COMMONWEALTH OF AUSTRALIA

Official Committee Hansard

HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON COMMUNICATIONS, TRANSPORT AND THE ARTS

Reference: Managing fatigue in transport

MONDAY, 8 NOVEMBER 1999

CANBERRA

BY AUTHORITY OF THE HOUSE OF REPRESENTATIVES

INTERNET

The Proof and Official Hansard transcripts of Senate committee hearings, some House of Representatives committee hearings and some joint committee hearings are available on the Internet. Some House of Representatives committees and some joint committees make available only Official Hansard transcripts.

The Internet address is: **http://www.aph.gov.au/hansard**

To search the parliamentary database, go to: **http://search.aph.gov.au**

HOUSE OF REPRESENTATIVES

STANDING COMMITTEE ON COMMUNICATIONS, TRANSPORT AND THE ARTS

Monday, 8 November 1999

Members: Mr Neville *(Chair)*, Mr Gibbons, Mr Hardgrave, Mr Hollis, Mr Jull, Mr Lindsay, Mr McArthur, Mr Mossfield, Mr Murphy and Mr St Clair

Members in attendance: Mr Gibbons, Mr Hardgrave, Mr Hollis, Mr Jull, Mr Neville and Mr St Clair

Terms of reference for the inquiry:

. Causes of, and contributing factors to, fatigue.

. Consequences of fatigue in air, sea, road and rail transport.

. Initiatives in transport addressing the causes and effects of fatigue.

. Ways to achieving greater responsibility by individuals, companies, and governments to reduce the problems related to fatigue in transport.

WITNESSES

Committee met at 9.05 a.m.

CHAIR—I declare open this public hearing of the House of Representatives Standing Committee on Communications, Transport and the Arts in its inquiry into managing fatigue in transport. I welcome everyone to today's public hearing in Canberra as the committee moves towards a climax with its taking of evidence.

In opening the proceedings I would like to emphasise that in addressing the terms of reference the committee has not prejudged the issues, nor is there any element of a witch-hunt. Members want to hear a full range of views and consider initiatives which are being, or could be, developed for the better management of fatigue in transport.

Managing fatigue is a very important issue in the workplace and it has ramifications for all of us. Under the terms of reference, the committee has been asked to inquire into and to report to the parliament on managing fatigue by focusing on four areas: first, the cause of and contributing factors to fatigue; second, the consequences of fatigue in air, sea, road and rail transport; third, the initiatives in transport addressing the causes and effects; and, fourth, ways of achieving greater responsibility by individuals, companies and governments to reduce problems related to fatigue in transport. The committee will be concentrating very heavily on the last two items.

The committee has travelled extensively gathering evidence from a wide range of individuals, companies and unions associated with air, road, rail and sea transport. Witnesses in today's program include the Commonwealth Department of Transport and Regional Services, which plays an important role in ensuring the safe operations of Australia's transport networks in air, sea, road and rail. This includes the Commonwealth's specialists responsible for air, sea and land transport. Also appearing today is the National Occupational Health and Safety Commission, which is responsible for setting national occupational health and safety guidelines and codes of practice. We will also be taking evidence from the Australian Medical Association, which has been studying fatigue in doctors as well as in the transport industry. I would like to thank all those who have generously given of their time to come here today to assist the committee with its inquiry. It promises to be an interesting and informative day.

Before proceeding, and I am sure I do not have to mention it to you but I need to for the sake of the record, you are not required to give evidence under oath today, but you will appreciate that these are legal proceedings of the parliament and warrant the same respect as proceedings of the House itself. The giving of any false or misleading evidence is a serious matter and may be regarded as a contempt of the parliament.

[9.09 a.m.]

BROOKS, Mr Christopher, Acting Director, Safety Programs and Support, Australian Transport Safety Bureau, Department of Transport and Regional Services

FILOR, Captain Christopher, Team Leader, Marine Incident Investigation Unit, Australian Transport Safety Bureau, Department of Transport and Regional Services

HARRIS, Mr Peter Noel, Deputy Secretary, Department of Transport and Regional Services

HOGAN, Mr Robert, Assistant Secretary, Land Policy, Department of Transport and Regional Services

KEANE, Dr Bernard John, Director, Policy Development and Coordination, Department of Transport and Regional Services

LEE, Dr Robert, Director, Human Factors, Systems Safety, Communications, Department of Transport and Regional Services

MACK, Ms Leonie, Team Leader, Maritime Environment and Safety, Department of Transport and Regional Services

CHAIR—Would you like to outline the capacities in which each of you appear before this committee?

Mr Harris—As Deputy Secretary of the Department of Transport and Regional Services, I have responsibility for aviation and airport issues and coordination activity generally across policy parts of the department. Leonie Mack represents maritime policy interests in the department. Captain Kit Filor is in the Marine Incident Investigation Unit inside the Australian Transport Safety Bureau. Mr Chris Brooks is also an ATSB executive representing primarily land transport. Mr Robert Hogan does land transport policy and Dr Robert Lee has been, until very recently, the director of air safety investigation and now has responsibility at large for the promotion of human factor issues in particular inside the Australian Transport Safety Bureau.

CHAIR—Are you going to lead this morning?

Mr Harris—I am indeed.

CHAIR—Would you like to give us a five- or 10-minute overview of the department's submission? Then I would like to break into interactivity and questions.

Mr Harris—That will be fine, thank you. I have an opening statement which I will pick a few pieces from and then afterwards, if there is a need, I can provide further detail from that. Primarily, though, we have tried to provide here today the people from within the department who have expertise, according to the committee's wishes, in the areas of fatigue that the committee is looking at.

Some of the issues that will be raised from time to time will obviously be of direct responsibility to the regulators, particularly the Maritime Safety Authority and the Civil Aviation Safety Authority whom you are seeing separately. So from time to time, as I say, as views come up, it may be necessary for the officers here from the department to say this is a regulatory issue which belongs to CASA or to AMSA.

In terms of our submission, we have provided quite a lengthy submission to this inquiry because of its significance. We see the work of the committee as being particularly important in guiding our future activity in fatigue management. The department sees fatigue as an important safety issue in all the transport modes and the submission is structured accordingly to cover all the modes as far as we can out of this department, and one that has rightly attracted considerable public interest.

The contribution of fatigue to transport accidents cannot be quantified with any great certainty in our judgment, and you will see that from the submission. It is clear to us from data available that no-one in Australia and probably around the world has a complete understanding of the impact of fatigue in transport. There are also major practical difficulties in determining whether a person was impaired by fatigue immediately before an accident or incident occurred, and there are significant differences therefore in the range and quality of information available across the different transport modes. Despite these difficulties, we believe the available statistical evidence and research provides a good starting point for consideration of the issues and we have included what we can by way of information for that purpose.

Sometimes there is simple and clear evidence and sometimes that is not often given due regard. There have been suggestions in the media recently that driver fatalities have risen alarmingly in the past 12 months as a result of increase in truck driver fatigue. The statistics, with the limitations that I have already noted—certainly the statistics quoted in the media were for drivers in general, not for truck drivers—show that fatigue on the part of a driver of an articulated truck may be a factor in perhaps eight to 16 fatal crashes a year out of a total of 150 to 300 fatal fatigue related road crashes a year. The vast bulk of fatigue related transport casualties arise from fatigue amongst private road users.

Safety in all transport modes is of course a high priority for the community because of this. There is a strong community expectation that government will play an active role in ensuring high safety standards for commercial transport operations in terms of public safety and occupational health and safety issues.

The Commonwealth has direct responsibility, and our department therefore has direct policy interest as well as investigation interest represented by the ATSB for maritime and aviation regulation, albeit within limits defined by international agreements in these areas, and this function is carried out by our cross-modal and maritime transport division and our aviation division.

States and territories have prime constitutional responsibility for road and rail transport, although the Commonwealth has a set of different interests accreted over time; a funding role for the national highways and roads of national importance programs, the federal road safety Black Spot Program; and regulatory responsibility for vehicle safety standards—the

Australian design rules. These functions are located in our land transport division. The Commonwealth is also a member of the Australian Transport Council which is the primary vehicle for cross-jurisdictional regulatory reform in transport.

The traditional approach to fatigue management in commercial transport is focused on regulating hours of service and rest breaks. The effectiveness of this approach, however, has been hampered by poor compliance by the use of exemptions and, arguably, inefficient and inflexible structuring of the regulations. Across the modes, as a result of this, there has been a shift towards establishing a base requirement of operating hours while developing management regimes that provide for greater responsibility and ownership on the part of commercial organisations in relation to fatigue amongst staff or contractors in their employment. I might note that this sort of approach is particularly relevant to those who are involved in large corporate structures, but as you move further and further down towards the single operator it is far more difficult to expect a fatigue management program to be implemented at that level. Thus a direct regulatory approach is always going to have some continuing necessity. As well, a direct regulatory approach must be seen as necessary but not sufficient to managing fatigue in some areas.

Such management regimes as I have referred to work either through an emphasis on outcome based regulation or through alternative compliance regimes. Examples of this are the chain of responsibility and duty of care arrangements which underpin some of the land transport reforms that are now being considered by state ministers.

The new regulatory framework for truck driving hours agreed by transport ministers earlier this year includes these chain of responsibility provisions under which sanctions can be directed against operators, employers and consignors who set schedules that cannot be met without breaking driving hours or speeding laws. These are new provisions and not yet in force in some jurisdictions.

I mentioned fatigue amongst private road users mentioned earlier, and this is the biggest issue in transport safety in terms of numbers of casualties and economic costs. There appears to be little prospect of addressing fatigue amongst non-professional drivers through solely regulation and enforcement. Our submission discusses other measures that address the incidence and consequence of fatigue and road transport: public education, better signposting, management of rest areas, road based safety measures, improvements in vehicle safety standards and measures to increase seatbelt use.

A key tool will also encompass a recognition that environment factors such as heat, noise and vibration play a role in fatigue and its management. In this context we are able to provide the committee with a copy of a draft report titled *Investigation into the specification of heavy trucks and consequent effects on truck dynamics and drivers*. This report, which has attracted some media interest, is a result of controversy in relation to Kenworth vehicles. The draft report was released only last week for a four-week public comment period. As it is still a draft, we are providing a copy as an information resource, since it may be one of the issues that might be canvassed in your report in relation to truck vibration and driver fatigue. We can also provide the committee with a final copy, or set of final copies, when the final is developed.

The department's submission indicated that we regard modal separation of safety issues as a barrier to greater understanding of the impacts and operation of factors such as fatigue. The department has very recently changed its approach to safety across modes significantly with the creation of the Australian Transport Safety Bureau. The ATSB was formed within the department by the integration of the Bureau of Air Safety Investigation, the Marine Incident Investigation Unit and the non-regulatory components of the Federal Office of Road Safety. We also intend to try to establish a rail safety unit which can draw on the expertise of the other modal investigation arrangements that exist within the department and are now co-located within the ATSB.

BASI and the MIIU are longstanding Commonwealth entities with very proud reputations for rigorous safety investigation, and they represent a clear Commonwealth legislative responsibility for dealing with these areas. Both investigate and analyse accidents using a common no-blame, whole-of-system approach. The non-regulatory part of the now abolished Federal Office of Road Safety Programs and Support Branch aims to provide a national focus on road safety and the need to adopt best international local practice. We believe there will be significant benefits to the Maritime Incident Investigation Unit and to BASI by co-location with the land transport entity. The land transport site, particularly in rail, in our view, could do with some more active involvement from the Commonwealth, but historical factors such as state ownership of rail systems and the traditional Balkanisation of rail at the gauge level has been reflected as well in a Balkanisation of regulatory practice.

Dr Rob Lee, Director of Human Factors, Systems Safety and Communications, has a specialist role, which I referred to earlier, in relation to professional leadership and monitoring of human performance in safety investigations and in the fields of human factors and systems safety.

The department is committed to a multimodal perspective, as I mentioned, but this does not mean we believe one size fits all in relation to fatigue problems. There are significant differences in operations and organisational structures and technologies, which mean that optimum solutions in practice may well need to differ in modes—for example, between rail and road transport. In our judgment, those are issues that potentially the regulators should have at least as strong a view on as we have, but we do not believe one size will fit all in this area. I will stop at that point. We are quite happy to take questions. What I have said provides an overview of where the department sees the direction of its policy going.

CHAIR—I want to keep this first session very heavily focused on the department, albeit you have these various agencies within the department. One of the things that occurred to me as I read your submission was the lack of accurate data, or the multitudinous nature of divergent data that is hard to bring into any one stream. What is the department doing about standardising that?

We have been able to standardise some aspects of safety across Australia, in particular speed and the use of alcohol. One or two jurisdictions have a slightly higher limit than others, but by and large those things are treated universally around Australia. What troubles me about fatigue, in looking through your submission, is that we call on all sorts of overseas sources but there is no common thread running through it. We are almost reduced to some sort of anecdotal dimension to this problem, even though the anecdotal stuff comes from

various bases. What does the department have in mind for tackling this? In having this cross-modal agency within the department—which we will talk about in more detail in the next session—what do you hope to achieve in actually being able to identify other aspects of safety, in particular fatigue, and what measures are you going to employ?

Mr Harris—You mentioned the fact that we can get consistent national road rules—for example, for speeds and for alcohol impairment driver behaviour. The Commonwealth is actually quite restricted in being able to generate those sorts of national improvements because of the lack of a quite clear and explicit role in road and rail. Those nationally consistent approaches to regulatory standards were actually induced by the initial Black Spot Program. Effectively, we bribed or paid the states to develop nationally consistent standards.

As is true in most areas of Commonwealth interest, where we do not have either a history or an ability under the Constitution to exercise direct regulatory involvement, the Commonwealth would tend to be left with either the requirement to jawbone or to pay. We either call for something and give it a public profile or, in the case of the initial black spot road safety reforms, offer money for black spots in return for consistent national road rules.

I think initiatives such as the Black Spot Program are the sorts of things we anticipate will be generated out of the Transport Safety Bureau once it has had a chance to put the modal investigation areas more effectively together and to merge its research funding. Because it has research funding in different areas, it needs to generate what I would call an overarching policy view.

Prior to July this year, when we made the change, those entities were split and did not have so much of an ability to communicate and to generate what I might call a nationally consistent view. We will always be hamstrung by the Commonwealth's primary role in aviation and in some substantial parts of the marine industry under international conventions. We have a clear-cut responsibility for road and rail, but we will always be hamstrung by the need to gain cooperation from the states in the land transport area.

There is a proposition around at the moment, which I have referred to indirectly, on rail safety to try and establish a national regulatory set of standards that is particularly driven by the need for interstate rail transport to more effectively manage those standards. You may well have heard about that from National Rail and from others who might have provided you with comments. That in itself is proving extremely difficult to get state cooperation on, not, I think, because of any active opposition but simply because the history in this area has been that states have run particular standards of their own and cannot see any reason to deviate.

CHAIR—But what about fatigue itself? You still have a leadership role; there is still the ministerial council and there are the various committees that swing off the ministerial council. Is there any clear direction being shown in respect of fatigue?

Mr Harris—I would say there is not a clear direction in terms of fatigue as an individual issue. Most of those issues—

CHAIR—It is a bit worrying, isn't it, when anecdotal stuff says that up to 27 or 30 per cent of accidents come back to fatigue? The evidence is quite wide, from as low as four per

cent up to as high as 30 per cent, but let us say 20 per cent or more of accidents are in some way due to fatigue. Don't we need to have a national focus of some sort on it?

Mr Hogan—Mr Harris is quite right in saying that there is no particular area in the road transport reform process where the Commonwealth is taking a lead on fatigue, but, at the same time, fatigue is one of the key focuses of the national road transport reform process. As noted earlier, it is something where we have seen the driving hours package approved by ministers early this year, and it continues to be an area where a lot of work will happen. There is an expert working group within the National Road Transport Commission context; there are various committees working on the Queensland fatigue management pilot; and, at a recent meeting between some chief executives from transport agencies, industry and the NRTC, fatigue was identified as one of the very major focuses of work in the next few years.

CHAIR—What is your view as a department—do you favour a prescriptive type of agenda or do you favour a culture change? I ask that question because the thing that troubled us in taking evidence in Mr St Clair's electorate was that we had the head policeman for that area having no knowledge at all of the Queensland pilot, yet the trucks coming across the border not more than an hour and a half north of there were coming from one regime into another. While I am not suggesting that the New South Wales policeman should have compromised his state's regulations, he did not even have a sympathetic understanding of what regime a truck driver might have commenced his day's duties under. Which way would you prefer to have it tackled—prescriptively, or by going for the culture change that Queensland is after?

Mr Harris—If we stick on the land side, I would be happy for Mr Brooks and Mr Hogan to make their comments. From our perspective, the general approach that the department—

CHAIR—I am speaking specifically on roads.

Mr Harris—The general approach we have noted in our submission and in my statement earlier is that we think there is a need for a base, settled level of operating hours, but we think there is a need for flexibility for people who are capable of running a fatigue management plan—in other words, not so much just a set of hours with exemptions and indifference. Particularly because of the broader problem of trying to encourage compliance with something which has an interstate aspect to it so that there is a difference of regimes, we would like to see more consistency in what I would call a base, regulated set of hours, but we do believe that those regulations should be capable of having an active fatigue management plan supplement them or otherwise make them more flexible for people who are capable of implementing it—and I particularly emphasise that it be for people who are capable of implementing it. That is a generality.

CHAIR—If I understand you correctly, you would like to have a base regime across Australia that prescribed certain minimum conditions and that could only be varied if the organisation could demonstrate that it had a better overall regime for handling that matter. Is that right?

Mr Harris—Conceptually.

CHAIR—That is the department's attitude?

Mr Hogan—The current prescriptive hours are a big step forward, and that has to be acknowledged. There are probably some big steps forward to be taken on prescriptive hours as we go into the future. They are always likely to form your base case, but that is not to say that there are not significant enhancements that can be made to them, perhaps in line with some of the things that are happening in fatigue management. For instance, prescriptive hours could be developed so they gave more credence to circadian rhythms and adequate rest periods, so there is plenty of scope for development there.

CHAIR—We found in the evidence that, where you got too prescriptive, the truck drivers have already got methods of going through the sensors in such a way that they cannot be detected, which is unfortunate. Obviously if the drivers do not respect the system they will obey it only to the extent that they know that they may get caught. It is not doing anything for a culture change in fatigue.

Mr Brooks—That is right.

Mr Hogan—That brings you to the next part of the proposition which is, having established your baseline and acknowledging that there is room for movement in your baseline, the sort of approach in Queensland with the fatigue management program and the occupational health and safety approach in WA and the Northern Territory really point the way to the future. It has to be acknowledged that both the occupational health and safety and the fatigue management approaches are yet to be evaluated but, assuming they are inherently superior and that evaluations are favourable, the quicker we can get that sort of approach out there with a significant portion of the industry the better, perhaps moving towards a majority of the industry over time.

Mr St CLAIR—Just taking that point on, do you feel that there should be any difference between prescriptive hours—it does not matter what industry—for those in capital cities as against those doing long-distance work?

Mr Hogan—It is an interesting question. There is some notion built into the National Road Transport Commission process of more relaxed regimes for remote areas, acknowledging that the pressures of driving may be less and that the traffic conditions are probably going to involve less chance of an accident occurring. On that basis you can certainly look at it.

Mr Harris—Our submission notes, as well, that there is international practice to that effect in North American operating hours, which are varied by region.

Mr Brooks—That is correct, and this was explicitly addressed in the regulatory impact statement for the current driving hours package addressing the argument that the prescriptive hours do not apply in Western Australia and the Northern Territory. One of the arguments put forward to support that position was an examination of the crash statistics in the different jurisdictions. The number of fatal crashes per distance travelled was not higher in those two

unregulated states than in the regulated states. There could be a number of factors there but one is that in certain ways it is a safer environment. Putting it bluntly, there is less to hit if things go wrong in terms of roadside hazards and other motorists.

Mr St CLAIR—I will just take the point up on the crashes. I have got a little thing written here—and it is quite right—and this shows the difficulty in trying to address some of these issues from perspective and perception. A recent article in the *Truck and Bus* states that the Federal Office of Road Safety estimates that fatalities from heavy truck related crashes have declined—about 10 per cent roughly in the 12 months—and yet the TWU, the Transport Workers Union, claims that they have risen by five per cent. When you get one saying one thing and the other saying another, where do you fit?

Mr Hogan—There is an easy answer to that. They were talking about different time periods. The TWU was looking in 1998 over 1997 statistics. The other statistics are the more recent. But the general trend down for articulated vehicles has been there prominently over the last 10 years.

Mr St CLAIR—Just run past that again?

Mr Hogan—One is saying there was a five per cent increase in 1997-98 and the other is saying there was a 10 per cent decrease for 1998-99.

Mr Harris—When this came up earlier, Chris responded that probably none of the figures are terribly statistically significant because of the variation.

Mr Brooks—The figures on fatalities—and these are all fatalities whether or not they are involved in fatigue—are fairly clear. Some of the media reports I spoke of referred to an increase in driver fatalities. That is true in the 12 months to the end of September. Driver fatalities were up compared to the previous 12 months but that was all drivers. Most of those drivers would have died in a crash that did not even involve a truck. You have a situation where driver fatalities were up but fatalities involving an articulated vehicle were down over the same period. Clearly, it is the fatalities involving an articulated vehicle that are more relevant to issues of heavy vehicle driving.

Mr St CLAIR—Absolutely, and if the industry is looking to have some form of self-regulation on driving hours, for example, you know that long distance drivers might feel tired after an hour or two hours rather than at the end of five hours when they have to stop for half an hour. As they try to come to grips with having a program that addresses the question of fatigue amongst drivers, it is very difficult to bring that into place when there is a perception out there that, for example, there may be an increase in road deaths attributable to trucks.

Mr Brooks—It might be helpful to the committee if I pass this September road fatality report over. Page 9 tabulates figures for crashes involving trucks and buses. Elsewhere in the document there are the figures for driver fatalities as a group.

