ROAD SAFETY COMMITTEE

Inquiry into vehicle safety

Melbourne—29 October 2007

Members

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Witnesses

Mr H. Jackman, ESP Project Manager, Bosch Australia.

The CHAIR—Welcome to the public hearings of the Road Safety Committee's inquiry into vehicle safety. All evidence taken at this hearing is protected by parliamentary privilege as provided by the Constitution Act 1975 and further subject to the provisions of the Parliamentary Committees Act 2003. Having said that any comments you make outside the hearing may not be afforded such privilege. As you can see we are recording today's evidence and a proof version of that transcript will be sent to you at the earliest opportunity so that you can correct it as you see fit.. I would like to just introduce you to the members of parliament: Ian Tresize, Paul Weller, myself John Eren, the deputy chair David Koch, Craig Langdon, our executive officer Alex Douglas and our research officer David Baker. If you would like to start with your full name and the company that you represent and proceed with your presentation.

Mr JACKMAN—Sure. My name is Mark Jackman and I work for Bosch. I am representing Bosch here today, and my role at Bosch is as the team leader of the project management in the chassis systems control department. It is a bit of a mouthful but Bosch designed or nominates the title chassis systems control as the correct category in which to put the stability program or ESP as we call it. One of the prefaces for my presentation today is really just to say that I understand several of you were also guests at our facility in Bosch in Germany. Excuse me if I am doubling up on anything they have done.

Mr WELLER—You have been there?

Mr JACKMAN—I have. I was there for 3½ years working.

Mr WELLER—Why did you come home?

Mr JACKMAN—Well, my wife keeps saying the same thing actually.

Mr WELLER—It is a nice spot.

Mr JACKMAN—Yes, it is lovely.

Slides shown.

Mr JACKMAN—The research and development as you probably gathered from the Germany information is centred in Bosch Germany. Most of the research from the stability control effectiveness is done via European studies. Some of the information you will see today is a bit Eurocentric. You will have to excuse that, but they are also the world leaders in terms of installation rates and maturity of the products. It gives them a very good basis on which to do their question and answer sessions. I heard you talking to Ashley before. In fact Ashley and I were last week working on their 380 project. I am the project manager for that project within Bosch. We were down doing our preliminary drives with their Japanese engineers last week. He and I have worked together on this project for the last few months. One of the key strategies from worldwide is to try and get the understanding of what ESP is. I think the key point of it is when you look at all of these names here, there are different acronyms that are used for ESP around the world. No wonder the public is not really sure what it is when this is one of the intellectual property exercises that the car companies do.

Mr KOCH—In saying that, Mark, why would Mitsubishi be putting up that they are going to put ASC in when you are actually marketing to them ESP?

Mr JACKMAN—Again I think it is driven largely by their development head which is in Japan. It is the same for all of the car companies, by the way, with the exception perhaps of North America where GM North America refers to it as ESC, whereas Holden refers to it as ESP. Holden has decided because of the Australian forces to use their own name, so they

are bucking the trend if you like. The rest of the Australian car companies have used the nomenclature of their home development head. Japan has used ASC for Mitsubishi, but also the same thing occurs in Japan. Nissan refers to it as something different to Toyota who calls it VSC, and Mitsubishi call it ASC.

Mr LANGDON—Do you think that will confuse the general public?

Mr JACKMAN—Fortunately the trend seems to be pointing towards the more or less generic term 'stability control'. So long as the work that is done at least includes that somewhere in the text, if you are using text, or in the sales pitch, if the sales guys are using the sales pitch—and I would imagine that it is in the sales guys interest to try and create a familiarity with the potential buyer of the car by saying, 'This car has this feature, rather than use something which means nothing to them.' They might say 'ASC but it is the same as'—and use the generic term—'ESC'. Now Bosch Australia uses ESP which does not help either sometimes but Bosch was the developer and inventor of ESP in conjunction with DaimlerChrysler hence the—this slide is not there but the actual registered trade mark symbols means that DC uses and owns the trademark term 'ESP'. You will not find anybody else using that which does not help us when we use the ESP symbol but that is also a company directive.

The CHAIR—Is there variance of the different types of this technology?

Mr JACKMAN—Almost certainly, no. The variance lies—and, of course, Bosch is only one of multiple providers worldwide. We have around about 30 per cent of the world market. Of that remaining 70 per cent there are probably three other major players and their systems all use more or less identical technology. They use sensors which are the same as what we have, the basic sensors on each wheel, one on the steering angle, one measuring yaw of the car and then engine feedback sensors, so what is the engine management system doing and what is the driver requesting. Those sorts of feedbacks are almost identical from one company to the other. In the case of our major competitors they are exactly the same as ours. Their system, while it is called something different, does more or less the same thing. We believe ours is tuned a bit better but that is Bosch pride, if you like. Essentially it is the same. I am more than happy—I have done a lot of work with TAC, VicRoads and the RACV here in Victoria and also some of the interstate people with promotion of this technology within Australia and at all times I say that the systems are more or less the same.

