheless there are a whole lot of crashes out there that in future hopefully will not be happening because of some technologies. Given that most of our research is based on crash data it is always going to be very difficult to do that, and then convince the regulators and the consumer testers that it is important. Based on that analysis it is going to be more and more difficult.

Dr NEWSTEAD—We are getting slowly into the issue of collecting exposure data on which to judge these things but it is very difficult because nothing is collected as a standardised system and we have to leverage other things like the registration database to try and work out exposure. It is a very difficult area and it is only just developing.

Prof FILDES—The issue of Beyond NCAP, I am not sure if you are familiar with that or not, but the European NCAP organisation have been looking at what is the next step beyond NCAP because most of the cars now in Europe are getting up around five stars. They are coming up with a concept which I understand has now been accepted by the EuroNCAP board that if manufacturers can become more involved in providing data on the potential benefits of whatever they do to their vehicles, that stands up to scientific evaluation, that they are prepared to start to reward that in some way in terms of the ratings they give their cars. It is an attempt to try and bring the manufacturers into NCAP much more. NCAP started off very much as an in-your-face confrontation system to embarrass those who do not produce safe cars. They believe that they are getting to a stage that it is more appropriate to try and work much more closer with the manufacturers. If any of them

are prepared to come in and lay down on the table evidence that their latest technology is going to provide X reduction in crashes or Y reduction in injuries or whatever and, as I say, it stands up to an independent scientific evaluation then they are prepared to reward that. It is an interesting concept but it is one particularly in the area of crash avoidance that has some potential to lead to some real improvements. In doing so it is not encouraging manufacturers as much because they suddenly become part of the system, but it is offering them some incentives to think about fitting technologies and being more open about how effective they are likely to be.

Dr NEWSTEAD—To add to that, Europe is a long way in front of Australia in that level of cooperation. There is still much more a confrontational style of relationship with Australian NCAP and the manufacturers. That is quite obvious when you look at—NCAP protocol requires if you want to submit a vehicle to a pole side impact test the vehicle manufacturer has to supply the vehicle for the test and that has not happened once in the Australian NCAP program.

Prof FILDES—A lot of our research these days, we are working much closer with the manufacturers in trying to not tell them how to build their cars but to show them the benefits, potential benefits, of doing certain things through our ANCIS program, through various other programs, through the AutoCRC. The manufacturers are much more in tune these days in terms of trying to provide safety. It is also valuable to keep working closely with them, at least giving them the advice that they might then use in terms of designing their next models.

Mr TREZISE—In relation to that, Brian—I guess I know the answer to this—how much do manufacturers share information in relation to technologies or do they still protect the information they have from a commercial point of view?

Prof FILDES—No, in terms of the work that we do, that is really all I can respond to, Ian. They share as much information as they can with us in terms of allowing us to do the work that we do, but in terms of what they are going to fit in their next vehicle, they will never share that with us and certainly will not share it with their competitors either because that is their commercial-in-confidence information. In terms of the work that we do for people like Holden and others, they allow us to publish our results and they do not necessarily interfere in the research process, but how they convert that information into a product is something we would never be privileged to see, nor do we particularly want to be, I do not think, either.

Dr NEWSTEAD—Share technology in a sense in that they often contract the same external supplier to provide that technology whether it be the auto airbags—Bosch—for ESC, they are technology sharing in that way anyway, but how they use it in their own application is very secretive.

Prof FILDES—That is another point related to technology that it is not the manufacturers who are developing the technology, it is the technology suppliers like Bosch and Siemens and all of those people who are doing the development work. When I talk with them about how much they try and estimate the benefits of this technology—nothing. They do not even think about it. Their business is selling technology and that is it. To me that is one of the weaknesses in this whole development right now that they ought to be able to say to a manufacturer, 'Well, do you think this will save you X number of lives or serious injuries,' or something, but all of that does not happen. The manufacturers make their own judgments of that in deciding whether they go for technology X or Y, but the technology suppliers are not providing that information.