Mr Hogan—The precise statistics that I think the TWU was using are available in this publication, which we could also table. I think the TWU was talking about the fact that

fatalities involving articulated trucks increased from 1997 to 1998 from 171 to 179, whereas statistics for the year to date—to the end of September—show that there has been a substantial decrease this year over last year. It is very easy to get conflicting signals if you are looking at statistics over just one or two years. The more salient thing probably is to look at the longer term trend, and from 1988 to 1998 there was a decline in fatalities involving articulated trucks from 320 to 179.

CHAIR—And the increase in articulated trucks on the roads is quite significant.

Mr Hogan—Yes.

CHAIR—Interestingly, just as you said that you handed us this report that shows all Australian road fatalities. It shows quite a dramatic drop between September 1996 and September 1997—in fact, the rate almost halves. What do you put that down to?

Mr Brooks—To be frank, we are not entirely sure of the causes of that drop over that period. If you take a longer period, a number of factors have contributed to improve road safety. Take, for example, perspectives since about 1989. There was a big drop in the early nineties that was closely associated with the rollout of programs like speed cameras in Victoria and New South Wales and dramatic intensification of drink-driving enforcement across a number of jurisdictions, starting in Victoria. That latest drop coincides very roughly with the rollout of speed camera programs in Queensland, but it is very rough and I would not suggest that it is the primary cause.

CHAIR—The point that I was trying to come to, without getting too technical, is that if we can say broadly that it was caused by greater enforcement of speed limits through speed cameras and a more intensive application of drink-driving regulations, how much more could it drop if we could get the fatigue thing right—especially if those anecdotal figures of 20 to 30 per cent are right? That would bring another very dramatic fall, would it not?

Mr Brooks—I make two comments there. In terms of the longer term trends over a decade, there are other important factors like improvements in vehicle occupant protection and the safety of the infrastructure, both through road construction and black spot programs targeted specifically at safety.

We are working with the states and territories and other stakeholders on an update of the national road safety strategy. We had some work done by Professor Peter Vulcan of Monash University to estimate what was achievable by the year 2010. Looking at those various areas, he suggested that, using known counter measures, it should be possible to reduce the number of fatalities by half.

CHAIR—I do not remember reading that in your submission. Did you allude to that?

Mr Brooks—I do not think that is mentioned in the submission.

CHAIR—Could we have a copy of that?

Mr Brooks—We can supply a copy of those papers, yes. I do not have them with me today.

Mr St CLAIR—You mentioned a host of reasons but you did not mention speed limited vehicles. Any reason for not mentioning it?

Mr Brooks—I did not mention speed limited vehicles because I was talking particularly across the whole range of road fatalities, most of which do not involve any kind of truck. Most road fatalities are private road users. The enforcement campaigns, plus the other things, the infrastructure and vehicle occupants and safety, have been the large issues there.

On the question of what might be gained by better addressing fatigue, we get back to the point that about 10 per cent of fatalities involve an articulated vehicle. If you take all trucks you are getting up to a figure closer to 15 per cent. If we accept the judgments we have tabulated here from coroners' reports about the incidence of fatigue you get a fairly low result—well under 10 per cent of those crashes being attributed to heavy vehicle driver fatigue. Other estimates that are plausible are that the real underlying figure might be as high as 20 per cent; some would put it higher. Let us take that as a medium range figure. If 20 per cent of heavy vehicle crashes are due to heavy vehicle driver fatigue, and if those crashes are something like 15 per cent of total road crashes, then you might be talking about two and a half per cent of crashes overall that are attributed to heavy vehicle driver fatigue.

There are various ways of reducing that fatigue toll. One is by attacking fatigue directly and the other is by measures that reduce the consequences of fatigue. For example, if the drivers are wearing a seat belt, they are much more likely to survive a fatigue crash than if they are not. The same goes for other road users involved in the crash. If there is a large river red gum tree three metres off the road to hit, a fatigue incident is much more likely to be fatal than if there is a clearway, or if there is an energy absorbing barrier between you and the river red gum.

If a car driver drives into the back of a truck then the results are going to depend on the speed that the driver was going and the design characteristics of the car and the truck in terms of how well they absorb energy. One of the things the department has funded in its general road safety research program is work on truck under run barriers. So, even where fatigue is a contributory factor to the crash, it is not necessarily the only way of reducing the fatalities and injuries.

Mr St CLAIR—How much emphasis do you place on managing fatigue for the transport industry?

Mr Brooks—I will speak about the department's road safety research program, which I have been most involved in, and then Robert Hogan might wish to add things. Heavy vehicle driver fatigue has been a major research focus for us over this decade, starting with work—a lot of this is described in the submission—surveying drivers to try to get a good fix on the realities out there on the road, their experience of fatigue and what they thought of as effective countermeasures. Some of that work fed into and supported the concept of developing fatigue management programs. One of the things that came out clearly from that early work was an emphasis on flexibility—what the drivers thought would be effective.

Work we have been funding more recently has fed into supporting the implementation of the fatigue management program pilot, and in particular trying to measure the results and the experience of fatigue under different operating regimes. So that is feeding in to the evaluation.

Fatigue management is an important issue for the heavy vehicle industry. We have been active because it is a national issue and because, as some of the American authorities have pointed out, what you do in terms of regulation in this area has enormous efficiency implications for the industry as well. Because it is a cross-border issue, we have made it a focus of effort on the research side.

CHAIR—Leading off that same question, have we ever pie charted the various causes of accidents? I know that fatigue has not been as readily identified as a separate subset until more recent times, and sometimes it is associated with other factors, but have we ever tried to break-up the causes of accidents?

Mr Brooks—It is difficult to pie chart because often the factors are not mutually exclusive.

CHAIR—Yes, I understand that.

Mr Brooks—To give you a few benchmarks, alcohol on the part of the driver is involved in something like 28 per cent of road fatalities nationally and 28 per cent of fatal crashes over all. As we said earlier, and as we said in our submission, some experts suggest that the contribution of fatigue may be of that order of magnitude at least—perhaps 20 per cent, and some would say 30 per cent. It is much more difficult to quantify, for example, how many fatalities are attributable to vehicle design not being optimal or how many fatalities were attributable to there not being an energy absorbing barrier in the right spot.

In some ways, it is more fruitful to look at what is the potential gain from different countermeasures in different areas. That is something that is documented in the paper by Professor Vulcan, which I mentioned earlier, and I can table that for the committee. In very broad terms, he is suggesting substantial gains being possible from road environment measures, from road user measures, from vehicle safety improvements and also from improvements in emergency services—what happens when somebody is involved in a serious crash, particularly on a remote road.

CHAIR—I am sorry, Mr Hogan, I cut you off before.

Mr Hogan—My apologies for coming in too soon. I have made a quick list of some of the contributions that the Commonwealth has made with respect to road transport fatigue. I think the FORS research is a very significant one amongst that list. Another thing relating to ATSB is the establishment of the national heavy vehicle crash database, which will happen next year, and that database will have much more information in it on serious injuries. The capacity to use that database as an analytical tool for getting to the causes of accident may well be enhanced by that.

Of course, funding is made available under the National Highway Funding Program for initiatives which may bear on fatigue issues, such as the audible edge lining, rest stops and the like. Jurisdictions can put up cases to get funding for those. There is the route 39 initiative, which is a New South Wales RTA initiative at the moment, which the Commonwealth is participating in very actively. It is a holistic—I think that is the word they are using—coordinated strategy of enforcement, education and stops along route 39. One of the key Commonwealth inputs to that is actually to develop and get agreement on a fatigue measure. I think some of the earlier comments have gone to the difficulty of that. It is not an exact thing where you can judge someone's blood alcohol level, so you are always looking for fairly indirect measures of fatigue. In particular, this measure relates to time of day and that sort of thing. The agreement of a measure which is going to be used by the four jurisdictions involved in that exercise, I think, is quite important.

The Commonwealth has also provided a number of grants to the Road Transport Forum, now the Australian Trucking Association. The most recent of those grants was in respect of the ATA's development of its new reform modules, included amongst which is fatigue. The Commonwealth has also been very active both in sitting on the steering bodies and in funding the Tasmanian ITS pilot, which I think is a very significant development. Technology may not be the only solution in the future but it may well be a good part of the solution. These technological things have been explored in the context of the Tasmanian intelligent vehicle trial and now the intelligent access project which is running over the next two or three years. That may well show us the utility of technology in helping to track fatigue.

Mr HARDGRAVE—Thanks very much for that, Mr Hogan. I have been listening to the evidence this morning and, having had a look through the submissions, I was scratching my head and wondering what had really been happening through this department as far as dealing with the fatigue issue. It seems to me there is a lot of research and science attached to the effects of fatigue, and it is agreed that fatigue produces results similar to having blood alcohol levels of 0.05 if you have been working for 17 hours and 0.1 if you have been working for 24 hours. I am really wondering what actually is being done to ensure that there is proper monitoring of the fitness for work of anybody, be they a truck driver, somebody sitting in a boat or flying a plane or, perhaps even worse still, trying to maintain an aircraft in the middle of the night. What is really being done to ensure that when people show up for duty they are in a fit mental and physical capacity for work? I suspect nothing.

Mr Harris—I do not think that our submission could indicate 'nothing'. The fatigue management plans we referred to earlier are probably the best way of trying to address that issue. As a committee, you will have seen that there has been quite a lot of specification of hours of duty and hours off in the different transport modes. I do not think enough has been done in this area of supplementing that with active fatigue management plans inside the kind of corporate entities that are capable of running them. The reason I keep emphasising that is because some parts of the industry that do not have a substantial corporate structure are not capable of running a fatigue management plan and therefore you will always need those regulated, specified hours.

Mr HARDGRAVE—Why do we licence these organisations to provide transport services if we are not going to insist upon them having a fatigue management plan? I do not

think it has anything to do with whether it is a sole operator or whether it is IPEC, TNT or some major operator. It strikes me they should not be allowed to operate if they are not going to have proper fatigue management plans.

Mr Harris—It is the level of confidence. I was not suggesting you should or should not have them. I was saying I think you can have greater confidence in a fatigue management plan where it is backed by the kind of corporate structure that is able to invest in these things.

Mr HARDGRAVE—It still does not work. There is plenty of anecdotal evidence this committee has heard, both as a committee and as individuals, and I am sure that in your heart of hearts you probably recognise there are plenty of ways of getting around any system that exists.

Mr Harris—Quite right.

Mr HARDGRAVE—Thank you for agreeing with me. What I am wondering is why we are not trying the really heavy-handed approach to say, 'Look, whether you are a sole operator or the biggest transport company in Australia, you must not knowingly participate in a circumstance which says to a driver, "I know you have just driven 15 hours from Brisbane to Townsville. Now go and clock off and change your bus and go and do a school run."' These sorts of things occur every day of the week. The further away from Canberra the more likely it is that they will occur, regardless of whether there are river red gums along the street or other trucks along the road. The bottom line is that there are organisations that are doing that knowingly. Bus drivers and truck drivers who are feeling the pressure of employment or otherwise are being coerced into doing it. Why are we not coming down harder on the operators to make sure they do not do it?

Mr Harris—As you have outlined, from a Commonwealth perspective and from the point of view of this department answering that question, we do actually have quite a heavy regulatory compliance effort that goes on in the areas where we have direct regulatory responsibility.

But, in the case of land transport, the reforms that are being done through the National Road Transport Commission are being implemented by states. It is a traditional area of state management. As I think the chairman was saying earlier, the Commonwealth can take initiatives of a jawboning kind so that you can call for reform at the Australian Transport Ministers Council meeting and the NRTC can manage reform modules, but the implementation of the actual compliance regime is going to have to be managed by the states unless the Commonwealth is going to take on some new, major regulatory responsibility.

Mr HARDGRAVE—What about Australian workplace agreements? What about rules and regulations and enterprise bargaining arrangements that exist? Is your department monitoring any of those to ensure that there is a basic fatigue provision built into them, that no employer is in fact basically signing people to an 'as directed' approach to working or anything like that?

Mr Harris—The submission does refer to the fact that for your agreements you have to be consistent with the regulatory regimes as they apply, so the NRTC reforms would have to be reflected, I think, in whatever industrial arrangements people put in place.

But, as I think you have pointed out yourself, the difficulty in managing this is to ensure compliance; it is not so much what you write down in an agreement. I understand that evidence has been put forward to the committee saying that some agreements are breaching operating standards, but the greater concern seems to be one where it is a question of educating for compliance, which is why we would have more confidence in these corporate entities managing fatigue management plans as a supplementation to those basic sets of rules.

Mr HARDGRAVE—When you look at your own road fatality figures and you see that decline between September 1996 and probably early 1998—and we have seen a gradual increase over the period of time since—that has got as much to do with air bags being fitted in cars, more cars, and it has got as much to do with the fact that was the period of time—late 1997, early 1998—when speed cameras were introduced in Queensland, for instance, and it has got as much to do with police enforcing drink-driving regulations and doing a blitz late 1997 into early 1998. That is my own anecdotal remembrance of that.

I then wonder why we do not put some science into trying to blitz operators on the question of fatigue to see what impact that then has on road fatalities. Are there any plans to try and enforce the driving hours reform package, for instance, to that kind of extent to see what effect it has?

Mr Harris—My impression is that the states do do just that. I am not an expert on compliance.

CHAIR—You are making a very good point here. We have seen plenty of evidence that you can get around just about anything you want to, and I will give you a typical example. A number of large companies comply with the so-called driving hours—'But we do not place our drivers under any unrealistic control'—but what they do not tell us, and what the drivers have told us, is that they may be waiting for four hours to get into the supermarket loading bay and they may be waiting three hours at the other end when they load up again at the warehouse. That is seven hours for the day—

Mr Harris—Not driving time.

CHAIR—'That is just your bad luck, old chap,' and that is not taken into account. I suppose the question we want to ask you is that, if you do not favour a prescriptive regime other than in extreme instances, how do you plan to have your more favoured initiatives accepted—especially, say, in New South Wales where they seem to be interested only in prescription rather than some form of culture change?

Mr Harris—My impression—and I might ask Mr Hogan to comment on this—of the fatigue management schemes that would supplement basic regulatory hours is that they do actually take into account this question of driver time waiting and related issues. In other

words, the idea is that entities would sign up for these things and manage their drivers accordingly so that that sort of time would be taken into account.

I am not trying to suggest for a moment that we have not heard exactly the same stories that you have. People can necessarily evade these things if they so choose. The question is to get a focus in the industry of not just complying with what is written down in black-letter law, but actually taking some responsibility for implementing a plan. A plan gives them potential benefits and it provides them with incentives because it provides a bit more flexibility, but it also imposes on them costs—that is, the cost of educating their executives as well as their drivers, so this chain of responsibility thing comes into play as well. So it is not just the driver who is potentially exposed to 'Did you breach regulatory operating hours'; it is a question of the executives themselves. Robert, that is correct, isn't it?

Mr Hogan—Yes.

CHAIR—Or, indeed, the company that might be requesting the goods.

Mr Harris—That is right, the consignees.

CHAIR—So you favour this chain of responsibility approach?

Mr Hogan—Absolutely.

Mr Harris—I think this chain of responsibility approach is excellent. It puts the incentive where it belongs and, as I think we mentioned a couple of times, just a few prosecutions in that area would have a phenomenal exemplifying effect. The same thing occurred in trade practices law: when executives were not prosecuted under it, people basically ignored it. In the US they jailed a couple of Alcoa executives for this and it had a phenomenal effect on compliance in the US. The fact is that you need the thing implemented, you need to provide an incentive for these entities to cooperate and you need to provide some examples of prosecutions where people fail to do so.

Mr HARDGRAVE—That is the point I was trying to make, that with enforcement and prosecution the word starts to get around. I was having a private chat with a couple of bus drivers last week who travel long distances, but they do some short distances as well around their home base. They can get a circumstance all too often where they drive a 12-hour shift, having spent all day taking a group of school kids around Brisbane, and they then drive for 12 hours back to their home base. That is probably going to send the hounds racing trying to find the company, but they can arrive at 2 o'clock or 3 o'clock in the morning back home. They will then sleep through until 9 o'clock the next morning and are expected to show up for work the next day—and they have had six or seven hours of bad sleep, in my opinion—to perhaps do some maintenance work on the bus, heaven forbid, and then hop in the bus again that night and drive overnight. They are the sorts of things that concern and frighten me.

To try to put this in a question about the chain of command responsibility: it is not only up to the consignor, the operator or owner, if you like, but also up to the bus driver or truck

driver to be honest enough to know whether or not they are actually fit to start the job. Do we have those sorts of enforcements in place?

I offer an example. Someone who is starting a journey today who, say, may have been up until 4.30 yesterday morning watching the Wallabies in the rugby union match is really not going to necessarily be in the fittest of psychological states for, say, a 6 o'clock start this morning, I would have thought, especially if they had had a normal sort of Sunday. Their rest period was not sufficient. What kind of enforcement do we have to make sure that people are fit? Seriously, what kind of enforcement regimes do we have, or is that just too intrusive? Are we just going to trust these drivers to always do the right thing?

Mr Hogan—There are two issues in that. There is the enforcement issue in relation to prescriptive driving hours, and I think probably everyone around this table is impatient for the first major litigations to start happening, which will start sending the right signals and start educating people. Then there are the fatigue management programs where the issue of being up until 4 o'clock watching the rugby should be in there as a factor.

Mr HARDGRAVE—It should be. The old maxim amongst airline pilots was to have 12 hours between bottle and throttle, the implication being that you were not going to consume alcohol and you were going to have a proper rest. I do not think any of that exists in the transport industry.

Mr Brooks—Could I add a quick comment—and I may be repeating what Robert said—but you have things like gross violations of driving hours which are, essentially, an enforcement issue and then you have issues like how people have spent their Sunday and what they have watched on television which, as you suggest, may be very important to their fatigue state and fitness to drive, but gets you out of an enforcement model into a fatigue management model—and you start to ask questions about the company culture. Is there a culture that says that if you are not up to driving then you tell us and you do not drive and there is no skin off your nose?

CHAIR—He could work in the yard for the day.

Mr Brooks—Whatever—or take sick leave or what have you. Another important question is: if you realise halfway through a trip that you are not up to driving, is the company expectation that you will stop, ring in and be told, 'Righto, mate, take a couple of hours nap at the very least, or we will get somebody else out,' or is the message, 'No, sorry, it is due at 6 o'clock and you have got to press on'? I think some of the companies giving evidence to you have been talking about moving towards the latter sort of culture, but that is outside regulation and enforcement—the cops cannot do that for you.

CHAIR—One of the things we have explored—and I would be interested to hear your views on this—is that as part of the non-prescriptive regime, although it has an element of prescription in it, we consider recommending that fatigue management be a dimension of quality assurance. For a lot of companies, in order to be able to participate in government contracts and the like they must have quality assurance. Certainly that is the case in many states and probably with the Commonwealth as well. What would you think of making fatigue management a very clear requirement of quality assurance; that if a demonstrable, not

just a theoretical, fatigue management program was not available from a transport company, they could not their quality assurance rating?

Mr Harris—Are you saying that in relation to Commonwealth contracting or more broadly?

CHAIR—In Queensland, I think, and in a couple of the other states, if your company, be it a builder or transport company, does not have a quality assurance rating—and there are levels of that, as you know, especially when you get into high-tech machining and so on—you do not get the government job; you are just not eligible to do any work for, say, the housing commission or whatever it might be. I imagine that applies to some extent with some of the bigger companies, like BHP, and other government agencies, that if companies do not have quality assurance rating they do not get government contracts. Should we introduce into the transport industry at all levels, but mainly road transport, a concept whereby a demonstrable fatigue management regime becomes part of a company's quality assurance profile, subject to audit in the normal way, and if a company does not measure up they do not get their quality assurance rating at all?

Mr Harris—The reason for my request for clarification of your question was that it is entirely open to the Commonwealth government to set a policy of that kind, but if you were attempting to make it part of a licensing condition or something like that it would be a different arrangement entirely.

CHAIR—It is there in a de facto sense. You see government contracts saying that quality assurance rating such and such is required.

Mr Harris—Yes.

CHAIR—If you cannot get the quality assurance rating, then you had better do something about your fatigue management in your company. What do you think of that idea of making fatigue management an inescapable dimension of quality assurance?

Mr Harris—From the perspective of encouraging fatigue management it obviously has a lot of potential benefit. From the broader Commonwealth perspective, however, I am a bit reluctant to make a commitment of support because I can see full well that if—

CHAIR—I realise that that would take you into other government agencies.

Mr Harris—Exactly.

CHAIR—I am asking you—

Mr Harris—From a transport policy perspective?

CHAIR—from your perspective of a transport department, what you think of the concept.

Mr Harris—Anything at all which would encourage more active cooperation with fatigue management and therefore have a land transport safety benefit in this particular context has got to be worth considering.

Mr HARDGRAVE—Surely, though, the federal department of transport has a coordinating role to play, so, as you say, you set a policy initiative. This is probably grist for the mill for 10 years because everything seems to take so long to happen across these jurisdictions. We will not rerun the rail inquiry and the umpteen thousand different signalling systems and fire jackets you have to have. But surely a role for you to play is to try and coordinate a result out of the state governments. Would you agree with that?

Mr Harris—So broadening it beyond Commonwealth contracting to states as well, and that sort of thing?

Mr HARDGRAVE—Yes, to set the standard. The other thought I had that I would like to seek your view on is with this new Australian Transport Safety Board. Is that the appropriate forum for coordinating research into fatigue as far as all the different modes of transport are concerned? Likewise perhaps, is showing a Commonwealth lead to factor in enforcement of fatigue issues such as we have talked about this morning appropriate?

Mr Harris—I think the ATSB would genuinely want to take a more proactive and multimodal role across an issue like that, in other words, not fatigue in a single mode. Whether you say that is Commonwealth leadership or not, I am reluctant to let the states not take an interest, given their heavy regulatory responsibility in some of these areas. But if you are asking whether the ATSB should be able to consider a more effective merging of research effort so that they take a multimodal approach to an issue such as fatigue, then I think absolutely. That is the intention of this new entity.