It does not really matter to the safety aspect whether you are using a Bosch one or a Contiteves or an Advics or a TRW or any of the other multitude of small suppliers. Essentially the answer to the question is they are the same, even though they are called different things. Sometimes the car company is almost a little bit deceptive in that they try to say, for example, there is one car which calls it dynamic traction control which just means traction control but with no stability control, but they use this term 'dynamic' to try and promote that product and sometimes that can be a little bit misleading, I would imagine, if you are in the showroom and the dealer tells you it is and the showroom sales person encourages you in that direction.

Again I think this is probably a pretty common theme that we believe there are actually three elements to the road safety message. I am sure I am not telling you anything new here: the driver, the road and the vehicle. Our focus today is on the vehicle. This again is some European information that there are about 1.3 million road accidents in Europe which claim around 40,000 lives; in the US it is about 1.9 with similar figures killed; 25 per cent of the accidents involving serious injuries involve skidding or sliding, so you can imagine the car sliding sideways, not necessarily in a straight line; 60 per cent of all fatalities are caused by side impacts due to skidding. If you extrapolate that, the essence is we are trying to stop this skidding or this sideways movement of the car.

There are a couple of different driving safety systems: there are the passive ones which are airbags; seat belts, of course, and headrests which are quite commonly overlooked but are a critical part of safety. Then there are the active systems which involve ABS, traction control and ESP. Again these are not definitive lists, they are just examples of that type of technology. The passive safety systems essentially are ones that take over once the accident has already happened, whereas the active safety systems are ones that try to prevent the accident occurring at all.

This slide is useful in that there are quite a lot of people that do not understand the technology related in ESP, and I will not make this presentation extremely technical but it is important to understand that within every ESP system there are three elements to it: there is an ABS, a traction and an ESP. As you can see by the Venn diagram nature there, the ABS is part of traction. If you have a car—the Commodore was common, it had traction control systems—that will always have an ABS built into it. If you have an ESP it always has TCS and ABS. Sometimes too the marketing brochures like to say it has ESP and ABS, but, well, that is kind of inherent.

Mr KOCH—You cannot have one without the other.

Mr JACKMAN—That is exactly right. The fundamentals of one are the same as the other. The technology looks very similar as well inside the car. Usually people say, 'Can I take out an ABS and put in an ESP?' those sorts of aftermarket type questions, 'Can I plug it in and try and tune it myself?' those sorts of things which are not possible, but at least when you have an understanding of it, it gives that clarity. The time line down the bottom indicates when these systems were first introduced in series production. ESP was first introduced in 1995 on the S class Mercedes, then two years later on the A class Mercedes as a result of the Sweden moose test where a journalist drove the A class and tried to do a moose test which is essentially swerving around a moose and the car actually rolled which Mercedes claimed at the time was an unrepresentative test and put out all sorts of press releases, but at the same time in the background came to Bosch and said, 'You've got six months, give us an ESP on this car.' It was the fastest project we had ever done and up to that point it set the benchmark for worldwide. They made other changes to the car as well. 1995 and then 1997 was really the kick start to having ESP on not just the top of the range cars. We can sort of thank that moose test, if you like, for it coming through the market place as quickly as it has since then.

The CHAIR—Holden had in their Holden range something that was called the RTS—radial tuned suspension.

Mr JACKMAN—Do you want to know what that is?

The CHAIR—Was that linked to the suspension in terms of—

Mr JACKMAN—Essentially that was the first suspension tuning done for radial tyres. Prior it was cross-ply tyres where the actual ply of the tyre went crossways rather than radially. They tuned the suspension to suit radial tyres, because radial tyres were pretty much a major benchmark in handling and tyre quality and also high speeds, so they did not delaminate at high speed. The RTS was really just a tuning acronym. It did make a difference.

The CHAIR—It sounded good.

Mr JACKMAN—They carried that acronym for 15 years or so when no-one even knew what cross-ply tyres were any more—#(tape malfunction)—goes for about three minutes, which I will not bother producing the animation. There is a CD-ROM here which has these animations and more on it if you are interested in the technology.

Mr KOCH—We have actually seen them.

Mr JACKMAN—You have? Great. From an ESP component point of view—just again to make sure that it is clear as to what the contents are—if we start with number 1, I suppose, this is the actual ESP unit and here is the motor on the side. The black part of it is the brains, that is like the computer or the ECU, we call it, electronic control unit, and this is the yaw rate sensor which essentially tells the computer whether or not the car is travelling in a straight direction or twirling or swirling or twisting around its axis. These are one of four sensors. These are the ones that determine exactly how fast each wheel is travelling. They have one of those on each corner. This is the steering angle sensor. This is placed where the steering column runs through this hole and tells the computer exactly what angle the driver has the steering wheel at.

It more or less tells the computer that the driver is travelling in a straight line, the car is also travelling in a straight line, the wheels are all doing the same speed, everything is okay, and when those signals start to separate that is computer when the computer needs to assess and determine whether or not there is anything needed. Of course there is other communication, it talks with the engine management system as well. It says, 'Is the engine in first gear, second gear or third gear? Is it revving really hard?' more or less how stable or what is the driver asking the engine to do.