Mr KOCH—That would all be cost-driven, I assume, Brian, at the end of the day—market placements.

Prof FILDES—Correct.

Dr NEWSTEAD—Which is why the research process is important in this, because it provides the independent voice of reason.

Prof FILDES—We seem to be getting more and more involved in doing that work. It is really work that they should be doing themselves.

Dr NEWSTEAD—That is an overriding comment for all these technologies. It is really important to be going back all the time and examining their effectiveness and talking about it and having agreement in what the future can bring to research as to underpin all this.

Prof FILDES—The final way, of course, is the obvious: continuing to keep the public informed, getting out at events as much as we can to at least inform people about the likely benefits of all of these technologies. That is a slow and long process, of course.

The CHAIR—In relation to intelligent speed adaptation, obviously we have a program in Victoria which deals with recidivists—people that drink and drive with alcohol interlocks. Do you think this technology could be used for those recidivists and serious offenders in terms of speeding?

Prof FILDES—Yes.

The CHAIR—Could it adjust the program to detect those—especially in the school zones. We have the 40-kilometre school zone program at the moment. All vehicles fitted with this device could automatically slow down to 40 kilometres around those zones. Is that possible?

Prof FILDES—The 'possible' is a question you would need to ask VicRoads but potentially, yes, certainly intelligent speed adaptation is something that could be used in probably much the same way that the drink-drive technology is currently being used for recidivists. I would like to see it widespread.

The CHAIR—Is it expensive, this technology?

Dr NEWSTEAD—It is probably dearer than the alcohol interlocks because there is more involved in putting it in the vehicle.

Prof FILDES—Again if you are doing it fleet-wide it starts to present a possibility. It depends on what level of technology you want to use, but being able to tell the motorist when they have changed speed zones—and some of these devices are purely a warning device on the dashboard that says, 'You've just gone over the speed limit.' That would certainly be a huge help because many people, I do not think, are all that aware of what the speed zone they are travelling in is. They are not all that well marked in some areas.

Mr KOCH—All within 10 K's. They are not using cruise control—

Prof FILDES—Yes. The car I drive has this device that you can set the speed limit and if you exceed that it will give you a feedback device. We know we have the technology, we have the satellites up there, we have the system already logged, we know what the speed limits are across Victoria, going the next step and saying we will provide a feedback device in a car that says, 'Hey, you've just gone over the speed limit.' I think most people would respond to that.

Dr NEWSTEAD—The current system requires you to put that information in. It was automatic so it was easier.

Prof FILDES—Increasing knowledge, well, I am not sure there is much in the way of surprises there. We liked the Stars on Cars system. That is certainly one way of keeping the knowledge out there about car safety. Certainly the TAC websites and places like that are extremely good at providing a medium for that information. As more and more of the results of the studies are published then sites such as the TAC websites should be able to provide that information. People have to log on to have a look at it. You will need to ask them how effective that is; getting as much information out there as often as possible. In all fairness—I have no hard evidence to suspect but people are generally much more informed about cars now than perhaps they were 20 years ago. Part of that is to increase exposure to it through the media. We have to keep that up.

Vehicle order number is another concept that I know in the US they have been playing with. That is again a device at the point of sale that tells the buyer exactly what features that car has on it. I cannot tell you right now whether or not that has been introduced but it was talked about a year or two back; something you might care to ask NHTSA about when you get to met with them. What it does is provide all the details of everything

that is in that vehicle. I know from personal experience when you ask the salesman what features the car has, they do not always know. They will know the obvious but often many of these technologies that we are going to be seeing will be quite subtle. Unless they are fully trained and have a good understanding of each of the cars and the options on the cars that they are selling, there is a real risk that the consumer will never be told what technology is on board. This has some potential for that.