Mr HARDGRAVE—No. Commonwealth leadership is one perspective. A couple of us come from a state which prides itself on distrusting anything that comes out of this setting. I think the yes and the no vote on the weekend proved how disparate the views are—

Mr JULL—The republic of Canberra.

Mr HARDGRAVE—The republic of the ACT. But what I think should happen in a federation of states, though, is that the Commonwealth has a coordinating role to encourage the best practice out of each of the states. Would this Australian Transport Safety Bureau play that kind of role to pick the best practice and to encourage other states to adopt it to break down this jurisdictional nonsense that seems to occur—not just in this sector but across sectors—as each state plays turf wars on the rules?

CHAIR—To harvest this diversity, in other words.

Mr Harris—That is certainly the intention. I cannot guarantee to you that they will be capable of performing because you have to remember that there is quite an important distinction—

CHAIR—If you can get the leadership right—and you do have this very powerful transport ministers forum and the committees that swing off that—can't you actually get a synergistic approach in taking the best of the states and—

Mr Harris—You can, but with this—

CHAIR—Captain Filor, you seem sceptical.

Capt. Filor—I am sorry.

Mr Harris—It is the difference between having the regulatory power and asking someone to exercise it. The ATSB can ask someone to exercise the regulatory power in the way you are suggesting, or they can make a call to governments for a policy change in terms of the contracting issue you suggested—the quality assurance linkage to contracting. The ATSB can call for things in that way—it can do the research. But the regulatory power lies at the Commonwealth level with the Civil Aviation Safety Authority and the Maritime Safety Authority and, in the case of land transport, primarily with the states through the National Road Transport Commission reform process and then state regulation.

So, yes, the ATSB can exercise leadership—that is the intention. It would be a very useful thing for this committee to propose that, but I do not want to lay on the ATSB's shoulders the responsibility for actually implementing it because—

Mr HARDGRAVE—No. We have this really radical circumstance starting on 1 December, according to ads in Queensland, where suddenly we are adopting the national traffic rules, which are not really the national traffic rules but simply all of the Queensland rules being brought into line with all the other states, and vice versa, all around the country. Surely that kind of approach now, once in place, will set a pattern for action across all jurisdictions on matters to do with fatigue. If not, there is a political problem, isn't there, for any government that does not want to take it on?

Mr Hogan—Australian road rules show the potential and the limitations of the road transport reform process. They have been in gestation—whichever count you want to take—for 70 or 50 years, and their most recent version has taken six or seven years. It has been very hard to forge consensus amongst jurisdictions as to which course is going to be taken on contentious rules. At the same time, it is what you want to set your course for.

Just coming back to this idea of fatigue accreditation as part of getting a contract, I think you can enhance that idea further. It is something we have started talking about publicly in relation to the next round of productivity gains in the industry.

CHAIR—I do not think it needs to go that way. I think you can be a bit more direct. Again, it gets back to this Commonwealth leadership role. What if Senator Ellison and his state ministers for administrative services in conjunction with the transport ministers were to come out with a statement saying that in three years time the Commonwealth would not recognise the quality assurance of any company that does not have a fatigue management practice within it? If two or three of the states agreed to that, that would send the flag right up the flagpole.

If a statement said, 'You will have three years to get a fatigue management program done. If you do not have a fatigue management program in place when your quality assurance comes up for audit, you will not be eligible for Commonwealth contracts or for contracts in three or four states.' I reckon that would have a very salutary effect right through the industry. But Commonwealth leadership is needed. If Senator Ellison and Mr Anderson made a joint statement like that, it would send a shudder right through the industry to say that they were fair dinkum.

Mr Hogan—I do not disagree with that.

CHAIR—Let us say, for example, you had a lot of Department of Defence transport contracts and all of a sudden they were at risk because, although your transport company got things there on time for the Department of Defence, it acted as a bit of a cowboy in getting them there. A statement like the one I suggested would put a bit of a shudder through the company. Do you know what I am saying?

Mr Hogan—As I said, an enhanced approach or an easier approach might be in the context of the next wave of productivity improvements for the trucking industry whereby, if you do not have a fatigue management program in place, you do not get the extra productivity. That next round of productivity improvements over the next three years is in the pipeline.

Mr Harris—I think it is worth noting that those productivity benefits are a substantial bottom-line benefit to a company.

CHAIR—Do you think that would be more effective?

Mr Hogan—It may be more effective. It may also deal a little better with the anticompetitive issues. One thing you have to be conscious of in saying, 'You have to have a fatigue management program before we give you this contract,' is that you have 330,000 trucks out there, 70 per cent of them owner operated, and a fatigue management program, while desirable, may represent a significant impost on their business. But if you give them a productivity gain which is five or 10 per cent to revenue, it is fair to ask them in return to invest some money in a fatigue management program.

Mr HARDGRAVE—But it does not matter how small that business is, if they run their truck off the road or over some little old lady who is in the middle of the street, that is a huge impact on their business too. I am not going to cop this notion that because 70 per cent of the 330,000 truck drivers are single operators that that is a problem. Most of these truck drivers work very hard and have a whole set of plans in place to try to keep themselves on the road. I do not believe any truck driver is going to be upset about putting a plan in place that says, 'You have to work a certain number of hours and you have to have a certain break or else you are going to drive off the road or over somebody on the road and kill someone.'

Mr Harris—We are not saying that the idea you put forward should not be considered. I think Mr Hogan is trying to say that there are other ideas to consider and you may not necessarily want to choose between them. You may want to list the complete set that the committee has brought up. On this idea about contracting, though, it is important to bear in

mind one issue, and that is the potential impact on small businesses. That is why we keep mentioning it. It is not because we do not want to see fatigue management throughout small businesses. If we have left you with that impression, that would be wrong. What we do want, though, is to ensure that it is something they are capable of working with. It is the confidence that they have written down something not only for the sake of getting a contract but also because they are actually quite capable of working to it.

Mr Brooks—Just as a note of caution, I think there is that important distinction between how good they are at managing fatigue—and I am sure there are a lot of small operators and single vehicle owner-operators who are actually very good at managing fatigue—and how good they are at documenting that in a way that will satisfy some sort of regulatory authority. It is that process of being able to document and satisfy an external audit that a lot of the companies—even larger companies—have had a great deal of difficulty with. As the NRTC I think has pointed out to you, the bigger operators can hire experts to put something together that is really good, but that is harder for the small businesses. There is just that note of caution that yes, we are all interested in improving the reality of fatigue management—

CHAIR—Couldn't you do that with a chain of responsibility? This is not said pejoratively of, say, QRX. Let us say, for example, that QRX was using subcontractors. You would just say to QRX, 'Your fatigue management plan must include subcontractors.' Do you know what I mean?

Mr Brooks—Yes. There is the issue of how do they—

CHAIR—I suppose you could go right down at the end of the line where you will get the individual one-tonne truck driver who will tender for a small contract. You may not be able to tie him down as conclusively, but you could use a combination of quality assurance and a chain of responsibility. We are starting to run out of time on this segment, and Mr Jull has a few questions.

Mr JULL—There was a policy on the national highway rest areas that was floated a couple of years ago. How far has that proceeded?

Mr Hogan—My understanding is that the Commonwealth wrote to all jurisdictions requesting them to do an audit on where their rest areas were. That is still happening. Once that audit result comes back in, it will be much easier to take it to the next stage of working out where the rest areas should be.

Mr JULL—Is there any deadline on it?

Mr Hogan—Not as far as I know. There may well be, but we can check that.

Mr Harris—Our submission effectively puts forward some ideas that you might want to be able to pick up for that purpose.

Mr JULL—I read that.

CHAIR—Yes, I read that, but it is not a hell of a lot, even in your report.

Mr JULL—The other thing is the driver reviver program. Does the Commonwealth have any direct input into that? Do we finance anybody or assist with it? Do you have any indication of the effectiveness of it?

Mr Brooks—To my knowledge, nobody has a direct indication of the effectiveness. There have been some questions raised about that program, almost from first principles. Some of the critics have suggested that a short break without sleep, in fact, is not terribly effective in combating fatigue. Caffeine can be, in the short term, and probably in dosages higher than a single cup of coffee at the roadside. The American NHTSA has suggested that something equivalent to two strong cups of coffee may have a beneficial temporary effect but, of course, it is temporary. Ultimately, nobody is terribly keen on drug based solutions to the fatigue problem.

Some of the jurisdictions in Victoria and the Transport Accident Commission in Victoria are starting to place much more emphasis on messages like the potential value of naps: if you are really tired, you really need to go to sleep, not just stop and have a cup of coffee and kick the tyres. There are messages about not driving when you would normally be sleeping and, again, I am talking about the general drivers. Do not start at 4 a.m. if you would normally be asleep at 4 a.m. Make sure you get a good rest the night before and things of that kind.

Mr St CLAIR—I have a question about rest stops, particularly in New South Wales, where there is quite a substantial number of toilet blocks being built at the moment in rest stop areas for heavy vehicles. Are they funded by the Commonwealth under the National Highway Program—I am thinking of the New England Highway at the moment—or are they funded by the state?

Mr Hogan—It is possible to obtain funding from the Commonwealth for that. I think you can get rest stop funding under the safety and minor works component of the National Highway Program. That does not mean that it is invariably the case that it is being funded out of Commonwealth money.

Mr St CLAIR—So you would not know whether it is funded out of Commonwealth money or state money as such?

Mr Harris—Are you alluding to a specific place?

Mr St CLAIR—There are four or five being built on the New England Highway at the moment.

Mr Harris—My understanding is that, if it is on the national highway system, it would be at least shared Commonwealth funds, but it is more likely all Commonwealth funds.

Mr GIBBONS—I have a question for the maritime people.

CHAIR—I will come to the maritime people in a moment. What I was about to say before, and I do not want to run out of time on this, is that I would like to clear up road

transport and then devote the second session exclusively to air and sea matters. Are there any other matters relating to road?

Mr St CLAIR—Mr Chairman, did you touch on the large truck stop factor of fatigue management or whether it has a role? I missed a section of it. Or did you only talk about the small rest stop places?

CHAIR—The question that Mr St Clair is alluding to is the concept that has been developed at Guyra in his electorate of a large truck stop where you separate the refrigerated vans from the others so that people get rest. You have adequate parking, perhaps even shaded parking, you have banking, swimming pool, perhaps a gymnasium, and you have a cafe selling not just the traditional highway foods but salads and the like. It is a comprehensive, holistic approach to truck stops. You would not have a lot of these but you would have them strategically placed and you would have them very well provided. Does the department have a view on that?

Mr Hogan—My understanding is that the truck stops are being picked up as part of the general audit process on rest stops.

CHAIR—But some of them are pretty ordinary, let's face it. Some of the ones I pull up at are.

Mr Hogan—It is a bit problematic in that a number of the traditional rest stops have been taken off the route by loops around towns and also by the fact that we are dealing with bigger vehicle combinations now. But I think on the part of the states there is certainly interest in developing appropriate stopping places for trucks.

Mr St CLAIR—But you see that more as a state issue than a Commonwealth issue?

Mr Hogan—Again it can be funded from funds from the National Highway Program on the national highways.

CHAIR—Most of the need for these is mainly on the national highways.

Mr Hogan—Yes.

Mr St CLAIR—It is really to do with the areas where you are uncoupling and coupling prime movers where vehicles are changing over—going back to their home base rather than doing a full run.

CHAIR—I am sorry Mr Jull's not here. I am a bit surprised that you do not have an overall policy on driver reviver. Notwithstanding what you say, there are various levels of advice we are given when we are fatigued. One is to get out of the car and walk around the car for a few minutes. Surely the driver reviver is an even better option than that, although it may not be as good as the option of pulling up somewhere and sleeping for two or three hours, or even having a controlled nap.

Mr Hogan—A couple of years ago a document was put out—and I am not quite sure I know the status of this—called *Rest Area: Rest and Survive—National Highway Rest Area Policy, Final Discussion Paper* by the Commonwealth.

CHAIR—Was that just for the pull-over type rest areas or the ones with driver reviver attached?

Mr Hogan—It is the pull-over type rest area, but I think some of the messages are supposed to be inherent as well, such as the public education—

CHAIR—Could we have a copy of that?

Mr Hogan—I would think so.

CHAIR—Sorry; we have got a copy. I ask the question because it seems that there are two slight variants on this driver reviver. In Queensland they seem to try to put them between the provincial cities, even if it means that people running those driver revivers have to drive 20 or 30 kilometres themselves to get to them. I know members of a Lions club in my electorate travel 28 kilometres to get to the driver reviver stage to run it, the philosophy being that that puts it about midway between Gin Gin and Miriam Vale or wherever it is. So that is the Queensland philosophy.

The New South Wales philosophy is to put at least some of them near provincial cities to slow people down at that spot, to get them out to have a cup of coffee with the possibility that they will go into the town and maybe stop longer or maybe go and have a meal or maybe pull into a motel. It would be interesting to have a national perspective on which is the more effective or whether there should be a combination of both. You do not feel you have any leadership role in that, or an advice mode that you might put to the ministerial council?

Mr Harris—I think from our perspective—maybe I will be a little more prejudiced—

CHAIR—Bear in mind that most of these are on your highways, too.

Mr Harris—It is a question of not, I think—if I take Mr Brooks's remarks—encouraging people to believe they have revived when they haven't and drive on. I guess our preference would be to show leadership, as the ATSB has—and before it FORS—in the area of what we call the primary ways of keeping safe. These supplementary initiatives might well be quite positive in a community sense, as you say, related to people stopping at towns or near towns, and it may also be quite useful where you have very long distances between towns. But I think our efforts primarily go into what we think are the major safety initiatives of people here.

I am not the expert but, as I read the submission, in terms of fatigue we are pretty strong on the idea—as Mr Brooks has said—that you should not try to travel when you would not normally be driving. Some people may necessarily insist on doing that, and the driver reviver stations may be useful for them. But you would not want such a popular network of these things so that people are actually encouraged to keep driving when they should not because

there is a driver reviver an hour away. As we pointed out here, and Mr Hardgrave said the same thing himself, fatigue and inattention can hit quite early—sometimes, I think, in the first half-hour or the first 20 minutes. So this 4 a.m. start—people say, 'I think I'll get an early start to the day because at 6 a.m. I can stop at the driver reviver'—may actually be putting people in the position of travelling when they ought not.

CHAIR—We will now move on to maritime and aviation issues. Do we have to bring other people to the table for the second session, where we are dealing with the new safety authority?

Mr Harris—No, we have brought everybody. I should explain to the committee that I was hoping we could have the regulator here as well, but I understand the committee has done the break-up otherwise. For us, the ATSB is meant to be a collective, so there is meant to be a bringing together of the modes. I have asked Mr Brooks if he could stay just in case there is some cross-referencing. Dr Lee and Captain Filor are available now to do aviation and maritime.

CHAIR—Mr Gibbons, you were going to commence this section.

Mr GIBBONS—I am interested to know what you see as the main challenges to managing fatigue in the maritime industry. We have had quite a few witnesses from that industry give evidence to the committee, and there is obviously a plan in place, but what do you see as the main challenges to managing it?

Capt. Filor—I suppose the main challenge on the marine side really does rest with the Australian Maritime Safety Authority. Having said that, from an investigator's point of view our main thrust is getting people to understand exactly what fatigue is. It is a complex issue, as has been made very obvious here this morning. We are lending quite a bit of effort to educating pilots and mariners as to exactly what fatigue is and how it hits them so that they actually understand it. So it is an educational process. It is more than just billboards or notices saying, 'Don't do this. Don't do that.' It is explaining exactly what the mechanism of fatigue is.

We certainly seem to be attracting a great deal of interest, but we cannot as yet measure any success from that. The major challenge is getting people to accept that they are fatigued. The marine world is a 24-hour society, and it has been like that all of its life. We try to get people to understand that the somewhat traditional macho view is not appropriate and that fatigue is more than just falling asleep; it is the effect on the person's arousal and performance. We get them to understand that they may have been working in a certain way all their life but that, when it comes to measuring their performance and how they react in an emergency, their reaction would not be as good as it could be if they had not been fatigued. So it is that sort of thrust that we are trying to get across.

Mr GIBBONS—You talked about the impact of privatisation and the quest for efficiencies in most of these areas. Do you think these are factors?

Capt. Filor—From our investigations, I quite honestly do not think we can come to any conclusion on that. For the numbers we would have to deal with to make some of those judgments the population we have is not large enough.

Mr GIBBONS—We have heard that pilots can sometimes be at work for 20 hours at a time. Admittedly, there is a possibility of taking some sort of a rest break on a vessel, but if you are bobbing around the sea in a small boat waiting to be able to be placed onto another vessel, you do not get much rest.

Capt. Filor—That is quite right. You have all the problems of vibration and movement and these are problems which are difficult to measure.

CHAIR—It is a bit analogous with the truck driver who is waiting for four hours to get into the depot and for three hours to get into the supermarket bay, losing seven hours in the day. The guy waiting to bring the vessel in, bobbing around as Mr Gibbons said, is in a similar situation. It is a form of passive work. How well are we addressing that problem?

Capt. Filor—I really cannot answer that question. I am not sure that we are addressing it very well. We are talking now about pilots because this also goes to ship crews as well.

CHAIR—And tug crews.

Capt. Filor—And tug crews and pilot boat crews are all very important. It is an issue. Given the nature of shipping and the commercial and economic pressures on manning and those sorts of things, I am not sure that we do have a good handle on it. It happens. To a degree it has always happened and that is one of our ills which we have to address. But, again, it is a case where, as Mr Harris said, one size does not fit all. AMSA certainly, to my knowledge, is pushing very hard a fatigue management regime. In terms of ships as opposed to pilotage organisations, there is something called the ISM—an international ship management code—which again is something which is trying to take into account issues such as fatigue. With pilots and pilot companies, they tend to be either individual companies or the pilotage firms themselves. The companies such as Brisbane do have fatigue management systems as part of their corporate make-up.

CHAIR—We received a lot of criticism about Western Australia, especially Fremantle.

Capt. Filor—Again, I really cannot comment. We have had no investigations involving any pilotage issues in Fremantle. We have had a technical problem over there but it is the only investigation we have actually conducted. I have no measure from my own knowledge that I could comment on.

Mr HOLLIS—Following on from that, most of the issues that have been raised such as pilots and tug boats are in our own waters. What about foreign flag vessels? Some would argue that if we have a catastrophe caused by fatigue it will probably be on a foreign flag vessel. What sort of role can AMSA play there? We could put regulations on for our own pilots and tugs. It would be even more difficult though with foreign flag vessels.

Mr Harris—If you are asking what role AMSA can play, you would probably have to ask them in the end. The role of the investigation unit of the ATSB will be to be as proactive as it can but, as Captain Filor has said, it needs to be based around some substantive result that has occurred. It is probably a better question for AMSA than for us.

CHAIR—You have actually got to have an incident before you can get involved? Is that it?

Capt. Filor—That is right.

Mr Harris—Unless there is a systemic series of minor things that suggest to you there is a serious problem.

Mr HOLLIS—But surely you must have some concern about that. This committee has investigated over a number of years matters dealing with shipping, and surely Transport must have a view. Time and time again, the incidents that have happened off the Australian coast have involved foreign flag vessels. I would be a bit surprised if the department did not have some view or was working on something like that. Do you mean that ships can be going up and down the Australian coast with most of the people on them sound asleep and we cannot do anything about it?

Mr Harris—No, we are saying that the Australian Maritime Safety Authority, which has the regulatory responsibility in the area, can and does.

CHAIR—They will appear as a separate witness.

Mr Harris—They will appear tomorrow, as I understand it. This is the sort of issue that I was referring to earlier. We find quite a lot that the policy or investigation or safety research area are asked a question that really belongs to the regulator.

CHAIR—Oaky, we will take that on notice for tomorrow.

Capt. Filor—I will make one comment about that. While so much of our cargo is carried in foreign bottoms that sort of statistic will be thrown up. We should not neglect that there have been two major Australian casualties, the *Iron Baron* being one and the TNT *Alltrams* the other, as opposed to things like the *Kirki* and foreign ships. It is statistically difficult to comment that it is inevitably foreign ships. It is not necessarily the case. That has to be put into perspective.

Mr GIBBONS—Can you explain to us the philosophy which underlines investigation methods used by the Marine Incident Investigation Unit? How are they different from other investigative units?

Capt. Filor—Our philosophy is based on a systemic approach. We try to look at the whole system. We model it on work by Professor James Reason. I am not sure that we do differ from the BASI approach. It is difficult to talk about no blame because, if people have made mistakes, then those mistakes have to be identified. We would maintain that we actually do not deal in blame. Where a mistake has been made that has to be identified for

people to learn from it. I would question that our philosophy or approach is different. It may be slightly more robust occasionally, but I am not sure that is true.

Mr Harris—From my perspective, the only difference is the intensity sometimes of the investigation. Captain Filor is left to get on with his job, which is pursued with the same philosophical approach as the Bureau of Air Safety Investigation uses. But the BASI investigations tend to be subject to a great deal more industry scrutiny. That is the perspective that the department experiences. I think there is a commonality of Commonwealth approach between aviation and marine, but rail is treated quite differently because it has been generated as a state based approach.

CHAIR—You can understand the concern of my colleagues. We have had evidence before the inquiry about the *Exxon Valdez*. But for the officer at the watch, making one turn, all that could have been avoided. The contributing factor was fatigue. We are not into systemic stuff there. You can understand the concern of my colleagues.

Capt. Filor—I certainly can. I would say though that it is systemic. Accidents are complex by their nature and something triggers that accident. When you look at the chain of events behind it, there is the underlying system which gives just that trigger to the operator. It is sometimes quite banal or even almost seemingly inconsequential. A whole chain of events then gets loose and causes something like *Exxon Valdez*. They are very involved and, hence, very interesting.

CHAIR—We would not want one on the Great Barrier Reef, for instance.