Mr WELLER—Does that record that?

Mr JACKMAN—It is not a recording system. What it does is it is monitors on 25 Hertz so 25 cycles per second. It is essentially monitoring and then making a decision on whether there is any intervention required; in most cases not, of course.

Mr WELLER—There is no chance of a policeman pulling me up and asking to have a look at my computer and go back and see how fast I was going?

Mr JACKMAN—No. We have had that question and it is always technically possible but of course to add that in at significant expense and the car companies are saying, 'Well, unless we are mandated to do it', whatever. Like most functions the car can do a lot more than it currently can, unless it is something that is deemed to be critical, it does not do that. The basic function of ESP is that it assesses, 'Where does the driver want to go?' It then says, 'Where is the car actually going?' and then it keeps the vehicle travelling in the direction that the driver requests. What I will do is skip this one again. This is just another animation which you have already seen. This is a summary of some of the recent accident investigation studies. All of these, by the way, are available in their full documented format if you need. I did not bring them all with me, of course, but these are ones you can see from the left-hand side of the scheme, [NHTSA] with which I am sure everybody is familiar in North America, did their studies; and then [IIHS] did their study in 04 and updated it in 06, so last year. DaimlerChrysler, Volkswagen—so these are the European studies; the Japanese have done some as well. I believe this sort of study is also under investigation in Australia too. Again I will not go into all of the statistical details but I suppose one of the highlights or one of the most interesting facts is the IIHS study did their first study in 04 and then refreshed it nearly two years later.

The actual effectiveness figures went up so they reassessed the whole criteria with more technical detail, and the effectiveness went up. The original figures were fractionally lower than these ones. Essentially it is saying that there is a 43 per cent reduction in all fatal crashes, which is a huge number. In Victoria I think the claim from David Healey's team was that they have an estimate of up to 40 per cent and that is obviously based on, no-one really knows for sure yet because we just do not have the volume of vehicles out there at the moment. The

other interesting fact is that almost all of these studies are within the ballpark of each other. Even though they have been done on other sides of the world and with quite differing—

Mr KOCH—They line up pretty well.

Mr JACKMAN—They do, yes; not exactly, of course, but reasonably close. The largest impact, of course, is on vehicles—SUVs or what we would call four-wheel drives here where there is a significant rollover potential because of the centre of gravity, the high-sided tyre wall, the suspension types et cetera. Again this is probably already information you already know, but just to give an indication, there is about 260 million vehicles in the EU and about 44,000 fatalities, and these are figures based in 03; more or less the same in the US, so about the same. In China they have around one-tenth of the vehicles, although since then it has probably gone up significantly. They have 2½ times the fatalities, so they have quite a bit of work to do on that front. In Australia, unfortunately, the figures are not quite in the same format but there are around 13½ million vehicles in Australia and around about five fatalities per day.

Mr KOCH—I thought the fatalities in Japan were stronger than 8,000.

Mr JACKMAN—Okay. Maybe that is to be corrected.

Mr KOCH—No, I will be corrected. It is purely on memory.

Mr JACKMAN—This is just an extract from the IIHS study which I think is probably one of the most telling comments that I have come across so far, that essentially what they wrote—and this is a quote from their study summary which says:

> The electronic stability program would reduce the number of all fatal accidents involving vehicles that are not fitted with ESP by 43 per cent.

In other words, if the fleet immediately today had 100 per cent ESP we could expect, according to this study, a 43 per cent reduction in fatalities.

The CHAIR—Do you think the insurance companies would give incentives to those people in terms of their premiums if they fitted ESP?

Mr JACKMAN—They probably should do that. The only group that has even acted in that direction is the [IAG]. Last year in May they introduced, ESP would be considered as a factor in calculating the premiums for the first time. They were the first ones to do it.

The CHAIR—[RACV]?

Mr JACKMAN—IAG is [NRMA] and some others, I cannot remember which. The guy from IAG wanted some of these statistics for their launch because they had a significant launch in New South Wales. Insurance Australia Group has several companies under its umbrella. If you are trying to prepare that information I can give you the contact name, if you like.

Mr TRESIZE—Looking at those figures, 43 per cent is a lot. Really there is an argument for—say, for example, in the late 60s, early 70s, where governments mandated seat belts. How there is not more public debate about these figures and ESC—

Mr LANGDON—Virtually the same.

Mr JACKMAN—The seat belt figures dropped almost that percentage in the first

couple of years, I think, once they got compliance which was the hardest part about it.

Mr LANGDON—My comment is with seat belts you can actually physically see them.

Mr JACKMAN—Yes, you can see them, sorry.

Mr LANGDON—This debate is about technology which no-one can actually physically see.

Mr JACKMAN—Yes.

The CHAIR—It is not something that you have to do something, it just happens when you need it. It is not like a seat belt because the take-up rate in terms of getting people to put the seat belt on, even from today in Europe they are finding it very difficult to get people to wear seat belts. In terms of the safety side of it, this is probably more important than the seat belt.