That is all I have to say except as a good researcher, of course, I could not let the opportunity go by without saying that we clearly need more research. The benefit analysis to establish the likely effectiveness of some of these technologies is starting to happen but the technologies are coming out at such a rate that we really ought to know whether they have real potential or just elusive potential. The way we do it is through prospective, which are really estimating what we think the benefits of the technology would be based on the best evidence that we can collect, or retrospective, which is more the work that Stuart and his team do in terms of trying to tease out how effective the technologies have been.

One of the things that does bother me—and others at the centre as well—in terms of these technologies is what their likely effects on the driver are going to be, what are the human factor effects, the [HMI]—human machine interactive—effects? If a driver is faced with a whole lot of responses that they are getting from various sources of technology are they going to be able to handle it? Is it going to become more a hazard than a help? I am not sure we know the answers for that. Will it necessarily suit everybody? What we do for a 20-year-old, is that going to suit somebody who is 80? Probably not.

Mr KOCH—Mobile phone technology tells you that. How much of that is used versus its availability—very little, I suggest.

Prof FILDES—Yes. If a driver is getting the seat vibrated and something whistling at them and so on, is it going to become too much? Is it going to be more, as I say, a hazard than a benefit? I do not think we know the answers to those questions. We have a fairly active HMI group at MUARC and they are looking at single technologies but nobody is really looking at multiple technologies, 'What's the benefits?' I have been in Europe doing some work with the European Commission and that is a big issue in Europe right now as well. If we willy-nilly fit all these technologies to cars, will they all necessarily be the benefit that each one of them in their own right might offer, or will they suddenly become not synergistic but the opposite, whatever that is—hazardous more than beneficial. That is something we would certainly like to see. The issue of consumer tests, I do not know how to handle that. How do we develop a consumer test to predict crashes that do not happen, and give some benefits to the people who are successful at preventing them.

Dr NEWSTEAD—The other role for research is related to the fact that specifying technologies in vehicles is not always sufficient to guarantee you are going to get a safe car either because what you attach all those technologies to in terms of fundamental structures and designs is extremely important as well. The retrospective work is very important for identifying where that system is failing as well. Some of the recent testing of some of the newer products coming out of China is highlighting this, that the structures they are built on are fundamentally inappropriate and the vehicles are disintegrating. It does not matter how many airbags you have, if there is nothing to hold them up it is not going to do much good. Integrated, total safety design is very important as well. That is more subtle than saying a car has this, this and this on it.

Prof FILDES—The technologies, you cannot necessarily tack them on. The car has to be designed around them.

Mr TREZISE—I know we are running out of time but there are a few of us who drive, for example, on the Melbourne Road every day and share it with hundreds of thousands of trucks, most have not got underruns. What is MUARC's position in regards to the fitment of underruns onto trucks? How effective are they?

Dr NEWSTEAD—MUARC has had a strong position for years that they should be mandated on all trucks. If you look at the European scene, they are, and they are very effective. But there seems to be a large reticence in this country to mandate that for some reason; not only a rear underrun, a side underrun and front protection as well. The issue of bullbars is never more prominent than on the front of a truck. We had researchers do work 10 years ago now that showed substantial benefits of particular designs and none of that

has ever been taken up. We know from our own research that hitting a truck is as severe as hitting a tree.

Mr KOCH—A lot of that probably has been taken up by some of your larger transport operators. You do not see the bullbars on—and you can name the top five or six companies in Australia have taken the bullbars off their transport.

Prof FILDES—Some of them are fitting underrun guards. Whether they are the best designs are questionable but—

Mr TREZISE—There are not too many on the Melbourne Road.

Prof FILDES—But the majority of local trucks will not have them.

Dr NEWSTEAD—None of the tray tracks you see with the tray protruding out the back—nothing protecting it at all.

The CHAIR—On behalf of the committee, thank you, Brian, David Stuart. Again it has been a very informative submission.

Prof FILDES—Thank you for the opportunity.

Witnesses withdrew.

Hearing suspended.