Capt. Filor—No, we would not.

Mr JULL—I was going to look at the aviation area. Whether it be a Qantas 747-400 going off the end of a strip in Bangkok or a Cessna going into New England, when you physically go in to investigate these accidents is fatigue on the tick list?

Dr Lee—Yes, Mr Jull, it is. Aviation has probably been one of the leaders in terms of the amount of research that has been put into fatigue, identifying problems in short haul and long haul operations. All of our investigators go through a human factor course. There is one on this week. We also have human performance specialists who are qualified in these areas. As part of the overall look, we do things like a 72-hour history and then back beyond that to see if there is any evidence that fatigue may play a part in the accident.

It depends a little bit on the category of the accident or the incident. Obviously the more serious ones tend to get a more detailed investigation, and some of what we call category 5 incidents, of which there are thousands. We may not necessarily go particularly deeply into those but, if we get a number of them in a particular area, as Mr Harris mentioned, we may look at a systemic investigation to find out if there are any underlying factors there.

If I could add to that, I think one of the problems that you face and we face is the very nature of fatigue itself. It is such a complex issue; it is not easy to compartmentalise it. If we had an accident, for example, which may result from poor training, is that more important than the fact that the pilot or the person was slightly tired at the time that it happened?

There is a chap named Frank Hawkins, who has a nice analogy for fatigue. He says it is a bit like a car engine that runs smoothly and then misses and then comes back to running smoothly again. It is not a gentle decline in performance. As a person gets more fatigued, then those times when the engine starts to miss get more frequent and maybe a little bit longer. When we deal with fatigue, we tend to deal in terms of probabilities, and I am sure you are aware of this. With an aircraft, when you can load it up, you can predict almost exactly when it will fail. You can have people awake for long periods of time and you cannot say that after X time the person will start making mistakes. All you can say is that the person is a lot more likely to make a mistake, but they do not necessarily always do.

Similarly, if you are looking at the population in general, there is research that shows that most of the population permanently operates on a sleep deficit because of the way—I think this was in one of the submissions—the artificial light comes in, and people are sleeping a lot shorter hours than they originally evolved to do. The amount of fatigue in the normal population is something we really do not know. We get some indication in terms of accidents.

As I say, you are dealing in terms of probabilities, which makes it very difficult to be totally prescriptive. If you are looking at setting a particular time, you have to select a time that the research shows is probably on the left-hand end of the distribution, if you like, so that the bulk of the people can easily exceed that time without any apparent ill effects. People do that all the time. They get a subjective probability that fatigue does not affect them. It makes it extremely difficult to be totally prescriptive. In aviation we tend to focus on a lot of education. A great deal of educational material goes out to the industry and to pilots, and we try to identify it where we can in incidents and accidents. It is certainly on the tick list.

Mr JULL—Would it be true that a great deal of the concentration has, in fact, been on the aircraft and the operations but there are other aspects of the industry that may have been ignored? I cite, for example, the situation at Sydney with the control unit there. They found three or four incidents where, in fact, fatigue was an issue. What is our concentration there now? Are these the areas where we are missing out?

Dr Lee—Yes, I think you are right. It has been traditional to concentrate on the sharp end and the flight crew. As we have moved further back into the system, we are getting these concepts applied much more broadly. When we investigate, for example, an air traffic control incident we certainly look at the fatigue aspects. Airservices Australia now has courses in place to educate controllers on the effects of fatigue as well. I think these are expanding, and it is probably understandable why we concentrated initially on flight crew because they tend to be the last line of defence. It is certainly expanding.

The survey which we had on our regional airline safety, for example, looked at specifically addressing the fatigue issue in regional air operation, not only with pilots but with maintenance crews and so on. We are also looking at fatigue in maintenance operations at the moment. We have completed a survey and there is a preliminary report coming up on that. We are trying to get some hard data about not only what goes wrong but how people feel out there about these sorts of things. I think the idea of a fatigue management plan, dependent upon the category of operation as well as some sort of base line prescriptive

hours, is probably the best way to go. The effect of fatigue interacts with the kind of task that you are doing.

Mr JULL—Perhaps we have all seen too many movies. In the case of air traffic control, is it fair to say that there would be a great deal of similarity between the pressures on an air traffic controller and the pressures on a commercial airline captain, yet under their awards and their conditions there is really no comparison between the way they operate?

Dr Lee—It is a little bit different. Depending on the nature of the operation you can have a much larger team. The other aspect of fatigue in any sort of safety system is that you have to try to design your system to say, 'Okay, we are going to have people in there who are tired and make mistakes, so let us design the system to be as fail-safe as possible.' Air traffic control is very good at that.

If you look at the procedures that are in place from just giving a pilot clearance and having it read back again and the cross-monitoring that goes on, it is reasonably error tolerant, although, as you have said, occasionally things get through. The nature of the system itself has got to be taken into account as well as the individual. Air traffic control is getting much more broadly into the whole area of human factors now. Again, it gets back to what was said earlier. When you are looking at air traffic control you need to look at that baseline prescriptive approach coupled with a fatigue management plan for the nature of the operation. A one-man tower might have a different fatigue management plan from a tower with, say, 15 or 20 people in it with tower control and radars and so on. It has got to be looked at on a case by case basis. But fundamentally, we are all human beings whether we drive trains or operate planes or get into air traffic control towers. It is those fundamental capabilities which make this issue so complex. There is no simple solution.

CHAIR—Does the jurisdiction of the new investigatory body go into aircraft maintenance, air traffic control and the air services operational rooms?

Dr Lee—The ATSB is primarily an investigative body. When things go wrong or if there is a safety inefficiency—

CHAIR—Does this go on to the actual operation of aircraft or does it go into—

Mr Harris—It goes broadly.

Dr Lee—The total system.

Mr Harris—In other words, Dr Lee and his colleagues can go as far up the chain as they need to. If it is obvious, after kicking the smoking tin as they call it there, that there is a problem further up the chain that was responsible for this, they will go back and look at the management history. In fact, it is quite standard to look now at not just the crew's operating hours but also the management of the airline involved and, thus, things like maintenance history if that is necessary to the particular incident.

Mr JULL—I was just going to go into that area because the LAMEs are starting to make noises about some of the things that they are putting up with. It is the nature of the

beast that much of their work is going to be done from midnight to dawn. The report has gone in as deeply as that. I suppose it is a bit unfair but, as we anxiously await the report, can you give us a bit of a preview of whether or not we have found deficiencies in our system as yet?

Dr Lee—I have the draft. The draft is actually being carried out by one of our investigators who is looking at this as part of his thesis project. I will go to the fatigue area. He has looked at age group, the longest shift worked in the last year, time of day, the work attendance pattern by the various industry groups, the types of safety occurrences coming out, systems operated unsafely, towing, incomplete installation, the person who contacted the hazard, and so on. In looking at those sorts of issues, because it is such a complex area, it does not immediately lend itself to saying, 'We will prescribe X number of hours.' It depends upon the nature of the task, whether it is a complex and difficult installation—say, a changeover of a system—versus simply a visual inspection of something quite straightforward. I can find out if he is happy for a preliminary report to be given to you, but certainly I too am looking forward to the final report.

CHAIR—We did receive evidence, did we not, that if you are doing an engine it is not good policy to take off the person who has installed the engine for the last 1½ hours or two hours, because he is already working in a pattern of procedures. If you break that, you may save a fatigue problem but create an even worse one in lack of continuity.

Dr Lee—That is exactly what I was saying. To try to tease out the specific contribution to fatigue, it is a case of whether it is minimising risk to have the person continue on, even when tired, rather than to change over and risk something even worse happening. That is why it is such a difficult and complex issue.

You may then have, thrown in on top of that, things like time zone changes. There is a lot of work being done with the military. If you are taking a bunch of soldiers from, say, Guam to somewhere maybe 10,000 miles away, are they going to be ready for combat? What sort of sleep patterns should they be adopting? This sort of fatigue management is a very multifaceted issue, but it has to be balanced against what might be other factors. As I said at the beginning, if you are trying to decide whether a person made a bad decision through fatigue or due to training, you have to try to collect the evidence, for example, on sleep patterns, previous behaviour and even just how current the person is at that task. If a person has to do an instrument approach at night and has not done one for, say, 18 months, that is a high workload task, which means it is more susceptible to the effects of fatigue than the same task performed when the person is very current.

Mr Harris—Which is why, when you asked earlier for our broader, general view, the logic here seems to be not something ultra-prescriptive, particularly when the nature of the task is something where fatigue is an issue that will have to be managed. So you do not ban fatigue, because you cannot do it. Long distance trucking is the same as licensed aircraft maintenance engineers; you manage it. So a fatigue management plan becomes an essential part of the operation. That particularly goes to educating the management, as well as the individual, that they are prone to this, and setting up a set of systems to try to deal with it, rather than simply bar it, where the regulation may not be complied with because it is impractical when viewed against the nature of the industry.

Dr Lee—When you do have prescriptive regulations, within those regulations, even if you are conforming with them—and I think you mentioned about staying up all night at the football and so on—you can still have a fatigue problem. It may help minimise it. The major companies, for example Airbus, have issued a series of recommendations for pilots, depending on the kind of operation they fly, about what to do—when to have a cup of coffee and when to try to get to sleep. That is separate from the prescriptive side of it. It gets back to pilot education. In our literature and in our training, when we go to aeroclubs and so on, we talk about fatigue and try to get people to be aware that, regardless of what the regulations say, if you are not feeling right—a sort of personal checklist approach—it would not be a wise move to attempt a difficult flight through cloud on instruments when you have not done so for a long time.

This is one of the other parts of fatigue management—that you accept the fact that you will have tired people. How best can you design the system? If you know that people are likely to make mistakes, maybe you should be a little more prescriptive in terms of the instructions you give them to carry out certain tasks rather than just simply leave it up to them. There are all those sorts of issues as well.

Mr HARDGRAVE—I would like to ask essentially the same questions of both Captain Filor and Dr Lee. Captain, in your opening remarks you talked about the macho image of people who go to sea. From that view, I take it that there is probably an underreporting of fatigue. There is a suspicion that fatigue could be at the back of incidents that happen at sea but nobody really talks about it. Is that—

Capt. Filor—Certainly, until a few years ago, I think that would be quite true, because the attitude 'it does not happen to me' is a very common one that you come up against. As Dr Lee was saying, we have a 72-hour history, a 96-hour history, which we try to trace, but getting accurate and open acknowledgment of what people have actually been doing in the previous 72 hours, 96 hours or whatever is very difficult. They look at you as though you have fallen out of a tree when you say, 'Did you drink coffee?' or ask quite detailed things about what they ate. Now, perhaps, they are getting a bit more used to it, but certainly to start with we were looked on as somewhat odd.

Mr HARDGRAVE—Philosophically, would you presume that fatigue could be underreported and that fitness for work and all those factors are important to include in your investigations?

Capt. Filor—Yes, we do and we will be issuing a report later this week of a grounding on the Great Barrier Reef, where we have used two methods of looking at fatigue. One is a straight credit-debit type sum, and the other is using the United States Coastguard index, which I believe the committee has a copy of, just to see whether or not fatigue is a probability. Again, we deal in probabilities the whole time here.

Mr HARDGRAVE—On the credit-debit analysis, are you talking about non-fatigue as credits and fatigue as costs and so forth to somebody's capacity to work properly?

Capt. Filor—What I am dealing with is the physical rule of thumb that for every hour's sleep you get two hours credits, and for every hour you work or are awake, which is the

important thing because only sleep will actually cure fatigue, you then deduct one hour. What we are finding, particularly with pilots, is that they quite quickly get into the debit area. How much effect that has is something which is very difficult to measure, but the fact that they are in that area increases probabilities of accidents occurring.

Mr HARDGRAVE—Dr Lee, on a similar of line questioning, whilst I accept that the '12 hours between bottle and throttle' analogy seems to be well adhered to by pilots, particularly commercial airline pilots who are paid the premium they need to ensure that they have some pretty amazing rostering arrangements by comparison to other people in the workplace—they can fly for seven or eight hours with an hour or two either side, or overnight, 24-hour break in Singapore, then fly on from there and do a 15-hour shift, then have two or three days off before they fly back, those sorts of things—it is other areas of the airline industry that concern me.

We took evidence in Brisbane some months ago from an aircraft maintenance engineer. I worked out what airline he works for and I do not fly with them, so I was quite pleased about that, but it concerned me greatly when he was talking about regular maintenance being done through the early hours of the morning. There were systems in place for occasional, perhaps quarterly, checks of those aircraft at other hours. Is there a need to look at whether or not somebody is fit to come to work at 11 o'clock, when the planes are finished flying and they have to be ready to fly again at 5 o'clock the next morning, in view of the physical and mental strain of working at that time of the day?

Dr Lee—I think you are right—the maintenance area has been less looked at from the human factors point of view until very recently. As you have said, it has been concentrated primarily on the sharp end, and also looking at the immediate consequences. If a pilot makes a decision and it is wrong it could be 500 people, but a maintenance person can make his decision and what happens as a result of that may be hours and hours away, so there is not that immediate feedback in terms of the effects of what they do. But what has happened in the industry is that there is a much greater awareness of that need, and it is as much through commercial pressures as anything.

If you have a maintenance error which leads to, say, the aircraft dumping fuel out of Sydney, shutting down the engine and returning to Sydney, putting the passengers up and so on, it adds up to a very large amount of money. Just ramp accidents are costing the industry an estimated $2 billion a year. So there is a lot of pressure on the industry to try and reduce these kinds of errors. Regardless of the pressure from regulation and so on, people are starting to look at things like maintenance error, like ramp driver or ramp operative's error, and there are a number of projects going on. In Europe, for example, there is one called the SCARF project, which looks at safety courses for airport ramp functionaries. One of the dimensions of that is fatigue, and some of those people are maintenance people.

It is an area we are gradually getting into, but operationally you are still going to need to look at aircraft at night; it is simply that that is the reality. So, if that is the case, you can say, 'People are operating at less than their optimal performance. How do we design the system to try and pick up those errors? Do we need an additional check so that if he does do it wrong someone will pick it up?'

Mr HARDGRAVE—And you cannot necessarily say, 'Once a quarter have a daytime service to check what has been happening regularly at night,' because you may not get the chance to inspect the aircraft.

Dr Lee—Aircraft are being checked all the time, and a lot of the newer ones, particularly modern aircraft like the A320, have internal monitoring systems to look at fault diagnosis within them. There is line maintenance and then there is heavy maintenance in the hangar. The line maintenance is going on pretty well all the time—when the aircraft pulls up at the ramp various checks may be done on it. Heavy maintenance is when it is taken off and the night shift—or it may be done over several days—takes an aircraft apart and puts it back together again.

The commercial consequences of those errors are making people realise that we have to look at this from a human performance point of view and not the traditional punishing point of view. One recent example is at Singapore Airlines which has installed a system where they look at people reporting maintenance errors and try to understand why those errors are occurring. Rather than just simply punishing the person they say, 'Let us understand why this is happening,' and fatigue is a dimension of that. That is the kind of enlightened approach that is going on through the bigger companies.

The smaller companies are more of a problem. As Peter mentioned, it is difficult to have the one-man maintenance operator, who is trying to earn a living, put in a fatigue management program that really works. He might have it on paper, but if he has to do an all night job it is a bit like truckies who do the maintenance overnight and then drive. The reality of it is a combination of prescription and education of people about the effects of fatigue, not only at the working level but at the corporate level.

Mr HARDGRAVE—Should we be looking at similar duty times and days off for maintenance engineers, as a result of certain duties being performed, as we have for flight crew?

Dr Lee—That is where the research needs to be done. I know you have heard from Professor Dawson. He has been looking at exactly these sorts of areas, developing particular fatigue management models for particular classes of operation. That is probably the most beneficial direction we can go. The discussion paper that CASA issued addresses that issue of specific management plans and then auditing those plans in place of the component of regulation as well as the prescriptive side of it. But a lot of it is education of people, not only at the working level but at the management level.

Mr HARDGRAVE—What are the telltale signs when there are problems? We all travel on aircraft a lot. I am sure you on that side of the table do too.

Dr Lee—Yes.

Mr HARDGRAVE—It concerns me, perhaps in a tongue-in-cheek way, when I get on board an aircraft and find that the cooker does not work properly, the oven or whatever, although it is probably saving me the need to have another airline meal. It concerns me when you get on an aircraft and there is a seat problem for two or three trips in a row. The

footrest does not work or the seat does not go back or whatever and you talk to the cabin crew and they say, 'We have reported that on this aircraft; it has been a problem for weeks.' Are they telltale signs that we should be concerned that maintenance is not being done to the full as a result of fatigue?

Mr Harris—There is a minimum equipment list requirement on aircraft. In other words, you can fly an aircraft, but remember what we are talking about here is regulating for safety and investigating for safety. If it is not a safety issue I am not sure that you would want to draw the conclusion that simply because the coffee percolator does not work and has not worked for two days that is an issue. Normally that would not be the sort of issue that would require you to get involved in the licensed aircraft maintenance engineer area you are talking about.

CHAIR—The point that Mr Hardgrave is making is this. We understand that distinction here in the committee. I remember the seat in question on the particular aircraft because I sat in it a couple of times. It must have been for two, three or perhaps four weeks. When you were asked to bring the seat up into position for landing, it would not lock in.

Mr Harris—If it is a safety issue, which that is—

CHAIR—That is a safety issue.

Mr Harris—That is a safety issue. You see the distinction between the coffee percolator and the seat.

Mr HARDGRAVE—But the coffee percolator is indicative of whether there is enough maintenance time or enough attention to maintenance or whether it is done properly.

Mr Harris—I would not agree with that. The nature of the organisations that fly aircraft are such that they are very well aware of safety issues. There is a difference between taking an aircraft out of service to fix the coffee percolator and taking an aircraft out of service to fix a problem with cabin lighting or something like that—another passenger related safety issue. They are quite different. I do not believe we see serious incidents where there is a failure to take account of what I would call safety related problems. Certainly, if there was, that would be showing up in the work that Dr Lee and the ATSB mob broadly are doing, and also the safety regulators' perspective. I do not see it coming in that way. I do not know, Rob, whether you think differently.

Dr Lee—I think you are right. Provided the primary safety items are right—and I agree that the seat is obviously one that is—aircraft might, say, fly for a day with the video system not working, because it is cheaper for the airline and operationally more acceptable to put it in the hangar at night and do that repair overnight. Obviously it has to go all day—

Mr Harris—And more passenger acceptance. People do not like cancellations—'We cannot fly for four hours because we have got to fix the video.'

CHAIR—I think we understand those distinctions. We are asking whether there is any indication that if they let the coffee percolator or something else go and then the seat goes

and they let that go for a while, they would let something else more important go. For example, would the instrument checks get done every time?

Mr HARDGRAVE—Or are you suggesting the coffee percolator is so far down the list that they will do the engines, they will do the rivets, they will do the wheels, they will do the nut behind the wheel and all those other things and they will get to the coffee percolator if they have the time? That is what I think you are suggesting, which proves my point that they had three options, one being that they ran out of time.

Mr Harris—No, I do not think it was like that. You do not need a licensed aircraft maintenance engineer to fix the coffee percolator.

Mr HARDGRAVE—No, I would not have thought so. That is the other point, isn't it.

Mr Harris—If you work from that point of view, LAMEs know that the sign-out arrangements which exist in maintenance organisations make people pretty much well aware that there is a certain level of equipment for which they are responsible. I think the genuine worry is where you get a continuing set of exemptions provided for not having what is genuinely safety rated equipment maintained. We are actually at the wrong level here in terms of these examples. The level should be the sorts of things that happened in the Monarch.

CHAIR—Dr Lee, could you enlighten us on this other grey area?

Dr Lee—Which one is that?

Mr Harris—Think of the sorts of things that happened in the Monarch.

Dr Lee—The exemption side of things?

Mr Harris—Yes, where things were not fixed for a couple of days. I had reported it, but we got an exemption to fly with them. I cannot remember what they were.

Dr Lee—That is something that might be worth addressing with the regulator. Certain equipment has to be taken out of the aircraft for maintenance. In the Monarch example that Peter referred to, the autopilot was inoperative, and they got an exemption to fly without the autopilot provided they had a second pilot in the cockpit to handle the duties normally handled by the autopilot. You can get a range of exemptions, but before those exemptions are given they have to be justified. In other words, there has to be some compensation for what happened.

The greater concern, again getting back to the Monarch class of operation, is that some of these exemptions may not necessarily be recorded. Even though in that case the pilots were concerned, it did not get to the top level and it did not get attended to.

Mr Harris—If you are looking for signals in relation to maintenance, it is more at that end. You will always find examples of people not behaving within the requirements of the system, but it is very rare in this area. That is the end you should be looking at closely, I

think. People have a history of trying to operate without things that are particularly serious pilot related—

Mr HARDGRAVE—I am not trying to trivialise a very important area by talking about the warmers and the coffee percolators. Do not get me wrong. I am only trying to look at indicative things such as fatigue in a maintenance worker or in whoever comes in in the middle of the night when the system dictates that the work be done between 11 p.m. and 5 a.m. and the coffee percolator maintenance man or woman may not be available to fix it. I am only looking at indicators.

Can I move on to something serious that you raised in your submission. You raised some doubts about CASA's proposals to change the flight time and duty time regulations which are going to replace civil aviation order No. 48, which provides an adequate level of safety protection in your case. Dr Lee, what is exactly wrong with CASA's proposals on flight and duty times?

Dr Lee—Can I qualify that by saying that the proposal CASA has put out basically says, 'Not one size fits all. Let us have a look at different categories of operation.' For example, if you compare the duty times for aerial agriculture with the duty times for transmeridian flights, they are quite different. They are saying that the idea is to have a fatigue management plan for the particular class of operator. Our concern, if I can summarise it, is that if you do that you have to make sure that the auditing of that fatigue management plan is effective. In other words, if you have it in place you do not just present a paper to CASA and say, 'This is our plan.' CASA has to audit that it has in fact been complied with. It is not pure self-regulation.