Mr JACKMAN—Quite right. It is something that—hopefully no-one even knows they have it in their car because it does not come into play, but it only comes into play when it saves your life. Interestingly at the end of every project we have the customers come and drive the cars and make sure they are happy before we do a final release. Sometimes the criticisms during activation are that, 'It's a little bit noisy, we can hear it in the background.' From the layman's point of view, noisy is nothing because usually when it comes in as working you are sliding sideways into an oncoming truck. The fact that you are feeling a bit of pedal feedback and you are hearing a vague noise under the bonnet is probably secondary.

Mr KOCH—Mark, Alex and myself had the opportunity in the anti-rollover at the Ford testing ground in Detroit to experience ESP at its best—or ESC, whatever they use it as—in that pilot work. You could actually feel it pulling the four corners of the vehicle when it was riding on those rails, those outriggers, and it was trying to pull over. In actual fact you could feel those wheels pulling on the individual braking system. It is very effective, and if you put it under enough strain you know what is going on.

Mr JACKMAN—It is extraordinary. Unfortunately, that is one of the hard things, that the only real way to show people how effective it is, is to put them in a car and drive either in that type of example. The best one is—I have been a few times to our winter test proving ground at the Arctic Circle in Sweden and
where you have the frozen lake where they polish the ice, where if you get out of the car it is difficult to stay upright and yet the car will drive in a straight line at 60 kilometres an hour and steer where you want it to go, purely by braking the wheels and keeping the car in line with where you are trying to steer.

Mr KOCH—A bit like a caterpillar that—

Mr JACKMAN—Skid steer, yes. That is essentially what it is doing.

The CHAIR—Can I just ask probably a bit of a clarification? There are varying different answers to this question. I am sure that it is going to vary, depending on the vehicle, depending on the uptake and all that sort of stuff, but what is the cost of having an ESP system in the car?

Mr JACKMAN—The Ford Territory, for example, when it first came out had ESP standard on their all-wheel drive and they made it an option on the two-wheel drive, and they charged $800. That is about the same as several other cars that have now done the same thing.

What has to happen is it has to be tuned for what we call a platform of cars. We tune it for the Territory platform, that type of vehicle, but within that there is multiple variations, of course, when you change significantly suspension, engine characteristics, transmission. Those sorts of things all affect the performance, and it cannot have an unwanted intrusion or people will not like it and they will turn it off. It has to be more or less in the background so that no-one even knows it is working. With Ford, for example, when they introduced the Territory they said, 'We do not know whether we will get the money to be able to sell the $800 add-on to the lower-end cars. We will make it optional and then people have the choice. Then we can promote it and do those sorts of positive advertising things.' In general, the take-up was quite good, even on the rear-wheel drive cars. There has been lots of other cars since—other brands, not just Ford—that have said, 'We will make it an option.'

The ones where it has not been taken up as well is—for example, the Hyundai Getz had it as a $1,200 option but that was on a $15,000 car. As a percentage of purchase price it was much higher than the Ford Territory, whereas the Ford Territory, even the rear-wheel drive which was at the entry end, was still a much lower percentage of purchase price. That was about a $40,000 car rather than a $15,000 car. The key is, it has to be proportional before people will even consider it. In most cases that is a pretty good estimation. Ford obviously has deemed that that is enough for them to be able to cover their costs if they introduce it for that.

Mr KOCH—What would it have been the across the Territory range, 100 per cent, versus the 800, if it was not an option on the two-wheel drives, but right across the range what would the cost of it have been then, in your estimation?

Mr JACKMAN—It depends on what your starting volume is. If you start, for example, with a volume of—with some of the European cars, the Volkswagen Golf, they build a million a year. If they said, 'We are going to have an ESP on every one of those cars,' then you would be talking around about the $AU800 mark. Then if they cut it in half you are talking about 500,000; it would still be about the same because it is such a huge volume that it is able to carry all of those development costs. In Australia we do not have the luxury of those volumes. When you are talking about a Territory which is—at the time they were only producing 40,000 or 50,000 of the Territories, or planning to. If you cut that in half then that makes a much smaller quantity over which to amortise the development costs.

The CHAIR—That is the problem for the local manufacturing industry.

Mr JACKMAN—Of course.

The CHAIR—If we are going to have 80 per cent of those vehicles that we currently import and 20 per cent we currently manufacture, and if the imports are going to be cheaper in fitting the ESP as opposed to local, it is a huge problem.

Mr JACKMAN—Yes. That is a problem for all technologies, not just the safety ones. It is more or less for everything on the car. Those economies of scale are much harder to achieve when you have a market—Mitsubishi is to commended, not just because we work with them but they are dealing from a pretty low base at the moment. For them is it a business case that is a very difficult one to maintain because you are talking about—

Mr KOCH—They're damned if they do and they're damned if they don't.

Mr JACKMAN—Exactly right. If they don't, then they become the only Australian car with a non-ESP or without ASC, for example, and in two years time they will be looking down the barrel of everybody else having it.

Mr KOCH—We are doing that right now, Mark.

Mr JACKMAN—Yes.

Mr KOCH—The marketplace is saying that. If it is not saying it to them, it is saying it to everyone else.

Mr JACKMAN—The critical part of that equation is really that, for them too, they were also about to introduce a car, the Lancer, which had ESP or ASC, and it is not a very good market strategy—or their strategy was that the 380 should be their lead car and therefore it should have at least the option of those technologies that are on the lesser model or the smaller model.

Mr KOCH—On a contra, if you looked at Toyota you would anticipate that it would be on the Corolla range, where it is not, although it is on the Camry range.

Mr JACKMAN—It is on the Corolla but not in Australia.

Mr KOCH—Yes, not in Australia.

Mr JACKMAN—It is also on the Yaris but not in Australia.

Mr KOCH—We really are very interested in Australia around this table.

Mr JACKMAN—I understand, yes. My point is that it is available.

Mr KOCH—We are very concerned with the despecification of imported cars to Australia, and that is a case in point. To me, with the size of the unit sales on Corolla in Australia, for Toyota not to have gone down that track probably says something also.

Mr JACKMAN—Whatever the other specifications are—and I do not know what they are—to bring a Corolla into Australia, for example, obviously you have to be right-hand drive but there are other features on it which have to comply, maybe lighting and other regulations which do not exist elsewhere that they could piggy-back off. Maybe the UK version of the Corolla is different, even though it is right-hand drive and even though the market is more demanding perhaps of stability control over there.

Mr KOCH—The time will come when these manufacturers, as GM have taken the lead in Australia, for instance, of making a world car.

Mr JACKMAN—Exactly.

Mr KOCH—To have a car produced for one continent versus another is something we will shortly remember.

Mr JACKMAN—That the business case points in the other direction, that it is more expensive to remove these features and to despecify, in some cases, than it is to add them. In other words, if you were to have a Corolla and worldwide everybody has stability control then in Australia there would be a business case to say you would not delete it just for Australia.

Mr TREZISE—We heard this morning also that a lot of the ESC or ESP requires tuning to Australian conditions, that is gravel roads. How much tuning is required.

Mr JACKMAN—Perhaps I should qualify that. It does not have to have that tuning for Australian conditions but it makes it less intrusive. The Australian car driver has this preference for being able to drive a car—maybe it is the Australian male who is the main

market, but they like to have this essence of, 'The car can be perfectly safe and stable but I could still, if I wanted to, take it out and go sliding around the corners if I wanted to so I could have a little bit of what feels like vehicle slide.' That is a fine line, to be able to balance that. If you were trying to do it, for example, in a European car and it senses the slide, the tendency with Europeans is to say, 'We must be on ice. Therefore, I am going into very conservative mode now because the car might soon be under duress or might be likely to lose control.' It is something that we as Bosch Australia are being asked by our other Bosch locations around the world, to bring that skill of tuning the car for Australian conditions to other countries because they want to either sell the car here in Australia, so Japan or Korea, or we have this perception that in Australia we have so many gravel roads that we have to be able to cope with that better than any other place in the world.

Mr TREZISE—Is it mainly the gravel roads that we are concerned about, that we are talking about here?

Mr JACKMAN—Yes. In terms of safety, though, the stability control will work equally as well on all surfaces. The greatest impact, of course, is on a surface where it is a low friction, because that is where most drivers—you get used to driving for an hour on a gravel road and then that is when the surprises come, when you swerve to miss the kangaroo or whatever, and that is when you are more likely to lose control, whereas you have a greater margin of error, if you like, on the bitumen where the friction is higher. This is perhaps both a professional and a personal belief, that you could get away with driving most of the European cars in Australia, and if you drive conservatively you could drive for 10 years and never have an ESP intervention. The fact that it is there as a safety net, most people do not die when they drive, so that also falls into the same category. What this technology is good at is providing the safety net, and if it means that the car behaves better on a gravel road, meaning that it does not have unwanted interventions and the traction control is better, in some characteristics it is better to have a little bit of wheel slip so it flicks away the larger stones under the tyres and gets down to something a bit more stable. There is that element of performance too which comes into the decision.

The Australian cars certainly have an advantage in that they are tuned on those road surfaces but we also, by requirement, still have to take all of the Australian cars to Sweden. In December we are flying 13 Commodores over to northern Sweden in an aeroplane, which costs a lot of money, and that is all paid for by the car company. The investment in that is huge to have to do that kind of improving and development work.

Mr KOCH—Is our percentage of unsealed roads greatly different to South America, South Africa, China? I would not have thought so.

Mr JACKMAN—I do not know. The problem being for China and South America and even India—my colleague is here also from India as part of the learning phase of how they will introduce it over there—those developing countries tend to have less fitment rate of ESP. Those functions do not exist. It is less of an issue over there at the moment because they are still trying to get their customers or their car companies to introduce ABS even as step 1.

Mr KOCH—Or seat belts.

Mr JACKMAN—For that matter, yes, too.

Mr KOCH—We appreciate that.