Mr Harris—This is the comment we made at the outset and the comment we are making consistently: you can only use fatigue management plans—which is a sensible way to go—where you have confidence that they are actually being abided by, and that requires active oversight in terms of an audit function.

Mr HARDGRAVE—What chances are there of getting this active oversight in place? Are we talking about personnel challenges and enough people to do it?

Mr Harris—We are talking about when you introduce a new level of flexibility and about not just introducing it on a set and forget basis. We have to change our work structure inside the organisation. I think CASA does intend to do that. You could ask them tomorrow. When we express a reservation, we do it because of that. You can only use these things where you provide this effective level of flexibility and commonsense. Mr Jull said that the nature of the beast is that if you have fatigue you will have to manage it. But you can only do that where you have confidence that the system will follow up. We think CASA will but, given they put out a discussion paper, that is an area where BASI would like to see them take an active interest.

Mr HARDGRAVE—Can we be clear on a better approach? I understand the criticism.

Dr Lee—I think the better approach is to make sure that there is an assurance that this auditing process can be carried out effectively and that the fatigue management plans are well founded.

Mr HARDGRAVE—Realistic?

Dr Lee—Realistic. It gets back to what we were saying earlier. I think Captain Filor pointed out that an accident is like a chemical reaction. You mix all the ingredients and you get the reaction. One of those ingredients may be fatigue. You have to be sure that you know the extent to which that is a problem. In aviation, we have had a number of systems in place over the years, including incident reporting systems, confidential reporting systems and a program we have promoted in the companies called INDICATE. It is a proactive safety program which includes a confidential reporting facility so that people, whether they are maintenance or whatever, can report to someone who is not going to take action against them. It is fine to see that spread throughout the industry, coupled with the auditing of the program.

Mr HARDGRAVE—How does that then relate to the maritime sector? I think there is the potential for maintenance problems and maintenance on the run at sea and all these sorts of ingredients. Is what we have been discussing in the aviation sector pretty well true in the maritime sector?

Capt. Filor—I do not think the two are parallel. You are talking really about a maintenance period when the circadian rhythms are going down at low levels. Nowadays at sea, many ships are what they call unmanned machinery space. Much of the maintenance conducted at sea is conducted during the day by engineers not on a roster. It does occur in port. Times in port are short and it may well be that maintenance is done during the early hours of the morning. It is done when it has to be done. Having said that, at least the sea is slightly more forgiving compared to plummeting from 30,000 feet.

CHAIR—Just one thing troubled me in relation to TAAATS. When we went on our inspection as a committee, we found it very impressive. We went through the operations. We noted the atmosphere of quiet and focus on the control panels. We were taken into the training room where we could see how it was being done. We had a reasonable feeling of confidence that this was something special. Yet the evidence from the union was quite disturbing. It was hard to sort out where the general areas concerned were. For example, they were not allowed to take coffee to the consoles and things like that. This was just the usual employer-union argy-bargy where safety issues were concerned.

Do you have a fair amount of confidence that all the panel operators are not working to unrealistic rosters or are not being stressed unnecessarily? In a way, those guys do not have just one aircraft under their control but several. In conjunction with that, I would like to ask about page 26 of your submission about the BASI occurrence number 930-2749 with the 747 and the 767 on a collision path and having to be separated. When the incident was looked into, it had accumulated fatigue, lack of sleep, destructive sleep patterns, lack of adequate rest breaks and long- and short-term pressure caused by additional tasks as a team leader. Was that at the tower or TAAATS level and what happened to ensure that it did not happen again in relationship to fatigue control measures?

Dr Lee—I will answer your question in two parts, if that is all right.

CHAIR—Sure.

Dr Lee—As far as TAAATS is concerned, the ATSB or the bureau receives instant confidential and mandatory reports on a regular basis, and whenever there is a major change we look very carefully at the incidents coming in. As far as the rostering, and so on, is concerned that is something that Airservices, I am sure, could tell you about in detail.

CHAIR—You have not had any alarming reports into the TAAATS operations rooms as a result of the new set-up and the rostering?

Dr Lee—Not that I know of, but I will certainly check that for you.

CHAIR—Could you come back to the committee on that?

Dr Lee—Certainly. On the second question about the specific incident, I think this indicates the level at which we will look at fatigue as part of an incident which is serious like that. If it is identified—these things are not just filed away—the results of that investigation go back to Airservices with recommendations, if they need to be made, to change the problem if it is something which is obviously amenable to a recommendation. Again, I would have to check up to see whether there was a recommendation that came out of that.

CHAIR—I am not familiar with where the tower takes over from the TAAATS operation. At what level would that have occurred?

Dr Lee—I am not sure of the detail of that one, but I can find out. If he was the tower controller he could be the en route controller.

CHAIR—It could have been either in this instance?

Dr Lee—It could have been either, yes. I am not sure what it says but if it is up to 1,500 feet—

Mr Harris—No, that is the distance. It is the lights thing that is the only thing that suggests it. It is probably en route.

Dr Lee—It is pretty sure to be an en route controller. Again, the systems in place are such that, particularly as we have in our traffic collision—

CHAIR—It must have concerned you generally for you to have cited it for the committee.

Dr Lee—Yes, as this was to look at some of the issues and the actions where fatigue is a problem. We are, as I say, citing that to show that we are looking at, and identifying, fatigue as a problem in those sorts of areas.

Mr Harris—It is worth recognising this example as it is quite a good one for the fail-safe nature of the system that Dr Lee referred to earlier. You set up a system where it is not just a controller and you do not plough on regardless.

CHAIR—I get a bit of a feeling in listening to various levels of transport and various levels of accident that unless it is something terribly horrific, changes are not readily made and the exemption systems go on. That is why I pose this question: was there some definite change in rostering arrangements or were the team leader's duties reclassified in this instance?

Mr Harris—We can check that for you but I can, perhaps, give you a better example—

CHAIR—This is heightened, as I said before, by the complaints made by the union. It might have been just the day we went in there: the parliamentary committee is here, everyone is on their best behaviour, the place is as quiet as a tomb, everything seems to be pristine and everyone is terribly focused. That is certainly the impression it gave us. Some of us have been in twice, once in this term of parliament and once in the previous term, and we got the same impression both times.

Then we heard the union and there was a bit of niggle in it but then there was a bit of substance and we wanted to know just how far the substance went and whether there was a fatigue problem in those operations. Bear in mind: those two operation rooms control every aircraft in the Australian part of the South Pacific and they do not just have one aircraft on their screen; they have many.

Mr Harris—A better example is the Sydney report referred to, also, in our advice to the committee. As a result of a series of—

CHAIR—Mr Jull touched on that and I would not have minded a comment on that. Were there changes introduced as a result of that?

Mr Harris—Yes, immediate and overnight. In fact, there was a 12-hour meeting in the department with Airservices at CEO to CEO level to thrash out immediate changes. You could ask the union. We see the same thing you do: some of it is a union agenda; some of it is quite serious. You cannot separate the two. What you want to do is see the change initiated. BASI did a systemic report on that which, viewed from one perspective if you read the report, is highly anecdotal, therefore not necessarily as analytical as you might prefer from an objective perspective. But it did not matter in the end because there was enough anecdotally to be able to say, 'You need to make serious changes here.' Serious changes were made. We will look up the specific one in relation to the 747-767 separation but I think you can be reasonably confident that you do get immediate response.

Airservices, in introducing the TAAATS system, I think have been remarkably effective in their planning. It has been introduced over what must be nearly a two-year period since Cairns started at the start of last year until now. They have run it slowly down the coast. They are realising that Sydney is as complex as it is; therefore it will be the last to transit. They have got a very effective planning process in place for this.

CHAIR—Certainly superficially you could see that was happening anyhow. Our concern is that we are in an era of commercialisation of government and corporatisation of government entities, a certain relaxation of industrial laws, a bit of the pushing of the envelope by some people, exemptions that you referred to, and if all those are kept in their categories and overviewed and audited probably there will be no problems. But, if you see those running off at tangents, the cumulative effect of some of those could be, especially in relation to fatigue, that we have missed something. If we miss it in one of those operation rooms, as happened in the control unit in Sydney, you have really got a very potent potential incident on your hand.

Dr Lee—If I can just make a couple of points on that, Mr Chairman, the systems that we have in place within aviation in terms of incident reporting tend to bring these things to light very quickly. As Peter said, when there is a safety issue that needs immediate attention we issue a recommendation straight away, and this can be acted on very, very rapidly.

The other thing is that, as these changes have gone on, because we are well aware that they are occurring, we monitor the changes in air space management, we look at the incidents that are coming out and try to be as proactive as we possibly can to identify just those sorts of things. But it is like in any situation, when you are introducing a new aircraft type you often have glitches here and there as the aircraft comes into service. It is universal. So I am sure that with TAAATS you will get similar sorts of things.

CHAIR—Things they did not foresee at the beginning.

Dr Lee—Sure. The classic example is the Mercedes-Benz team at Le Mans. The car looked terrific, but it took off several times in the main straight because no-one had picked that. Showing it to people they say, 'This all looks terrific; as far as we can tell it is going to be perfect.' But then you always have to have systems in place, as Airservices do, with two systems running parallel for a while to pick up those unforeseen issues that come out.

But, at the working level, I am advised that we have an open file on passing this sort of information on to CASA. I understand that they are considering now looking at regulating their traffic controller hours, but it is something you can ask them.

CHAIR—We have gone over time, but I think it was very important that we did so. I trust you will come back to us with that information.

Dr Lee—Yes, certainly.

CHAIR—You are familiar with the system. You will receive a copy of the *Hansard* draft. Thank you very much for your attendance today. If, by the end of the inquiry, some of these things need clearing up I trust we can call one or other of you back to talk about it. Thank you.

Proceedings suspended from 11.29 a.m. to 11.54 a.m.

ACTING CHAIR (Mr Gibbons)—Before proceeding, I wish to advise all witnesses that, although the committee does not require evidence to be given under oath, committee hearings are legal proceedings of the parliament and warrant the same respect as the proceedings of the House itself. However, the giving of false or misleading evidence is a serious matter and may be regarded as a contempt of the parliament.

ELSE, Professor Dennis, Chairman, National Occupational Health and Safety Commission

ACTING CHAIR—Welcome, Professor Else. I thought we might have a five-minute or six-minute overview and then we will go to questions.

Prof. Else—Thank you. The National Occupational Health and Safety Commission has, in the last few years, reformed some of its activities. The directions that have been set by the commission and then endorsed by the Labour Ministers Council in November 1998 really have been to try to provide the infrastructure that will enable, most usefully, improvements in health and safety to be made in the country—recognising that the national commission does not actually produce legislation or regulation itself; it can only provide frameworks, which others then give legislative effect to—and also try to ensure that we speed up the learning that takes place from one jurisdiction to another around our country.

There are five main themes that are worked on. One is providing comprehensive and accurate OH&S data that you can make comparisons with and that is partly being used in a comparative performance monitoring role amongst the jurisdictions. Then there is facilitating and coordinating OH&S research efforts; developing and updating nationally consistent OH&S standards and framework, which may be part of what we may wish to discuss; coordinating and disseminating OH&S information on practical guidance material and so on; and, more recently, developing a national improvement framework to try to get all parties to work in similar ways as we move forward.

I have been chairing the national commission since December 1996. We have been moving, during that period, from a time when, using the example of fatigue and the issue of this inquiry, the effort was in researching the problem to gradually moving from many of the studies that get mentioned in our submission—the specialists that you have had before you have been partly funded by the national commission in years gone by—towards trying to close the gap to now implement solutions. With our submission we put forward materials showing how during the year before last there would have been heavy emphasis on looking at case studies of success stories and on implementing improvements. More recently over the last year, that has gone to even greater simplicity, taking the lessons that are learned such as in the Nolans case, down to a few pages that people might actually read. The whole thing has been trying to close the gap between what we know and what gets applied in practice.

I think we have continued in this area to have a bit of a watching brief. My colleague Paul Graham has not only run these programs over the last couple of years but, at the moment, would be spending 10 per cent of his time in a watching brief in this area. We have gained a lot from reading submissions and from reading the transcripts from your sittings. I think that there can be no doubt, from what I read, that the principles of occupational health and safety that have been applied elsewhere are equally applicable in this area of activity.

Those principles broadly are an attention to identifying, assessing and controlling risk and then putting in controls. You attempt to go in a preferred order or hierarchy where you control things at source wherever you can and only where you cannot control them at source do you worry about influencing people's behaviour. I think there are many of the examples that have been put forward to you that fit perfectly in there. The improvement of the

working environment, the improvement of the sleeping environment, the off-road facilities and a whole range of things there go back very high in the hierarchy of control.

As we have developed, we have recognised in health and safety that, although the legislation in each state enables action to be taken up the chain of responsibility, the impact of most activity has been directed more at the workplace than the occupier. We are going through that transition of trying to find better ways of influence further up the chain. We have major projects looking at how you influence CEO behaviour and small business and so on.

I think we are also starting to understand that the challenge of regulating and influencing what goes on in workplaces is not an easy one and needs to be taken in a holistic and system based way. More research is coming forward that is looking at and providing an underpinning framework to help us to select appropriate mechanisms of regulating and influencing activities in workplaces even at a time when workplaces are getting smaller and smaller and more distributed.

In some of the evidence, I got the sense that occupational health and safety jurisdictions are looked on as people with a big stick and very much as the enforcers of a prescriptive form of regulation. To be fair to my colleagues on the National Occupational Health and Safety Commission and all of the jurisdictions of OHS authorities represented there, I should say that there has been a significant movement forward from prescription. There may have been days of specifying exactly what height a rail would be through to performance standards where, for instance, with noise you would be specifying what the maximum exposure limit should be. We would have been allowing anyone to reach that by whatever means they liked.

More recently there is an understanding of principle or process based regulation, characterised by fatigue management systems, occupational health and safety systems, with those sorts of arrangements where you are setting in place a desire for certain principles to be adopted. Then the challenge—and it is a challenge—becomes to test whether those principles are not just written into a document that is on a shelf but are being lived out in the day-to-day realities of people's working lives. That is a challenge that is focusing many of our efforts.

In summary, we are moving to try to understand more how to be smart in the way that we regulate. We have a growing body of researchers in the country now that are starting to cross the discipline boundaries, look at what we have achieved in environmental regulation, and then say, 'What does that teach us when we come to try to influence change in workplaces?'

Some principles starting to be developed are captured in a recent book called *Smart Regulation: Designing environmental policy*. I think the principles bear reference in a broader domain. There are about five in number. The first one states it prefers policy mixes incorporating a broader range of instruments and institutions; the second one prefers less interventionist measures; the third one is a dynamic instrument pyramid that you need to achieve the policy goals. There is the development in regulatory activities of a pyramid of enforcement. You start at the bottom with reversible actions and then ascend the pyramid

until eventually you may withdraw the ability of someone to operate. Hopefully, learning takes place along the pathway and people develop much better practices.

The studies I have spoken of are now moving that to recognise that the enforcement pyramid does not need to be just applied by the regulators. It can be applied by business as well, so that there is another face of this pyramid in which you start at the bottom with things like responsible care in the plastics and chemicals industry. If you want to play the game, you can join the club, but you have to show that you are keeping within certain principles, and then you eventually move up in terms of sanction if you fail to meet the standards.

The fourth issue there is to empower people that are in the best position to act as surrogate regulators in, for example, insurance. What we see in a state like South Australia, which has the highest level of self-insurance capability in workers compensation, is the development of a refining of the processes to cause industry itself to start to influence the behaviour via the insurance dollar.

The last one in that set of recommendations in the book I mentioned is to maximise opportunities for win win. Much of this attention is really coming back to trying to get a correspondence between what we say the standards are and what are the standards that are really being lived in our workplaces. That challenge is a great one. If, for instance, the standard is wonderful in theory but only half the workplaces adopt it, we can only have halved the risk. The real challenge is implementation and the development of a form which is capable of getting maximum implementation.

ACTING CHAIR—You are obviously saying that a national standard is the way to go. Have you got any international examples where that has worked?

Prof. Else—I am not saying that necessarily a national standard is the way to go.

ACTING CHAIR—Why isn't it?

Prof. Else—I don't know whether it is or it isn't. What is important is a process which gets the maximum utilisation of the principles embedded as close to the reality as possible. It is early days yet. We do not know whether the Western Australia one is going to be the thing to run with, but let us hope that we have some good evaluation taking place.

It would seem to me then that it may be that elevating the principles behind that to some sort of national guidance may help others to spread this all over the country. But the real way that you would get there, in my opinion, is to get that embraced by a much wider range of industrial groupings throughout our community, and that may be via a national standard. But, given our experiences with trying to get implementation of national standards that have already been agreed to, we are still sensing that there is some learning to take place as to processes to go through to get the maximum transfer of that into real workplaces and real industries.

ACTING CHAIR—What would be the implications for Commonwealth and state if there were a national standard? How difficult would it be?

Prof. Else—Not at all, because the states could ignore totally whatever came from the national commission because it is up to the states to choose or not to choose to implement. We have tried to engage with the ministers responsible for the OH&S domain in each jurisdiction to the point where we have agreed that we will not go ahead with writing new standards unless we have their agreement that the standards are necessary and by implication there is some commitment to implement them. Certainly, from my position, it seemed a pointless exercise to write national standards unless you have some means of then getting the pressure behind their being implemented. So the processes would be that a request would come in, we would work on that and under our current agreements we would put that through to the workplace relations ministers council for their endorsement of the need for such a standard. Then comes the challenge of writing it.

It seems to me that with guidance there is not a lot more research that needs to be done. Admittedly, I am not a researcher in the area, but it would seem to me that there is considerable guidance and commonality of view from what I have read of the evidence that has been presented to you. It is not as though you are breaking new ground.

Mr HARDGRAVE—So, essentially, you are suggesting that the concept of national standards is hard to tie down at the moment. We need to be doing what we are currently doing and that is getting different states and jurisdictions to run things up the flagpole and see which one is the best one to salute.

Prof. Else—We are in the position of trying to work out what is the best method forward. In retrospect, when the national standards that have been developed by the National Occupational Health and Safety Commission were formulated, there does not seem to have been a clear understanding of whether they were to be a lowest common denominator that people were being encouraged to go beyond or an expression of leading edge and best practice. It would seem to me that with those sorts of things you would need to ensure you are clear on them before you start to document things. We are currently going through that process and have funded various research work to give us best understandings from around the world of different models of trying to get commonality of outcome rather than commonality of what is written in the regulation.

Mr HARDGRAVE—What industry sector are you doing work in?

Prof. Else—We are not restricted to any industry sector really. There happens to be a considerable body of work that went into transport over the last couple of years.

Mr HARDGRAVE—Road transport?

Prof. Else—Road transport only.

Mr HARDGRAVE—What about air and sea? Are you doing any work there?

Prof. Else—No.

Mr HARDGRAVE—Because you just have not been able to?

Prof. Else—With the wealth of opportunities open to us, it has not been the highest priority and there were other, as it were, regulators in the game.

Mr HARDGRAVE—Do you suspect that there is not a lot of recognition that fatigue is a factor in relation to accidents in the workplace, or is it growing as a recognition?

Prof. Else—I think it is growing but I think it highly unlikely that even the most practical guidance that is coming forward in some of the documents to you is widely known. I would not mind betting that many of us have understood our own past practices with greater clarity as a result of reading some of the advice and research that has come before us.

Mr HARDGRAVE—The public bears a great deal of the cost associated with workplace accidents. In order to try and get fatigue management plans in place in workplaces large and small, stationary and mobile, do you think we perhaps need to tie the cost of those accidents more to the people associated directly with them?

Prof. Else—The processes that seem to be operating out of the NRTC in terms of the chain of responsibility would seem very sensible activities. In occupational health and safety we are tending to still have to face up to those challenges at quite a late stage. We have tended to go down the direct pathway of the influence on what happens in the workplace. A body of research is then coming out much later saying that the real factors that influence whether anything is done are not the health and safety direct pathways but a whole range of other real pressures that are in our workplaces causing people to act in certain ways.

Mr HARDGRAVE—It is almost as if some people in some businesses think that the total commitment to ensuring accidents do not occur is paying the premiums for the insurance policies, rather than looking at other practices.

Prof. Else—Yes. There are various studies that show that most people who are paying the premiums for workers compensation insurance have no real understanding of how their individual performance influences in any way what they are paying, so various of our workers compensation authorities are starting to take that knowledge out to CEOs and around the boardroom tables to try to get greater enlightenment as to how they could improve their bottom line by changing where they are in the distribution of poor to good performance in their industry.

Mr HARDGRAVE—The nature of your comment about the need to perhaps pull back from a prescriptive, enforced approach to OHS matters would suggest that you would believe there is not a one size fits all approach with these things.

Prof. Else—Exactly.

Mr HARDGRAVE—Given that is the case, we do have difficulty because, as legislators and regulators, the natural tendency is to come up with the one size fits all approach. How do we bring about this cultural change? We talked a moment ago about maybe meeting the real costs associated with accidents back onto those directly associated with it. Are we also perhaps looking at the idea of getting them to get a fatigue management plan together that is

reflected in their workplace arrangements, their industrial agreements and all of those things, and then using that as a measure of enforcement? In other words, if an accident occurs, God forbid, we can then go back and see whether they have actually infringed their own plan.

Prof. Else—One of the things that the national commission is working on, and has worked on for a number of years, is trying to improve the performance measures and to complement those outcome measures that you suggest to some process measures and some lead indicators. Therefore, if we are moving to a greater reliance on internal control, as it were, in our organisations, then you need to have as regulators ways of auditing the degree of real control that is being exercised; not taking the documents off the shelf and saying whether those will work in theory, but being able to measure what real degree of control is being exercised by this system in this real organisation.

We are doing quite a lot of work at the moment with another challenging industry—the construction industry—in trying to find the best mix of measures that can be used by companies to assess the degree of real control that they have over the risks associated with their businesses. Some of those go to quite positive measures such as the speed of correction in their organisation. When someone raises something, how long does it take for that to be solved and for the person who raised it to know that it has been solved?