Mr JACKMAN—There is kind of a major step. You are quite right, in that once it comes perhaps 10 years down the track when everybody has this technology as a standard, there will certainly be a look to find parity with our other neighbours. Probably VicRoads

would be able to tell you more about the road surface types than I, but it is certainly important.

The CHAIR—I am going to bring that issue up again because I just see it as a bit of a concern. Obviously manufacturing, is to a certain extent, struggling in Australia, but the fact that you could—because I see it as a disadvantage to the local manufacturers if they have to pay more for your product here because of the volumes that they cannot produce, as opposed to overseas parent companies which can produce those volumes and, therefore, they get it at a cheaper rate. Obviously to save $400 or $500 you might see the local market say, 'I will buy the imported car rather than the local car.' It is a self-defeated purpose. We want the safety feature in the locally manufactured cars but how can we overcome that problem of disadvantage for local manufacturing?

Mr JACKMAN—You are quite right, that if you have a GM Holden, for example, and they are producing a Commodore significant—everybody heard the $1 billion dollar baby, which was the VE Commodore produced last year. I am sure if they were sitting here they would say, 'We need some sort of support to be able to legislate or to do something in that direction.' From Bosch's point of view, a lot of these cars that are coming in to, if you like, replace sales for locally made cars are being produced at a relatively low end. It all has to be about the pull-through element of it. To try and create immediate legislation—you could do what the Americans have done, which introduces it as a mandatory requirement phased in over the next three years, starting next year or the year after.

Mr WELLER—2011 they all have to be—

Mr JACKMAN—2011 it reaches the 100 per cent mark. Given that, it forces it upon them, but they are also one of the biggest markets in the world. If you were to do that in Australia the market then would just go elsewhere. If it has to be legislated, then that is the only way to do it, but there has to be some way first of making sure that the public knows that this is what the system is and this is how it can function. In Victoria they have done a very good job, and part of that has been due to the road safety agencies—VicRoads, TAC and RACV. They have jointly worked together, and Bosch has been part of that and we have dragged the ESP simulator around hither and thither all through Victoria and also interstate. That kind of promotion means that there are very few people now that have not at least heard of the acronym. The next step really has to be up to the car companies to sell what the product is in the showroom. There have been circumstances where in a showroom the person who is selling the car is still not themselves sure about what the technology is and how it works.

Mr KOCH—We do not have any doubt about that.

Mr JACKMAN—I have had some personal experience, which I will not go into, but it can be a situation. I feel for them because they are given a lot of technology and perhaps they just need more backup.

Mr KOCH—They are renumerated on the sale.

Mr JACKMAN—Agreed.

Mr KOCH—At the end of the day—and that is the shortfall in that whole argument.

Mr JACKMAN—Yes.

The CHAIR—From what you are saying, even if it was mandatory that we went down that path—and I am not saying that we will or we will not—the market is not strong enough to reduce anyway. Is that what you are saying?

Mr JACKMAN—I do not think that we would be in a position that—again, this is not something that we in Australia have discussed. I am going a little bit out on a limb here but if we were to make it law—there are other steps before you have to get to that point. It is really the public education level, maybe law comes in as the final straw. In North America it has something to do with a litigious society, that they feel that they should make it mandatory to avoid these sorts of circumstances, but in Australia we are not at that point yet, that we can still go down the marketing road, if you like, to try and give some incentive. Perhaps it is even up to TAC to offer registration discounts, those other things.

The CHAIR—Yes, the insurance companies, TAC and the federal government, all that sort of stuff but at the end of the day it is your company. The parent company has an advantage, to a certain extent, because they are getting your product, the same product, cheaper from you than what local manufacturers get it for.

Mr WELLER—It is not just the price of what they buy, the thing to put on the car. If you have a factory that is putting through 200,000 cars as compared to a factory putting through 20,000, the economy scales in the 200,000 will have a competitive advantage over the ones that are putting through 20,000.

Mr JACKMAN—Every time.

Mr WELLER—There is probably a little bit of difference in what Bosch sell to the smaller ones than the big ones but there will be costs in the manufacturing as well that makes the difference. It is a bit like a bloke milking 80 cows. Being a dairy farmer I will bring it back to basics. If you are milking 80 cows, your per cow management costs are a site greater than someone milking 800 cows. You could have two people managing 800 cows but you are still going to need one person to manage 80 cows. It is the same as when you are putting through 20,000 or 200,000 cars.

The CHAIR—Yes, I realise that.

Mr KOCH—A lesson in economics there in the dairy industry.

The CHAIR—That is fair enough. The market is what it is. You are making the same product.

Mr JACKMAN—Perhaps just to clarify it, Bosch Australia manufactures ESP here in Australia. We are one of only five Bosch locations worldwide that make ESP. We are the only manufacturer of ESP in Australia. One of the reasons why we have it here is because we have an unusual advantage in that we are a technologically advanced country but we are also very close to some of the emerging markets. There is some strength in us continuing to manufacture here but what we make is identical to—within reason, of course; there is some small software changes inside each one for every car and some hardware changes but, essentially, the product looks the same as everywhere else in the world. We try to use the benefits of our global manufacture, if you like, to make sure the product is as economical as possible. However, we are now, like everyone else in Australia, under the global pressure of—for example, when we do a quote for the next model Camry we are not quoting Camry; we are quoting Camry Australia, North America, Japan, China, South Africa and Thailand, these locations. They put all of it together and we have to quote that one bucket of numbers. It used to be that in Australia, 'Please give us a quote for the VZ Commodore,' or whatever it was. Not any more; it is now a global player. The margins get squeezed to zero and you have to make a product decision on whether or not you can advance your product over time.

Mr KOCH—It should be cheaper.

Mr JACKMAN—That is exactly right. That is what is happening. It is now rolling in to being a global product. They combine it together so that it should be like that. That is the advantage in the long term, if you like, of being a global player. If you are not a global player, if you are not quoting to them, then you will not be in the market for very long.

Mr KOCH—It was indicated to us when we were in America that, although legislation has been put in place to mandate the fitting of ESP, the market forces would certainly outrun any legislation in relation to this matter and they believe the take-up would be completed by the end of 2009. Now, competition will be driving a lot of this quite obviously and I am sure in the back of their minds they know that legislation has now been put in place but they are of the strong belief that it would have taken place without legislation. What are your thoughts?

Mr JACKMAN—I would agree that—I do not think it will be at 100 per cent by that stage.

Mr KOCH—That is the numbers they call.

Mr JACKMAN—Okay. It is an interesting perspective because my assumptions would be that there are so many niche manufacturers in the world, you know, sports car manufacturers but companies who make less than 5, 10,000 a year who use America as their market, even internal within America. If they are deemed to manufacturers then they have to comply as well. You literally do not have enough suppliers to be able to do those projects because each project is an 18-month assignment to try and do this work. If that happens then that is terrific, it is already introduced and the government achieves its aim.

Mr KOCH—Certainly.

Mr JACKMAN—I think they were trying to cushion the impact so they did not disadvantage those other—because they are still businesses and they are still spending money in America as anywhere else. 2009 is a pretty good—

The CHAIR—You have here that you estimate that 57 per cent by 2008 but remain at one per cent more until 2013. What you are basically saying is that you estimate that by 2014 only 57 per cent of vehicles will have ESP.

Mr JACKMAN—Is that from our German colleagues, is it?

The CHAIR—Yes.

Mr JACKMAN—Okay. What we have to do is we have to make predictions based on reality and we always have to leave a margin for—if there is a case where we have these niche manufacturers and if there is no legislation then they will cost perhaps a lot more if there is some financial penalty or something like that. It is a bit like when the guys at HSV were asked, 'How you can possibly bring out a seven-litre V8 engine?' The guy said, 'The people who buy our cars aren't interested in petrol prices. It doesn't affect them, they are buying completely a different market,' and the same with safety, the people who are buying some cars are not interested in safety, they are buying it for completely other reasons—whether they do not drive them, whether they are collectors. There is probably going to be a percentage of cars that fall into that category. Then depending on how China goes, when China ramps up, then we might find ourselves in five years time with a huge influx of Chinese vehicles. Even India, I mean, at the moment they are just on the tip of the iceberg in terms of their manufacturing capability. When you have a marketplace with a billion people you can make a car that is pretty low cost. Without legislation there is probably some room

for movement. With this slide I just wanted to demonstrate the world leaders. Sweden and Germany have a 91 per cent and a 75 per cent fitment rate worldwide.

Mr LANGDON—What happened in Sweden, it went from 15 to 69, where Germany has obviously started earlier.

Mr JACKMAN—Yes. I think Sweden took it up later and I do not know for sure, so I cannot say but I think there was some government incentive. I am not sure what it was but I am pretty sure they were providing some sort of an incentive or promotional activity to do that.

Mr LANGDON—Can we find out what that was just as a matter of interest?

Mr JACKMAN—Yes, I can find that out if you like.

Mr LANGDON—Legislation incentive, insurance—#(tape malfunction)

Mr KOCH—15 to 69.

Mr JACKMAN—Yes, 2003, 2004. They also have the necessity because they have so many months of the year in parts of the country that are completely covered by ice.

Mr KOCH—There is a marketing acceptance there —

Mr JACKMAN—Yes, that is right. Again this is just a summary of worldwide installation rates of which Australia is not doing too badly when you consider our normal uptake of technology is well behind the Europeans.

Mr KOCH—We are holding our own.

Mr JACKMAN—The interesting thing is, you have to keep in mind that, for example, in China you can see there is a little '2' here which represents manufacture rather than fitment rates because the data is not available yet in China.

The CHAIR—Apart from that most of their roads are like carparks, isn't it?