Mr HARDGRAVE—Do you think we should be looking at measures, as in ideas and things that we can bring in, rather than measurements—rules, regulations, approaches, agreements, whatever—that ensure that an employer is not putting an undue expectation on an employee to meet a certain deadline? Should we be bringing requirements into workplace arrangements—AWAs and industrial award provisions—that there should be a responsibility on the worker to show up fit for work, a responsibility on management not to apply additional burdens on their staff and options for workers to say, 'I'm unable to complete this task because I am fatigued; I am not well; I cannot do this safely'? Should we be bringing these factors into play to try to protect all the people?

Prof. Else—Whatever system we use across the breadth of health and safety, I think we should be bringing this one into play. It seems to me that the more enlightened everyone can be in the system in terms of what the important issues are, the better. I do not think that is going to answer your point, though, I am sorry. I have missed out.

Mr HARDGRAVE—I will put it to you in a slightly different way. We were talking before about, say, the analogy of a truck driver getting into a truck at 4 o'clock this morning, for instance, or an aircraft maintenance engineer, for instance, starting at 11 o'clock last night, for that matter. There was a football match Saturday night and Sunday morning. We were up until 4 o'clock watching that and then we watched the cricket all day. Yes, we have had passive time in our lives when we have not been clocked on at work. But it is pretty hard work when you do not have proper rest and you show up for duty. You are not really as fit for work this morning or last night as you might have been had you had proper sleep on Saturday night. Those sorts of factors do not seem to be well understood by anybody—workers and management—and the people who pay the price ultimately are members of the public, workers themselves and managements themselves.

Prof. Else—Yes. That is about community understanding and values changing over time, and I think we have seen changes over time in alcohol use on our roads. They have been relatively slow in coming and they have been shaped by a whole range of factors, but it is possible to effect that change. This area of fatigue management and our personal responsibility to manage our own lives will be something that, again, will take some years to come through. Personally, I feel that we should try to make sure that we take some pretty long-term decisions and be prepared to lay the foundation for long-term change, rather than necessarily expecting that we are going to see the change happen overnight. There is a mix of a whole range of measures, some of which are capable of influencing the situation relatively quickly but others are going to take a lot more time to seed and grow in our community.

Mr HARDGRAVE—It is fair enough that anybody hiring somebody would expect their employee, when they are clocking on—whether they bundy on or otherwise—to be fit for work. But I would have thought that there would be a duty of care on the employer so that, if their employee is not fit for work, they should clock them off and put them on sick leave. Likewise, in the case of somebody arriving and holding up a pretence that they are fit for work when they simply are not, if they are pushing a pen, literally, they might be able to get away with Mondayitis but if they are maintaining an aircraft or driving a truck or something they may not. Are these the sorts of factors that also should be well understood?

Prof. Else—Most definitely. I think that those factors will come into play in different degrees depending on the types of jobs you are doing and the degree of risk associated with a bad decision on your part. I think that the level of that understanding in our community is probably very low.

Mr JULL—Just going back to some sort of national standards, could you tell us how much sense of unanimity there is between the state organisations and you? Are they generally cooperative and generally working towards the same goals? Do they listen, or do we have these huge state divisions?

Prof. Else—That is a hard one in that it probably changes over time. It changes with the degree of sensitivity shown by the national commission, and the sensitivity of what its role is and how it can add value to the jurisdictional efforts. Again, it is very easy from the national commission perspective to think that you could be at the centre of the world and that if only these jurisdictions were to do what is obviously the right thing to do the world would be a lot better. But from that national perspective you do not have the local understandings, you do not have the local priorities and the local pressures on you, and you are more divorced from reality, in my opinion. Therefore, different realities impact on different jurisdictions at different times.

Mr JULL—We have seen evidence on that. If you were going to approach something like fatigue through this line it would seem to me to be a bit of a waste of time if everybody was not going to hop on board.

Prof. Else—That is certainly the view that I have expressed and the pathway that I have tended to go in terms of working with the workplace relations ministers. It seems to me that if our real challenge is translating what is on paper to what is the reality in our workplaces,

then you really have to be in harness with those organisations that have contact with the workplaces. That is why we have gone down this path of being comfortable with the idea that, unless we have some unanimity about pushing forward with the regulation or a standard, there is really not much point in working on it. But we are still learning. It is a different ball game. In the past we had a belief that if you wrote the thing then you were finished, that that was your job; whereas now it is just the start of the whole thing when you have written the standard, as you are finding out with all your evidence about the challenges that are faced.

ACTING CHAIR—What are some of the positive initiatives being done by state occupational health and safety bodies? Are there some that are better than others? Which do you think are the ones that could be made to work on a national level?

Prof. Else—Clearly, the approach in Western Australia and the approach in the Northern Territory are a couple of examples where they have adopted what they have done in terms of management systems into a framework of fatigue management. I think we should be looking at those and evaluating them to see what they can teach us. But as you go to each of the jurisdictions you tend to get a slightly different flavour of the way they do things. David Dinges mentioned in his evidence how we have a strange system here where people do things slightly differently. The challenge is: can you harness that learning to get you there faster?

If you look across different parts of the country, Western Australia has always been out there ahead in electronic systems and use of the Internet. They came up with a method where before any student went to a workplace for the first time they were given on the Internet a little course in health and safety. Then, if they got at least 80 per cent, out of the printer came a signed certificate from the minister to say that they had a modicum of understanding of principles.

We are trying to progress those sorts of things through other jurisdictions. There are thousands of youngsters that have learned a bit of health and safety by those means. In South Australia, a great deal of learning around the insurance pressures can be brought to bear, and there are also strategic industry initiatives where they brought them together in tripartite groups and got them to have a strategic framework within just their industry. One of these is in the road transport grouping. We will look on and evaluate them because it seems that they are refining initiatives, and there will be a much greater ability to implement them on the ground by doing it industry by industry. Do you want me to go through all the jurisdictions?

ACTING CHAIR—No.

Prof. Else—My apologies! But in each of the jurisdictions, you can pull out some wonderful examples of what they are doing. Unfortunately, from a national perspective, sharing their learning is not uppermost in their minds. Unless you put systems in place to cause the good ideas to flow, they get locked inside a jurisdiction and do not get shared. One of the ‘sharings’ that we do is the Transport Industry Safety Group, which came out of Victoria. It has health and safety specialists from each of the large transport companies meet every three months, and they run an electronic exchange of information. Again, if we can speed up the flow of good ideas, we will be benefiting the long-term development.

Mr HARDGRAVE—There was a line of questioning pursued earlier this morning about trying to enforce, encourage, coerce or caress—whatever perspective you have—some of these fatigue management plans through quality assurance style means. In other words, the federal government could play a lead role by bringing in, over a period of time, the agreement or otherwise to contract certain companies based on whether or not they have fatigue management plans in place. Do you think that would be a reasonable initiative to follow?

Prof. Else—In another life I chaired the Australian standards committee on health and safety management systems, trying to move health and safety management into a quality framework. We eventually put it to international standards to try to get them to adopt it, but the US managed to scotch that quite well. We still have a national Australian standard on health and safety management systems which does exactly what you are suggesting: it provides a mechanism for people to be assessed in terms of a quality management principle and health and safety. We have good examples of where that has worked, particularly in New South Wales in the construction industry. I would think that is just another facet of what we should be promoting.

The challenge is to make sure that your methods of auditing are really good and that you are not just clogging up our businesses with paperwork. I would not stop people from doing it; I would positively encourage it. But I would also encourage them to take a big dose of simplicity as they try to implement it. The challenge for all of us in this area has been about how to find the simplicity rather than the simplistic and how we make sure that we get wins in terms of employees, business outcomes, health and safety, quality and productivity—all running hand in hand. There are many examples of that being the case in the generality of health and safety. From the evidence that has been put to you by organisations like Nolans, Finemores and so on, from what I read, they are telling us that the same is certainly true in large organisations and is coming to the smaller organisations—but not the very small organisations—at least with respect to road transport.

Mr HARDGRAVE—So you would see it perhaps being received more as yet another one of those Canberra imposts on our life rather than perhaps being embraced as a reasonable request?

Prof. Else—No, but I think it is important to explore that and find the pathway down which you can do it in a strategic and cost-effective way, and I think you can. I think there are methods of doing that.

Mr HARDGRAVE—Talking about cost-effectiveness—and this was put to us in response to an earlier question—it might be unreasonable to impose fatigue management on a small solo truck driving operation, for instance, and yet one would also submit that the cost on the public could potentially be pretty horrendous if a small solo truck driving operation does not have a fatigue management plan.

Prof. Else—The equivalent in generalities of health and safety would be principles like Safety Map in Victoria. There are examples of tiny organisations that have introduced simplified forms of that and gained great benefits. I remember Super Drives, which turns out to be just the laying of tarmacadam on pathways, in shopping malls or wherever. The

consultant who came in to help them get their Safety Map accreditation gave them two things. One was an understanding of questioning in the hierarchy of control—'How could you do this job in a way that there was less risk of interfering with the public in the first place?' You could do things as simple as asking, 'When is this school closed for a holiday? It would make more sense for me to lay the tarmacadam on that day than on another day.' So these are very simple things. There was an aide-memoire to do that and the separate aide-memoire: when you have tendered for the job and you got it, this is the list of things you will need to have when you get there on day one.

The person who runs that is on our small business steering committee, Charles Richardson. He has now increased his business because it has given him a degree of organisation that he did not previously have, in my opinion, in the way that the work is done. I think in his analysis he has got health and safety. In my analysis he has got a bit more prioritisation and organisation into his small business than he previously had, and the health and safety has benefited him.

Mr HARDGRAVE—Are you saying that planning for health, safety and fatigue issues is not just a cost to your business but also a benefit?

Prof. Else—And if you have got a rig worth $300,000—and I do not know if $300,000 is more than the produce on the back of it—I would have thought you would have a fair old investment there to increase your skill at managing and planning.

Mr HARDGRAVE—You would not drive on bad tyres; why would you drive on bad sleep?

Prof. Else—Yes.

ACTING CHAIR—Thanks very much for appearing today. If we have any further questions, I trust we can write to you and get a response should that occur in the future. The secretariat will also send you a proof copy of your evidence as soon as it is available, and of course it will also be available on the parliamentary web site. Thanks very much for appearing.

Prof. Else—Thank you very much. It is really important what you are doing.

Proceedings suspended from 12.38 p.m. to 2.05 p.m.

HARROD, Mr David, Manager, Operational Standards, Maritime Safety and Environmental Strategy, Australian Maritime Safety Authority

QUIRK, Mr Patrick, General Manager, Maritime Safety and Environmental Strategy, Australian Maritime Safety Authority

CHAIR—Welcome. I advise you that, although you are not under oath, committee hearings are legal proceedings of the parliament and warrant the same respect as those of the House itself. The giving of false or misleading evidence is a serious matter and may be regarded as a contempt of the parliament. Mr Quirk, would you like to give us an overview of your submission?

Mr Quirk—Certainly. Thank you for the opportunity to expand upon AMSA's written submission and also for the opportunity to take any questions which you may have for us. Initially, I would like to request that the committee notes that AMSA's CEO, Clive Davidson, is currently overseas at the IMO Assembly, and he has asked me to apologise for his absence from these important hearings.

In the AMSA paper, we provided an outline of the working environment and raised a number of issues that impact on the overall health and wellbeing of ships' crews, and not just fatigue related issues. These include changes in trading patterns, the nature of cargoes, the impact of technology, changing aspects of the coastal trade, the offshore sector, the blue water sector, aspects of the captive and environment, shiftwork, weather, noise and vibration. The paper also describes the changes in the work environment that can be exacerbated unless the matter is properly managed. There are two major issues for AMSA that flow from this: our work to raise awareness within the industry of the Australian maritime OH&S system; and our efforts to ensure compliance with convention requirements for hours of rest, particularly on overseas vessels in Australian waters.

Australia's maritime industry is fortunate in that it has adopted a robust OH&S management system aided by the operation of the Occupational Health and Safety (Maritime Industry) Act. With foreign flag shipping in Australian waters, the emphasis is on verifying compliance with the provisions of the STCW convention, which focuses on seafarers' competence and abilities. The paper also addresses a number of initiatives being undertaken by AMSA, including work within the International Maritime Organisation, implementation of the various IMO and ILO conventions, involvement with the Seafarers International Research Centre in the UK, the retraining of Australian crews with emphasis on OH&S and safety culture issues, the code of conduct, the FASTOH study and the ISM code.

Based upon our understanding of the various submissions to the committee, there appears to be a need to clarify AMSA's jurisdiction as to the different role between AMSA's responsibilities and those of the states, between coast and port pilots and the relationships between the pilot and the ship's crew. AMSA's responsibility is to ships engaged in interstate and international trading, primarily ships that are subject to international conventions, but not exclusively so. The majority of smaller ships and those in intrastate trades are the responsibility of the various state marine authorities.

AMSA works closely with these authorities, particularly through the National Marine Safety Committee, to achieve standardisation of approaches to maritime regulation, but there are limits to our jurisdiction. I appreciate that you noted jurisdiction as one of your issues during the recent *Ship safe* report. Similarly, only certain aspects of pilotage come within AMSA's sphere of influence. AMSA has direct regulatory responsibility for coast pilots but not for port pilots. Port pilots are the responsibility of either a state marine authority or a port authority.

In relation to coast pilots, AMSA initiatives include the code of conduct, monitoring of hours of work and rest, licensing, prescribed training, professional development and medical standards. We have also commissioned a number of studies into fatigue and risk in the Great Barrier Reef, and we are working on the recommendations of those reports now. Issues of port pilots' employment are matters between the employers and the pilots and not within AMSA's jurisdiction. However, it is important in the overall maritime safety context that each of the parties develops an awareness of our OH&S and fatigue management responsibilities.

There are a number of other issues raised in the submissions to your committee which we will be happy to answer questions on. AMSA can only effectively respond to safety issues on the basis of objective monitoring, good data and effective liaison and communication. AMSA's role is evolving from a purely enforcement role to one whereby the authority works with industry to identify and manage risk in line with the Robens approach to OH&S. AMSA plans to continue to work with industry and with the International Maritime Organisation to address emerging and existing issues associated with safety at sea, particularly fatigue. Thank you.

CHAIR—To get the questions under way, one of the areas that has troubled us most is the area of pilotage. You say in your submission that you have introduced the requirement for rest periods for marine pilots. Precisely what are those requirements that you have introduced, and do you take into account the more passive side of it—travel time and getting to work and, if not to work, then to the port where you are rostered? By way of analogy, in the transport industry we have been told that on paper a lot of transport companies observe the laws but, in reality, if you add some three hours loading at a warehouse and another four hours to get your slot in at the supermarket bay, effectively you have done another seven hours for the day. I would like to hear your view on that and whether there may be some of that in the piloting area. Secondly, there has been a suggestion by the Marine Pilots Association that the privatisation of the industry has led to lower standards. I would like your comment on that as well, but in particular the first question is the rosters.

Mr Quirk—I will give a little bit of history first. Prior to July 1993, the safety regulation of coast pilots to pilots in the Great Barrier Reef and the Great North East Channel was under the Marine Board of Queensland. In July 1993, following an agreement between the Commonwealth and the Queensland ministers for transport, safety jurisdiction transferred from the state body to the Commonwealth and AMSA had the responsibility of safety administration. Our safety framework is more comprehensive, more robust, than the previous Queensland system, although within our current system there is no economic regulation whereas the Queensland system had a component of economic regulation.

CHAIR—What do you mean by economic regulation?

Mr Quirk—Under the Queensland system, there was an approved organisation which managed the pilots. They all worked under the one secretariat, whereas under our safety framework there is no provision for economic regulation. Since July 1993, our safety regulatory framework has gone under evolutionary change, and we have also commissioned an external review of that safety regulatory framework.

One of the issues we were concerned about was the historical practice where the pilots self-regulated their work activities. This meant that they had their own internal mechanisms for division of work, for allocation of work and for those occasions when rostering difficulties prevented proper rest periods being maintained. We respected that position. It has been going for 100 years and they had developed a fairly good system, but in terms of our own responsibilities to parliament for safety regulation, we developed a set of guidelines for fatigue management, which primarily looked at what reasonable rest period over what period of time will be needed in relation to the various pilotages on the Queensland coast.

There are two main pilotages. There is the inner route from Booby Island down to about Cairns, and there is Hydrographers Passage, which takes the bulk carriers out from Hay Point. For each of those two main pilotage areas, we have prescribed minimum levels of rest over a period of time following each pilotage passage. That is written into the pilots' code of conduct, and I would be happy to forward for tabling a copy of those guidelines.

We recognise that sitting here in Canberra, or at a meeting with the pilots in Brisbane, we cannot provide guidelines for every situation that may develop which they have to confront, but we believe that, in consultation with the pilots, we have developed a set of framework guidelines which provides a pragmatic approach to fatigue. That is under constant review. The pilots at the moment have put up a couple of suggestions for change, and we are looking at that at the moment.

In terms of whether or not travel time constitutes part of that framework, we have had a pretty flexible approach to this. There are some scenarios—for instance, technically a pilotage does not start in a compulsory pilotage area until the ship passes a latitude just north of Cairns. However, for reasons of access or for ease of transfer between the shore and the ship, the pilot may have joined that ship in Brisbane and sailed as a quasi passenger for two days, or 2½ days, until they reached the appropriate latitude for compulsory pilotage. Do you include that captive time on the ship as part of the pilotage duties? It is a difficult area.

CHAIR—Are they required to do any office work or anything like that?

Mr Quirk—No, primarily they would probably do some private work on their charts and talk to the ship's captain, but there is no formal work involved.

CHAIR—Do they do any informal pilotage, telling you to be careful of this and that?

Mr Quirk—Both companies do offer pilotages south of Cairns, but it is a non-compulsory area. That is a discretionary service which could be accepted by the ship or not. Another example would be a ship that leaves Mourilyan, a sugar port on the Queensland

coast, say at half past four in the morning. The pilot from Cairns goes down there at 8 o'clock at night and gets on board at 10 o'clock at night. Suddenly they are in a strange bed, with different noises and a different environment. It may be hot and the airconditioner is not working. Do you count that as part of the pilotage task?

We have taken the view that each pilot has to directly accept that on the basis on which he faces a situation. He knows the outcomes we expect, and we would expect that pilot to exercise his professionalism in determining at the end of the day how his hours are when he gets to Thursday Island. We are aware of those issues which can impact on pilotage, apart from the time on the bridge, and we have tried to factor them into the guidelines by allowing the pilots a bit of discretion in how they apply the guidelines.

CHAIR—When he gets to Thursday Island, does he fly back to Cairns or does he have to bring another boat back?

Mr Quirk—It depends on the rostering.

CHAIR—How long would you leave him there?

Mr Quirk—That is up to the companies to decide. From our perspective, once he gets to Booby Island and gets back into TI, he needs a certain amount of time over a certain spread of hours before he can pilot again.

CHAIR—On a slightly different tack, I was saying that you trap the poor guy on Thursday Island for four, five or six days just for the convenience of the company and there is an element of work involved in that.

Mr Quirk—Yes. As I understand how the companies operate—

CHAIR—If it was said that, if you did not have a ship to bring back within 48 hours, you would be flown home, that might be a different story.

Mr Quirk—It is demand and supply. At certain times of the year more ships are going south than north because of the charging arrangements.

CHAIR—Sure.

Mr Quirk—I understand that pilot companies do not like to get their pilots on TI because it is dead time for them. They lose the ability to send ships from Hay Point or from the southern ports. I understand that if there is not going to be a ship in two or three days they fly them south.

CHAIR—In effect, you say that the lack of uniformity is in rosters and workloads that marine pilots talk about that are skewed somewhat by these periods of passive work, for want of a better expression?

Mr Quirk—The nature of the coast pilot's task is unique, if I can use that word. There are very few pilotages throughout the world which are as long or as varied as the pilotage on

the Queensland coast. We have taken the position that to attempt to prescriptively regulate that service is near impossible. We prefer to work with the pilots on outcomes, on guidelines and codes of practice—

CHAIR—You are relying on their professionalism.

Mr Quirk—Yes, but there is also a sanction. If there were an incident and the MIIU, the Marine Incident Investigation Unit, came in and found there had been a breach of the guidelines or the code, that would be noted. We have in the past taken disciplinary action against pilots who, we felt, broke or ignored their responsibilities. There is a sanction there.

Mr St CLAIR—I will take up that point because we have taken evidence over that whole question of the length of time these people do it. You raised in your submission here the fact that there could be nice sunny days and nights of dead calm, or you could be in the middle of a cyclone for days. How long is the period normally of that pilotage? What mechanisms are in place if you really do get into that very dreadful situation where a pilot cannot see and he has squalls, big seas, and all sorts of things? How do the pilot people manage?

Mr Quirk—On a reasonable ship, the pilotage between, say, Cairns and Booby or Cairns and Thursday Island is roughly in the vicinity of 40 hours or 42 hours. That area is a prescribed compulsory pilotage area.

The relationship between the pilot and the ship's crew is very important. The pilot does not take charge of a ship; the pilot is there to provide assistance and advice to the master. In practice, different pilots interpret that in different ways. Some pilots work with the crews as a partnership and other pilots virtually assume that the crew are looking to the pilot for every bit of advice on every alteration of course. It depends on the ship, it depends on the pilot and it depends on the crew. In a worst case scenario in the wet season, where a ship is, say, coming north and going through a series of north-west monsoon squalls, it is feasible that the pilot may not actually have a physical break for that period. He might feel that he is obliged to stay on the bridge for all that time, although a lot of that time would be passive time when he just needs to be there rather than doing something.

Mr JULL—That is 42 hours.

Mr Quirk—That is right.

Mr GIBBONS—That is 42 hours straight.

Mr Quirk—On duty but not on his feet. There are opportunities to take short breaks.

CHAIR—There would not be many places in the world where you would cop a workload like that.

Mr Quirk—No. That is why we have done a series of studies. There was the FASTOH study, which I have mentioned. We have also done DMV risk assessment. It is unusual and it looks strange. I must admit it has evolved over 100 years and it has worked well, although

we appreciate, in terms of contemporary risk management, that it is unusual. We would see that over time we will work with the companies and the industry to ensure that that risk is being well managed.

There have been suggestions for ships carrying two pilots and for ships to change at Lockhart River. Each of those suggestions has merit and it is part of our ongoing study to look at that management situation.

Mr HARDGRAVE—If you had one whopping big cyclone you are not exactly going to be able to fly a new pilot on or off the ship, are you?

Mr Quirk—No. I must admit that ships sometimes struggle to accommodate one pilot, let alone two. There are logistical problems involved.

Mr St CLAIR—One would presume that at the end of the pilotage, if it were such a case, the company would take into account the stress or the tiredness at the end of the day.

Mr Quirk—In addition to our minimum rest period we would expect in that situation for the company and the pilot to exercise the discretion they can exercise to have a longer rest period.

Mr St CLAIR—Because they have flexibility and non-prescriptive hours?

Mr Quirk—That is right.

Mr HARDGRAVE—So there is support through the awards or workplace arrangements that they have?

Mr Quirk—The pilots are primarily self-employed or contract employees to two or three service companies. We rely on the professionalism of the pilots, backed up by the code of conduct and the fact that they know that, if they break that code, there is a sanctioning mechanism there by which they can be suspended. We have suspended pilots in the past when incidents have occurred.

Mr HARDGRAVE—Let us go to worst case scenario because it is what people do when they are asking questions of people such as you. We have a 42-hour pilotage, clear skies and pleasant seas. It is a day trip to Bribie, as we would say in Queensland, and a sort of happy time. That is one scenario and you could probably have 42 hours of giving advice and steaming ahead. Invariably, you might slip off for an hour or two. Can you leave the bridge in that scenario?

Mr Quirk—On a good trip there are recognised periods where pilots can take short catnaps in their accommodation.

Mr HARDGRAVE—We have established that. On that worst trip scenario, in the middle of some whopping great big storm you would rely on a pilot's professionalism to say, 'I am tired; I cannot proceed any further,' to give you the advice you need to weigh anchor and stop. Is that what you are saying?

Mr Quirk—That is one option.

Mr HARDGRAVE—You have company pressures. You have to get me to the port on time, don't you?

Mr Quirk—You would appreciate that pilots going into coastal pilot service go in with their eyes wide open. They know that these long hours are part of the job. They are remunerated well and, as most or all of them have that experience in the reef, they know that at times they may be required to do these extremely long hours. That might belong with some of the emerging signs of fatigue but does not belong to the fact that this is part and parcel of the job. If a person does not accept that they can do it, they will not go into it.

Mr HARDGRAVE—I imagine also that a pilot preparing for a pilotage trip, no matter how many times they have slipped from Booby down to Cairns or whatever, if they saw the weather report saying there was a cyclone heading in, would radio ahead to the ship to stay put before they started heading down the track?

Mr Quirk—Cyclone deviations are not widely experienced in the reef. It is more the heavy monsoon rains which virtually blind ships. Even with good radar there are problems getting through rain. That is the danger area. That is the major risk for us and also minimum underkeel clearance for deep draught ships going through the Prince of Wales Channel. They have very little room to manoeuvre. That is the prime risk area.

Mr HARDGRAVE—But do we see pilots avoiding the risk by not even starting the journey on occasions?

Mr Quirk—Yes, there have been times when ships have not gone through as planned because the pilots available were not rested or the company could not get replacement pilots.

CHAIR—We have a submission that said that there has been a threefold increase in marine accidents due to fatigue in the Great Barrier Reef since deregulation of marine pilotage in 1993. Would you contest that view?

Mr Quirk—I am not quite sure what they mean by deregulation because AMSA has a more prescriptive safety regulatory framework than the Queensland government. We admit, as I said before, that we do not have economic regulation. That is a point which some pilots have been unable to accept.

CHAIR—The inference is that you are driving them harder than the previous administration.

Mr Quirk—The pilots chose in July 1993 to form two companies. It is very important to remember the history of this. They had the option of staying together as a group, operating within the framework of the Prices Surveillance Authority and the Trade Practices Commission. They chose to split into two companies. We looked back and said that that was unusual, and so did the industry, I might admit. That has resulted in a number of pilots feeling disenfranchised, displeased with AMSA and the system as a whole. There has been

more reporting of incidents due to the regulatory framework we have now and the MIIU being much more proactive in looking at safety issues.

I lived on Thursday Island for a couple of years, so I can understand some of the things that went on before AMSA took over. There were incidents in the past which were talked about around the bar, but now they are reported to the MIIU and appear on statistics. They are not the serious ones. I am talking about some of the minor ones that come up in the statistics of the MIIU.

We are concerned about safety on the reef. There is increasing traffic. We are using technology much more now on the reef to minimise risk. There will always be a risk posed by shipping to the reef. It is our role to minimise that risk. I accept that there have been a number of serious groundings on the reef. Some of them have involved ships when the pilots were not on the bridge. We look at that. I cannot agree that they are fatigue related. With the major one, the *Peacock*, we believe the pilot was not fatigued at all.

Mr Harrod—Also, since the advent of compulsory pilotage, there have been a lot more pilotages. That is another factor that comes into this. We have a very sophisticated monitoring and reporting system up there now, which means, as Mr Quirk said, that a lot more of these incidents get reported than they did before.

Mr HARDGRAVE—It is my understanding that the main beef centred around the fact that, because there was this competition between the two entities, the actual remuneration to individual pilots was obviously more competitive and therefore probably lower. The suggestion was that the experienced pilots were going to up stakes and go somewhere else, that they were not going to be as interested in the task as they were in the past. That is a fairly reasonable nutshell account of it, isn't it?

Mr Quirk—We obviously understand. We look at the pilots' commercial situations and say, 'That is their decision.' It raises the issue raised by the chairman about privatisation. It is an economic regulation issue and we are a safety agency but, in the general sense—and we look at the corporatisation of port authorities and the privatisation of the pilot service—there is no direct correlation in my understanding between privatisation and corporatisation and safety as long as the objectives of the process are clearly defined. If the accountability chain and the safety and environmental objectives of the entity are maintained—I can understand that there might be pressures on those objectives—with good sound management, safety or environmental outcomes should not be jeopardised.

Mr HARDGRAVE—That really is the bottom line of your organisation.

Mr Quirk—Yes.

Mr HARDGRAVE—So there are not likely to be pilots taking on additional tasks and therefore subjecting themselves to additional fatigue and stress in order to maintain a certain expectation of remuneration?

Mr Quirk—We accept that there is always a danger of that happening in any organisation or process of change. The safety and environmental objectives of the pilot

service or a port authority should remain the same regardless of whether they are under state government control or corporatised control. That is a basic community responsibility. There are pressures on management to achieve those outcomes in a more commercial sense but, with sound management, those objectives should not be diluted.

Mr HARDGRAVE—Would any pilot that crosses the line on those sorts of objectives find themself not being employed?

Mr Quirk—There is a fear amongst pilots, particularly port pilots, that if they do not toe the line another company will come in under a competitive tendering process and take their work. I can understand how that could see some pilots feeling pressured to cut corners and do things they would not normally do. I am not saying it goes on. I think it is a natural reaction of people who see their accepted work environment changing rapidly, and I think that is where it requires a sound understanding by both government and the pilots that things can be done differently without jeopardising safety outcomes. But it requires sensitive management on both sides and, at times, other priorities can overwhelm the issues I have spoken about.

Mr HARDGRAVE—But you would be confident that there are fatigue management programs being used by shipping companies up and down the Queensland coast. So the parameters are set. Regardless of what other factors come in and regardless of the fact that one company might come in and underbid another company to provide pilotage services, there are some lines in the sand that cannot be crossed.

Mr Quirk—There are lines in the sand drawn by AMSA and there are lines in the sand drawn by the professionals and the pilots. These people are not fools; they are highly professional people.

Mr Harrod—We have, for example, the codes of conduct the pilotage companies have, which were developed by the pilots themselves and endorsed by us, that provide them with a framework for the way that they go about what they do. Couple that with the requirements we have introduced recently for ongoing professional development, particularly in the areas of bridge resource management and so on, and they are coming closer all the time to developing a much better regime than had existed.

Mr HARDGRAVE—One last question on that issue: is there a mechanism in place to allow those pilots who believe they are being placed under additional pressure by their employers or by those who consign certain commodities up and down the coast to go that extra distance to challenge the line in the sand? Are there mechanisms in place for pilots to say, ‘Hang on. I am being placed under additional pressure. AMSA, back me.’ Is there some mechanism to back them?

Mr Quirk—Yes. It does not matter if it is a pilot or a seafarer. If it is a safety issue for which AMSA has ability to influence the outcome, we will not back away from that issue. The pilots in July 1993 made business decisions which in many ways have only compounded the problems they faced. At times the pilots have tried to rationalise that by saying that AMSA’s regulatory system is wrong. Our safety regulatory system is more comprehensive than Queensland’s. They have made a conscious business decision to go a certain way.

AMSA is like any business organisation. You have to look at your corporate direction every year, or more than that—if you are not going the way you want, you change the environment to achieve your outcomes. Some of the pilots have to appreciate that. No amount of regulation, safety or economy can solve all their problems. They have to confront the difficulties and manage them themselves.

Mr Harrod—Also, if I might add, the nature or the structure of the industry is such that each of these pilots is self-employed and the pilotage provider is a company that is set up to do their scheduling and rostering and so on. So ultimately the pilot has the decision as to whether he works or not.

CHAIR—So they are individual professions?

Mr Harrod—Yes.

CHAIR—The pilotage company is essentially an agency.

Mr Quirk—A service company.

Mr Harrod—That is right.

Mr JULL—Could you just spell out to us how you monitor the situation?

Mr Quirk—In terms of pilotage hours and rest periods?

Mr JULL—All of that, yes.

Mr Quirk—We have a computer application called PAS which, amongst other things, records the number of passages done by pilots: when they got on the ship and when they got off. That is programmed to throw up to us on a monthly basis violations of the rest periods required. Each violation that comes up is investigated with the pilot or the service company involved. A lot of them are technical breaches—if I can use that term—but when we get a serious breach that pilot is warned that, if it happens again, we will take action. But it is very infrequent that we actually come across a conscious breach of the regulations.

The pilots are rostered and, do not forget, we have in Hay Point the ReefRep system, which is a VHF and radar system covering the totality of the inner route. So we have a real time basis on which to look at what pilots are doing on ships, but it is primarily the computer applications where we look at their rest periods and their passage times to see if the rest periods are being adhered to.

Mr Harrod—The data that goes into that covers their actual work slips, and that is what they get paid on. So we know that the hours that we get are the right hours.

CHAIR—We have talked a lot about the Barrier Reef. Would what you were saying about the Barrier Reef apply equally to Fremantle? We will come back to it.

Mr Quirk—Yes. That is a state matter.

Mr JULL—I suppose the pilots association have been talking about their national standards. From what you are saying today, is it physically almost impossible to introduce a system of national standards in Australia?

Mr Quirk—Recently, the National Marine Safety Committee, through the Australian Transport Council, implemented the port pilotage guidelines, which I can table or send up for your consideration tomorrow. It is directed at port pilotage and provides a basis or a framework for a regulatory authority, whether it be a state or a port authority, in terms of recruitment, training, ongoing professional development and work practices. It is a code; it is a guideline. It would be near impossible to devise a fatigue management program for the pilots in, say, Fremantle, the same as for the pilots in Hay Point or for the pilots in Darwin when you compare their tasks. The nature of their tasks is different. The pilots in those ports also perform different additional tasks to pilotage.

CHAIR—Like what?

Mr Quirk—For instance, in Darwin they are also part of the port management, whereas all the pilots in Hay Point do is pilot ships. In some ports in north-western Australia the pilots also do draft surveys—they survey the ships when they come in for how much ballast they have on board, they survey them again on departure to see how much cargo they have loaded. Those tasks are part of their work for the port authority in addition to their ship piloting responsibilities.

Mr GIBBONS—I am still intrigued by this 20 hours at a time. Is it cost factors that prevent pilots from being flown out by helicopter to vessels to bring them in, rather than having them go out in a smaller boat and maybe wait around for hours and hours? Is it dangerous to put a pilot aboard a vessel by helicopter?

Mr Quirk—I was a pilot for a number of years in Gladstone and we used helicopter transfers there, although I must admit there was a recent fatality in Gladstone with a port pilot when a helicopter hit the ship on departure. But, from a general perspective, I found helicopter transfers a much safer and more convenient way than using a pilot launch, because in the heavy south-easterly swells off Gladstone I used to get seasick. When you walk onto a ship after being seasick you do not immediately feel like piloting it. I had no problems using helicopters and I think most marine pilots, if I can speak for them, would accept that helicopters are an accepted and safe form of transfer.

Mr GIBBONS—Wouldn't that solve a lot of the so-called fatigue problems, because the pilot could actually leave the vessel and go away if it was not able to be—

Mr Quirk—You mean on the Queensland coast?

Mr GIBBONS—Yes.

Mr Quirk—Once you get north of Cairns there is not much in terms of helicopter infrastructure until you get to Horn Island, and their radius of operation is about—

Mr GIBBONS—I thought the benefit of using helicopters was that you did not need much.

Mr Quirk—If you are at Lockhart River or Princess Charlotte Bay, you have not got many helicopter services around there. If you are talking about whether or not to relieve the pilot at Lockhart River and put a fresh pilot on board, that is one of the options which we are looking, and it has been brought up on a number of occasions. If it was required, the infrastructure would be provided and it would be costed into the price of a service.

CHAIR—Do all ships have helipads?

Mr Quirk—No.

CHAIR—How do you get on when there is no helipad?

Mr Quirk—You can either winch on, which is more dangerous than land on, or most ports—

CHAIR—They winch you down?

Mr Quirk—Yes—similar to the military. It is done in some ports around the world, even in New Zealand, I think. But most ports maintain a pilot boat or an equivalent service whereby some ships which cannot take helicopters—for instance, some tankers which cannot gas free properly so obviously you cannot have a helicopter hovering overhead—use a pilot launch and traditional transfer methods.

Mr GIBBONS—How many services around Australia would use helicopters?

Mr Quirk—I could not give the exact number, but a larger number. It would be the major bulk ports: Hay Point, Gladstone, Dampier, Port Latta, Port Hedland. It is the smaller ports where you get a variety of vessels where a helicopter service is not economic because you still need to maintain a pretty active pilot boat.

Mr Harrod—And there are some ships which, as Patrick said, are entirely unsuited to helicopter transfers. A gassed-up tanker is one.

Mr Quirk—Passenger ships.

Mr Harrod—Yes—not all passenger ships can take a helicopter. With some general cargo ships, because of their masts and cranes and stuff like that, it is impossible to do anything but winch, and winching is not the best way to go.

CHAIR—Have you been winched on board?

Mr Quirk—I was winched off a ship once when we had an emergency pilot service in Brisbane for a couple of days. We used the state emergency helicopter. I would not recommend it without a bit more training.

Mr St CLAIR—How are pilots paid and how much are they paid?

Mr Quirk—You are talking about the coast pilots?

Mr St CLAIR—Yes. Just very roughly.

Mr Quirk—Our understanding, and bear in mind that we do not get involved with their commercial operations, is that some are shareholders in the service company but they are also their own private companies and they contract their services to that service company. Each company pays its pilots differently. I would be hesitant about going on the public record as to what their remuneration levels are because you hear rumours but I cannot substantiate figures.

Mr St CLAIR—Can I narrow it down—do they earn $25,000, $50,000 or $100,000?

Mr Quirk—Maybe your third area is closer to the mark.

Mr St CLAIR—That is all right. It gives us a comparison if we are looking at people who are suffering fatigue who are in charge of big transporters on the road, for example, and might be earning $40,000 a year or $100,000 a year. Often, professionalism is the difference.

Mr Quirk—Also the nature of a task. Once they are on a ship, they are, in many ways, virtually a wealth of wisdom on that ship and it is quite a demanding task. I do not think anyone in the industry begrudges the pilots the money they earn in terms of the value they give and in terms of their risk management.

CHAIR—Phase 3 of the FASTOH inquiry was discontinued. What was the reason for that?

Mr Harrod—In phase 3, the original design called for a series of—

CHAIR—That was the fatigue one, wasn't it?

Mr Harrod—Yes. This is the study we did on fatigue, stress and occupational health in the Australian maritime industry. The original design called for us to conduct a non-invasive medical examination to look at height, weight, blood pressure, flexibility and lung function to get a snapshot of overall fitness in the industry. However, during the study, it became fairly apparent to us that it was going to be a logistical nightmare. To get to the places of engagement, we had to seek a reassessment of time or to put researchers on board ships to conduct these things was, for us, going to be impossibly expensive. So we went back to the research team and talked it through and we decided that, overall, it would not affect the outcomes of the study and that the benefit from it was such that we really could not afford to continue with it. In the light of that, we decided that, if we really did need to get medical information, we perhaps had an easier way in that we get medical fitness records for seafarers when they have their medical examination, and we could probably use those to get the snapshot if we wanted to. So we decided to revamp the study and cut that piece out. It was purely a logistical problem. It was impossible.

CHAIR—Do you plan to take it up in some other form? The focus is fatigue.

Mr Harrod—At this stage probably not.

Mr Quirk—Our focus is on the Australian merchant fleet. Because of other pressures, the merchant fleet is facing many problems in terms of its future. The costs involved in this study would have been substantial—

CHAIR—Are you saying that there are not that many Australian ships?

Mr Quirk—We need to be realistic about these things.

CHAIR—Another matter is tugboat crews, and I suppose we have had the same sort of problem there—the active work and the passive work. Do you have any comment on tugboats standing by, et cetera?

Mr Quirk—Normally tugboats are outside our direct jurisdiction, although we are heavily involved with the offshore industry which has similar characteristics to the tugboats—

CHAIR—You do not have actual jurisdiction of the tugboats?

Mr Quirk—Unless they are on a voyage which we come under, no. The problems are related to there being a lot of active work and passive work.

CHAIR—Are there any ports where you do control the tugboats for various reasons?

Mr Quirk—Most of the tugs are involved in an interstate or an overseas towage operation.

CHAIR—Whose responsibility are they?

Mr Quirk—They are a state responsibility.

CHAIR—As AMSA, what is your general comment on the conditions for pilots and tugboat crews in respect of when they are on passive work? Are the cabins, the facilities, for them to get rest appropriate? I would like to deal with the pilots first and then the tugboats.

Mr Quirk—Bearing in mind that we are not directly involved in the employment arrangements—

CHAIR—Do you see a lot?

Mr Quirk—It depends on the port. Some ports require their pilots to be on call at a pilot station. Other ports can ask their pilots to be on stand-by at home.

CHAIR—I am more concerned about the pilot stations, especially where they are required to be on passive duty at sea or at the mouth of a port or something of that nature.

Mr Quirk—I am unaware of any Australian port that requires port pilots to be on stand-by on the pilot cutter. For instance, in Brisbane and Melbourne they have well-equipped pilot stations at Mooloolaba and Queenscliff where pilots can rest awaiting their vessels, and I think that is an accepted position and the pilots accept that. I am aware that, as we go down the road towards corporatisation and contracting out, when they ask for expressions of interest for services alternative service providers are trying to develop options whereby they limit the cost to the port authority by more innovative approaches, and that could be pilots spending some time on a pilot boat between ships.

I am unaware where that is taking place at the moment, but it is a pressure in all port authorities. Tugboats are under the same pressure. There are a number of tenders out at the moment in terms of service delivery and people are looking at more cost-effective options. That needs to be balanced with the safety aspects, obviously.

CHAIR—I have Fremantle at the back of my mind, but I can't remember whether it was the tugboats or the pilots.

Mr St CLAIR—Tugboats in Fremantle? My view was that stress was related to the fact that because some of the big tankers that came into Fremantle harbour there was not a real lot of space left at either end when they started to swing these things around. It is a question of coming to grips with all of that.

Mr Quirk—Yes. I think most ports are suffering from the fact that the ships are getting bigger and bigger. When ports have breakwaters you cannot move the breakwaters. That is where the skills of the pilots and tugboat crews come to the fore. I have not heard of a correlation between that and fatigue. If a pilot at Mooloolaba or Fremantle is going to bring a big tanker in then the company, the port authority or the pilot must ensure that the pilot is adequately rested before he or she goes on board. That is a given.

Mr St CLAIR—Our understanding also was that it is a given that some of the pilotage from the west is very long as well.

Mr Quirk—Yes, that is right. Dampier and Hedland are all long pilot duties and exposed to the open weather. They all use helicopters, I might add, so the stress of transfer has gone, but they are long nights. And bear in mind that a lot of these ships work to tides and most of the high tides in winter are at night-time, so you are working long hours in the middle of the night.

CHAIR—We have asked this question of most of the land based operations, but I feel I should ask it of you, perhaps in a slightly different way. It is textured by a submission from the MUA that suggests that we should have a single legislative approach to occupational health and safety in maritime matters. Do you agree with that? What do you think each segment requires?

Mr Quirk—In terms of the Commonwealth jurisdiction, AMSA's jurisdiction, under part 2 of the Australian Navigation Act the Occupational Health and Safety (Maritime Industry) Act applies. It is where you have this interface between the Commonwealth and the state administrations that the problems arise. For example, if a South Australian owned fishing

vessel picks up a crew in Queensland to fish in Northern Territory waters—what OH&S regime applies, if any? Some states are grappling with this issue in terms of the moves within the Australian Transport Council to make a more streamlined transition between the maritime jurisdictions in Australia. There are some serious jurisdictional problems involved there.