Mr JACKMAN—That is quite true and perhaps the technology take-up over there will be less because the average speed is more like 10 kilometres an hour rather than 100. Again this is based on production which is the worldwide forecasts. These figures by the way—our central marketing department in Germany, Sandra Pastore, who I think some of you would have met in Germany, her department collates this. It is such a dynamic environment that every few months they send us another one to say, 'This is the latest one.' It often changes relatively significantly because the forecasts are happening—in Brazil they decide that the ABS fitment rates should be 100 per cent from a certain date, therefore the fitment of sister technologies goes up as well. One of the interesting flow-on effects of the [NHTSA] ruling in North America is that anybody who is obviously exporting to North America has to follow that same regulation.

Mr KOCH—Dead right. Korea is a good example of that. They cannot get a car into America if they do not—importing versus exporting.

Mr JACKMAN—Yes. Again this is the NHTSA ruling, so this is 55 per cent by September 09 and then 75, 95, 100 up to 2011. One of the other worldwide parties is the working party 29 which is the European version of NHTSA or the group trying to make a worldwide impact on the fitment rates. They have agreed at least on a definition of what it is

which always seems to me to be rather amusing. They have worked for two years and they have come up with a definition. We now agree on what ESP is.

Mr KOCH—As members that does not surprise us.

Mr JACKMAN—I will not make any comment to that. One of the important things is in the North American ruling they defined six criteria which say what an ESP system must contain. That is really important, that if there is any thought here in Australia about legislation or rulings it should contain something along those lines. They are fairly basic but it says it uses the brakes to correct the vehicle; it should be computer controlled; it must detect your side acceleration; steering angle sensing; engine torque control and it must operate over a full speed range greater than 15 kilometres an hour. The 15 kilometre an hour limit is purely a range at which we are permitted to do our system self-check test.

The CHAIR—Those six points, could there be other points or is that being refined to a minimum?

Mr JACKMAN—That is the bare minimum. In the NHTSA ruling which runs for about 80 pages or something, essentially they have a section on the system definition. There are other things which it requires. If you look here they say the system must pass this particular test. That is the physical minimum. That is the 'what must it contain', and this is the 'how must it perform' minimum. This is what is called the Sine with Dwell test. It is swerving the car from side to side and then holding it for a period of time. The requirement of that is that the vehicle is allowed to have a rate of yaw. In other words it is allowed to slide but it must recover within a certain period of time and it becomes quite technical then. Essentially this Sine with Dwell test is something that has been developed by them and it will be utilised on Australian cars from now on too wanting to be exported because it has to pass this test. Bosch Australia has had to buy a steering robot because it has to give very direct, precise and consistent steering inputs. We have invested in that. That gets fitted to the car, basically you sit in the back seat and the car drives itself. It is a bit disconcerting I would imagine.

This slide here, given what I heard you talking to Ashley about earlier, I think this is already covered but I think this is a significant step in the right direction at least that there is some recognition from the safety authorities that it can contribute to the safety of the car even though it is not something that is used every day. It is hopefully latent but it will achieve the same numerical rating but only four stars, is also noteworthy too. That concludes what I wanted to present. I am sorry I have run a bit over time. There is certainly a lot of advancement happening in a very short period of time, so we are travelling in the right direction I think. Any questions?

The CHAIR—Just in terms of the fee specification that that may incur on some vehicles, what types of fee specifications would you be aware of?

Mr JACKMAN—In some cases it is literally that the system is made optional. What they do is they bring the car in and say there is a car in the base model, the entry level, does not have ESP. In almost every case I think now all cars have ABS when they are brought in. There is very few now that come in without ABS as standard. Really the technology difference is whether it has ESP or not. In terms of despecifying that is really it. I believe in some cases early on there were some bundlings of the safety technology so they were literally linked—I think as was mentioned earlier—with DVD players and luxury items which certainly the road safety agencies are not too keen on which is quite understandable.

The CHAIR—Seeing as though it is going to be mandatory in, for example, the US by 2011 and 2012 in the EU, being mandatory is there a way, those vehicles fitted with ESP, of ensuring that they cannot be despecified?

Mr JACKMAN—Really the despecification is not taking place outside of the manufacturer. What is happening is the manufacturer is deliberately despecifying. I mean, it is always possible of course that when a car comes into Australia somebody can literally go under the bonnet and disconnect the systems and join the tubes together and those sorts of things, but there is no advantage to doing it. There is an on-off switch for ESP in the console in most cars. Some cars do not have it. Toyota does not have it, for example, but many cars do.

The CHAIR—Really?

Mr JACKMAN—The function of that on-off switch varies from manufacturer to manufacturer. Mercedes Benz, for example, chooses to keep their system in the background active but it shows on the instrument cluster there is a light that says ' ESP is switched off', but if you get into an ABS event, then ESP will automatically come back on. It says, 'Okay. You can pretend to turn it off but we know better so we will turn it on.' A typical German approach. I can say that with utmost respect. Generally what we try and do is if you give people the switch at least they think they have the option rather than not buying the car. By the way, the switch is also reset every ignition cycle, so it is always on. It is standard as on. When you get into the car and start the car it is always on. You have to press the button to turn it off. The default position basically is that the car is at maximum safety level automatically.

The CHAIR—Thanks very much.

Mr JACKMAN—Thank you.

Witness withdrew.

Committee adjourned.