CHAIR—It has been suggested to us, and perhaps it may not apply so much at sea as it does on land, that we should recommend that fatigue management programs be made a compulsory dimension of quality assurance. If your fatigue management program does not measure up, then you do not get your quality assurance, and with the implications of being eligible for state and federal government contracts, et cetera. What is your view on that?

Mr Quirk—Under the international safety management code, to which most of the larger vessels are moving, and they will all be on it by the year 2002, the development of the safety culture must take into account fatigue management issues. How a ship or a company approaches that is left very much to the ship and the company, although at the end of the day we are looking for a safe outcome. That is already entrenched in the ISM code. Whether or not we would see that as a stepping stone to government contracts, we would take the view that if the vessel has the ISM code, it has a commitment to the safety culture that implies management of fatigue issues. We are quite comfortable that the larger ship sector is managing those issues. Where we do see problems developing is in the smallest part of the maritime sector where the nature of the ships and the nature of the operations make fatigue management much more difficult at the coalface.

CHAIR—Mr Hollis, you are the doyen of the maritime members of this committee. Did you have any questions to ask AMSA before we wind up?

Mr HOLLIS—The only thing relates to a question I asked this morning. A lot of the rules in Australia apply to domestic vessels such as tugs, pilot boats and things like that. How much authority does AMSA have on the international ships that are traversing here? If we are going to make management of fatigue a priority, how will that rate with some of the other things we look at? It would be very difficult doing, say, a port inspection to find out if people are fatigued or not.

Mr Quirk—One of the instruments we use in conducting our port state control program in our ports is the STCW convention, the Convention on Standards of Training, Certification and Watchkeeping for Seafarers. Within that convention it prescribes hours of rest—because the ILO convention prescribes the hours of work. The STCW convention prescribes a certain number of hours of rest within a 24-hour period. A ship is required to post a watch bill which is an indication of how the ship's master organises his officers and crew to avoid fatigue issues. In terms of our port state control program, that is one of the elements we look for, but we readily admit it is one thing to adhere to what the convention says in principle; implementation is another issue. We fully admit that on some ships it is very difficult to measure whether or not that commitment to fatigue management is actually taking place.

Mr HOLLIS—Yes, I know, because there are many other things too. It would be okay on the good ships—one would assume that the requirements had been adhered to—but not so much on the not-so-good ships.

Mr Quirk—Yes.

Mr HOLLIS—I do not know if one of my colleagues asked you about the main area you are looking at in fatigue control. Is there any specific area of Australia? Is it pilots, or is it tugboats or is it just the crew?

Mr Quirk—We talked extensively about coast pilots within the Great Barrier Reef—it is an area where fatigue is obviously of concern to us. We are also working with the industry and the seafarers in terms of coastal shipping—some of the coastal tankers. Because of their crew numbers, there is always potential for fatigue related incidents, but we are finding the industry in Australia is fairly responsible towards this and they all have programs. At times you might ask a question, 'How is it operating here?' but that is part of our normal communication with the industry.

Mr HOLLIS—I was in Wales earlier this year at the centre there at Cardiff. They are doing—as you would be aware—a major study, and one of the areas that they are looking at, which really surprised me, is the resupply of resources on the North Sea oil rigs. They maintain that, with its competitive nature, that is a 24-hour thing. As they said to me, imagine what would happen through fatigue if one of these rammed one of the rigs. Would AMSA look at that here or who would have responsibility for that here in Australia?

Mr Harrod—First of all, I was part of a team that reviewed the research design for that study that you are talking about. But, to be more specific, we have a little difficulty when you are talking about resupply vessels interacting with rigs in Australia. It is a jurisdictional one, whereby there is a point at which they move from coverage by the Navigation Act and the OH&S regime that we have to coverage by the Petroleum (Submerged Lands) Act 1967, and in that case they then come under what is known as the safety case for the installation. That safety case takes into account all of these sorts of things, and they have a very, very robust method of looking at how that whole issue is handled.

Mr HOLLIS—So you would assume we would not have the same problem that they think they have got or they are investigating to see whether they have got—

Mr Quirk—No. There are various risks in Australia, be it the North West Shelf or the Timor Gap area, and there have been to my knowledge two fatalities in the last five years on rig boats in those areas—not related to fatigue but just to the risks that operate in a very hostile environment, and fatigue in that issue is one of the matters we are concerned about. But we do have a cooperative arrangement between ourselves, the Department of Industry, Science and Resources and the operators to look at these interface issues and that works really well. We now have a code of practice for offshore vessels in terms of interaction with the offshore structures. But there is a risk there.

CHAIR—As ever, Mr Quirk, your evidence is spot on and very much to the point. We thank you, not only for your evidence today, but for your ongoing cooperation with this committee and its predecessors. We will have another roundtable during this term of parliament and we trust you will enter into that as enthusiastically as you have on this occasion.

Mr Quirk—We will await your invitation, Senator.

[3.02 p.m.]

JANSSEN, Mr Erich, Director, Industrial Relations and Remuneration, Australian Medical Association

CHAIR—I welcome Mr Erich Janssen, the Director of Industrial Relations and Remuneration for the Australian Medical Association. Mr Janssen, before we start I have to caution you that, although you are not under oath, these proceedings are proceedings of the parliament and warrant the same attention as the House itself. The giving of any false or misleading evidence is a serious matter and may be considered a contempt of the parliament. To commence your evidence, would you like to give us a five-minute overview of your submission?

Mr Janssen—Certainly. Thank you for the invitation to make this brief supplementary submission to our written submission lodged earlier this year. My comments will firstly address an important recent development in the AMA's campaign on fatigue and extended working hours in the public hospital system and its implications for similar programs that may be undertaken in areas of the transport industry. Secondly, it will offer some views on recent public comments by the government on the issue of excessive work hours and safety problems with current state health and safety legislation and put forward some recommendations that the committee may wish to consider.

The first matter concerns the campaign by the AMA to bring about changes to work practices that generate extensive and unsafe working hours for doctors in our hospital system. Our written submission to this inquiry outlined the strategy as an example of how, in the context of this inquiry's terms of reference, individuals, companies and governments may approach this issue. The first phase of our campaign has now been completed with the assistance of some Commonwealth funding and has resulted in the development of a national code of practice on hours of work, shiftwork and rostering for hospital doctors, a copy of which has been provided to the committee.

We have, however, had to change our approach to the implementation phase of the strategy outlined in the submission. The Commonwealth Department of Health and Aged Care has advised the AMA, after consulting with the relevant minister, that the Commonwealth will not provide any funding support for the AMA's safe hours implementation strategy. It indicated in September, and I will just quote from their correspondence, that:

> It is appropriate for states and territories to liaise directly with the AMA regarding the strategy's implementation on a jurisdictional basis . . . It is therefore inappropriate for the Commonwealth to provide funding to the AMA for the implementation of the strategy.

We are nevertheless proceeding with an implementation strategy, but the focus will inevitably need to be on pressing employing agencies to meet their health and safety obligations, confronting them with the problem and the legal consequences of continued breaches of duty of care obligations, rather than the process we had hoped would involve the cooperative development of solutions and tools for their implementation through a properly funded consultative process.

I raise that development simply because the same argument as to jurisdiction and funding, in terms of responsibility for health and safety problems, programs and legislation, could well be made in various sectors of the transport industry.

A related issue to which I wish to draw the committee's attention is the recent public comments by the Commonwealth Minister for Employment, Workplace Relations and Small Business, Mr Reith, on behalf of the government, concerning the issue of working hours and occupational health and safety. In a media statement released on 25 October 1999, Minister Reith stated:

The Commonwealth Government gives a high priority to improving Australia's occupational health and safety performance. In all jurisdictions the employer's duty of care towards employees in relation to occupational health and safety matters is clearly set out in the relevant legislation. This duty goes to the provision and maintenance of a safe working environment and one that is without risk to the health of the employee.

The point needs to be made, however, that the decisions about hours of work and other workplace relations issues are best made by the employer and the employees at each workplace within the requirements of OH&S legislation, as this will ensure that conditions reflect the preferences of the workplace.

The AMA does not agree with these views or the proposition that the occupational health and safety of employees, particularly in the area of working hours, rosters and work patterns, can adequately be safeguarded through individual bargaining between employers and their employees in the workplace. The experience within the medical work force, which is made up of highly skilled employees with, one would expect, some individual bargaining power, demonstrates I believe the difficulty of this proposition.

We also submit that little reliance can currently be placed on state and territory occupational health and safety laws. Certainly, in our industry, these laws have contributed very little to regulating the patently unsafe working hours and patterns that apply to junior doctors working in our public hospitals. The fact that the parliament is conducting this inquiry would suggest a similar observation may be able to be made in relation to at least parts of the transport sector.

By way of illustration I would like to quote from two very recent communications received concerning doctors working in the public hospital system. Both work under health and safety legislation referred to by the minister in the earlier quotation and the same legislation applies at least to some sectors of the transport industry.

The first is an extract from a letter received from a very worried parent of one doctor who was prompted to write to the AMA following recent media reports on our safe hours campaign. The parent refers to a period of excessive working hours that led to a physical and emotional breakdown by their daughter. The letter states:

On 21 September my daughter took stress leave from the hospital and came home to Sydney. Her condition had not been apparent to her colleagues until she was practically immobilised by uncontrollable tears. Within hours she was on the plane with the support of her registrar—although a week of ordinary leave had been impossible because of lack of relief staff.

She was granted three weeks stress leave but, aware that her registrar was about to leave the hospital, felt she should return before his departure, which she did after ten days. On her return from stress leave she was worked twelve days

straight, including five 24-hour shifts—two of which amounted to 48 hours continuously on call—in order to relieve those who had compensated for her absence.

Another brief quote I would like to make is again another representation we have recently received in light of the media on the hours issues in our campaign. This particularly refers to our code of practice—a copy of which you have seen. This is correspondence from a young doctor to her employer:

My roster unfortunately varies from this widely in that every four to five days I am rostered on for 32 hours. On most occasions during this time I will get only two to six hours sleep and on some occasions no sleep at all. I only have a whole day off every second week. The AMA guidelines are in place because of a concern for patient safety and the wellbeing of doctors. Personally, my concern is also because of my lack of ability to study or concentrate on acquiring new skills due to extreme tiredness.

The point I am making here is that these doctors are working under the health and safety laws to which Mr Reith referred and further, in this case, even have a workplace agreement that obliges the employer—and this is a government employer—to maintain safe rosters. These are doctors; they are not truck drivers. The labour market for doctors would suggest these young people do have employment options elsewhere, yet they are trapped in a dangerous cycle of fatigue and overwork due to excessive hours.

It may be of interest that, not unlike some private sector transport employers, this government employer has a policy of employing all its doctors on temporary, fixed term employment contracts. This gives them little to no employment security. Termination, under the public sector legislation in this jurisdiction, can take place at any time with minimal redress. Access to medical training programs by a junior doctor also relies on good reports from the doctor's employer, making it extremely difficult for young doctors to challenge the system.

CHAIR—I will just interrupt there for a second. What state did that occur in that you are referring to?

Mr Janssen—The Northern Territory. Transport workers on an individual basis would generally not be regarded as having any greater bargaining power with their employers in the workplace than doctors. If, as has been suggested by Minister Reith, hours of work should be sorted out at the workplace level between employers and employees, the AMA would submit there would be some doubt that the health and safety of, for example, a truck driver in such a negotiation would be a paramount concern. The AMA considers that health and safety should not be a tradable item in workplace or individual contract negotiations.

The evidence in our industry is that the more one-on-one the employer-employee relationship is, the less the health and safety considerations of working hours and fatigue feature in the work arrangements. This apparently is also the finding of the research conducted by the Australian Centre for Industrial Relations Research and Training on the relationship between working hours and the type of bargaining used in a workplace.

The AMA's conclusion has been to recommend that occupational health and safety matters be included as allowable award matters under section 89A of the Workplace Relations Act 1996. This would enable industrywide standards to be implemented through

the same process that establishes other safety net conditions that form part of the employment relationship. This would also facilitate a much sharper focus on the occupational health hazards of a specific industry than the general occupational health and safety legislation currently provides on issues to do with work hours and fatigue. It would also redress the bargaining imbalance between individuals and their employer on these important health and safety issues.

The evidence in our industry at least is that state health and safety laws have not adequately dealt with fatigue related to excessive and unsafe hours of work and that the move to individual contracts is exacerbating this problem. Australia has a safety net award system where occupational health and safety issues are allowable award matters under the federal industrial laws and these could contribute to dealing with fatigue related incidents in the transport sector. The AMA made that recommendation to the Senate inquiry into the Workplace Relations Legislation Amendment (More Jobs, Better Pay) Bill 1999 and the AMA makes the same recommendation to this inquiry.

The AMA also considers that there is a need to review the effectiveness of state occupational health and safety legislation in dealing with fatigue, excessive working hours and unsafe rostering practices and that consideration should be given to the scope for the Commonwealth to be more proactive in this area rather than relying on the argument of state-Commonwealth relations and the separation of responsibilities to avoid proactive involvement by the Commonwealth in the resolution of these issues. That concludes my opening submission, and I would be happy to take questions.

CHAIR—You have also funded this work with Professor Wlodarski, have you not?

Mr Janssen—We have been involved in a working party but we have not actually funded the—

CHAIR—You are involved in it. Okay. I would not mind coming back to that a little bit later. You mentioned the Northern Territory having the rule that just says 'has reasonable rosters' and then nobody does anything about making sure they are reasonable, and we are talking now more about transport I suppose than about doctors. Should there be a prescriptive regime or should there be a cooperative regime with a prescriptive bottom line, or should we be aiming to change the whole culture of the industry towards fatigue?

Mr Janssen—To some extent the latter two that you mentioned would be our preferred approach. Certainly in our industry—and I guess it is similar to most occupational cultures—there is a need to change attitude and there is a need to change behaviour. To that extent our approach has been a cultural change exercise. We have had a fairly extensive consultation process in developing what is a voluntary code. We also see though that around that we think the opportunity for providing a prescriptive framework within which rostering or hours of work can operate would assist that process. So to that extent we are saying that it certainly requires cultural change but in our industry we are beginning to conclude we need a bit more teeth in the enforcement side of working hours arrangements.

CHAIR—We have asked all the witnesses this: what is your view on making a fatigue management program a dimension of quality assurance? In other words, no matter where it

was—it could be a private hospital, for example, but in particular we are talking about transport—if you were not prepared to sign up for a demonstrable and auditable fatigue management program, you do not get quality assurance.

Mr Janssen—I think we would support that. Again by way of parallel in our own industry, we are in the process of making representations to the Australian Council of Health Care Standards, who accredit hospitals and hospital systems and programs, and asking them to include as a criteria an auditable safe hours compliance program and evidence of that in a hospital before they are accredited. So we are trying to use the structures that are already there.

CHAIR—So you are very much in sympathy with that approach?

Mr Janssen—Yes.

Mr JULL—In terms of the development of your code, how difficult would it be to adapt that code to, say, the transport industry? Are there general principles that you establish?

Mr Janssen—It would not be difficult in that the sorts of things in that code would be applicable to other forms of work in terms of recommendations about how to cycle rosters. We have in the centre of our code a little table about significant and higher risk and so on. There would be a suggestion by others in other industries that what we would call a comparatively low risk would be regarded as high risk in other areas. Our code is working from an industry where there is no regulation of any effective sense on hours of work and standard 32-hour shifts exist right throughout the country. So the debate that is taking place in the rest of the work force over extending to 12-hour shifts and these sorts of things is just not relevant in our industry. If we could get it down to 12-hour shifts, we would be doing very well.

So I think some of those things would need to be looked at and made more industry specific, but the principles of a code like that could apply. The code does not set absolute limits; it is a performance based approach where anybody can participate in a program to audit their roster to get an indication of the level of risk and by manipulating various variables around that they can bring their profile to a lower level of risk. We tried to do that so that we would not be in a situation of excluding large areas of the industry where their hours of work are all in the high risk category. That performance based approach, certainly in our industry, is something that we felt would more likely bring participation by hospitals in programs that could bring their profiles down.

Mr JULL—In your introduction you mentioned that you had some real difficulties in monitoring the situation. What comeback have you got if somebody does the wrong thing and exactly what sorts of monitoring devices have you got now?

Mr Janssen—There are not any very good monitoring devices. We really work on a complaint based approach at this stage. We are wanting to now as part of our implementation strategy approach each state health administration to try to develop with them, and have them agree to put in, a monitoring process. First, we need to undertake some audits because we need to really identify the problems. Second, we need to introduce a

compliance process to deal with the difficult areas. Then, third, we need to have an ongoing monitoring system.

We are starting from scratch in our sector—there is nothing there really. There may well be payroll and rostering systems that we could tap into that could generate the data that we would need, but it all requires the cooperation of the hospitals. It is an environment where the people most subject to these difficult hours, the young doctors, feel that it is part of the medical culture that they go through what the senior doctors have gone through and that if they do not accept that they are less competitive in terms of getting into training programs and so on. It is an occupational culture that I guess is unique to medicine, but you could probably find parallels in other industries of pressures on people to perform unsafe hours of work.

Mr HOLLIS—I found your submission very interesting. I have not so much got a question as a comment, and please do not think I am looking for sympathy. We have had a lot of information from unions and industry, and the chairman talks about the audit and all these things, but I think that in many respects we are the worst people to be talking. We are not in the same situation as the doctors, but we pass legislation in this place on occupational health and safety and all of that, and most members of parliament are in here at eight o'clock in the morning, committees start at half past eight, we work through until 11 o'clock at night, and we are supposed to be running the country.

A few years ago some of the doctors in this place got together and got us to reduce our working hours to 12—parliament used to get up at eight o'clock at night. But the new government, with respect to my colleagues, thought that that did not send out the right image. We usually work 16 or 17 hours, but for a couple of weeks towards the end of the year we were working right through until two o'clock and I raised in our caucus the issue of occupational health and safety—in fact, I even asked the Speaker a question once. But some of my colleagues in the Labor Party came to me and told me how stupid I was to raise a question in the caucus about the long hours because that would indicate that I could not hack it in this place and that would be used against me. They said this seriously—shadow ministers and others—that that would be used against me in pre-selection challenges. So there is that image. I thought you were spot on when you said young doctors have the image that, because their fathers and their grandfathers worked all these hours, it really makes them real doctors if they work these hours.

It is going to be really interesting when we bring down our report making representations on this issue as to whether it will apply to us in this parliament. I spent all my life in the trade union movement and I tell you that if people in the trade union movement came to me and told me that by law, in our case the Constitution of Australia, they had to work the hours that we have to put in—not physical work, but we have to be here—I would be standing up in the parliament making the most horrendous thundering speeches about not having advanced from the Dickensian era. Members of parliament are in that culture where we just accept that we will be in here from eight in the morning until at least 11 at night, because that is when the House rises, but often until midnight. That is not a question to you, it is just a comment to say you are spot on—there is a culture out there in Australia. I thought Reith's comments about that were appalling, quite frankly, but I can understand

where he is coming from because we think, 'If we put in all these hours, why shouldn't everyone else?'

CHAIR—A similar analogy. On a related matter, I realise that you come from the industrial relations side of the AMA, but have you been briefed on the AMA's attitude to apnoea?

Mr Janssen—I cannot really answer any questions on that.

CHAIR—Could you get us a one-pager on the AMA's attitude to apnoea? It comes up a lot. You know about apnoea, the sleep disorder?

Mr Janssen—Yes.

CHAIR—What do you do with the truck driver who has got apnoea—do you try to prescriptively ban him or do you ask him to act, compulsorily or voluntarily, or is it a culture change thing? In fact, I met someone the other day and when I was talking about this very subject he said that he now wears the mask to bed every night. He has an apnoea problem. He wears the mask and it is connected up to a pressure pump. I just wonder what the AMA's attitude is and how they see it being treated broadly, especially in industries where it has a direct bearing on people's fatigue and consequently their safety and the safety of others.

Mr Janssen—I am happy to do that.

CHAIR—You talked about a code—I think that was the word you used. Are you confident that a code for young doctors is going to be enough?

Mr Janssen—I do not think that is the total solution.

CHAIR—I ask this question because there are probably parallels to our own occupation as politicians because of the long hours we work but there are certainly parallels with the trucking industry—you are considered a good driver if you get there and stay ahead of the pace. My son, who is a construction manager, told me over the weekend that on the building site where he is at present, which is on the central Queensland coast, he gets materials up every couple of days from Melbourne. He said that they try to set realistic time limits to make sure that the guys do have sufficient time to get the material there safely, but what worries him is that they are arriving up to 24 hours early and that means they are so used to pushing the envelope that they are not taking the breaks even when they are offered. The problem that raises for me is whether a code will do it or whether we have to have a total culture change with respect to fatigue.

Mr Janssen—I think the culture change part is extremely important. In addition to getting the system for accrediting hospitals that recognise the issue, we are trying to get medical colleges, when they are accrediting training positions, to also have as a criterion that there is some sort of containment on the hours that are worked. That is a big ask for some colleges which measure performance in part on the number of procedures that somebody might have done in a particular discipline and so on. It is also difficult where you have very

highly specialised disciplines where there may only be one registrar in the hospital that does those sorts of procedures or is in that training program so their on-call requirement is quite onerous. We are also trying to do that at an even earlier stage, with intern positions, and, again, have the relevant state accrediting bodies apply some form of test in terms of hours of work before they accredit those positions. So we are really looking at all the frameworks and structures around medicine and we are trying to see how they can contribute to the solution.

There has been a change in the type of people going into medicine, at least in terms of the balance of gender. The majority of medical students now—slightly over 50 per cent—are female. They are coming out with some different expectations of what work will be about and they have different demands. It is already showing in figures that the Institute of Health and Welfare have generated in terms of hours worked between male and female doctors. Also, younger male doctors and young people generally are developing a slightly different attitude towards the balance between work and leisure, and lifestyle generally. That is coupled with hospitals where throughput is greater than it has ever been, where the range of medical interventions that are now possible has grown exponentially and the amount of knowledge that these young people need to absorb has grown accordingly. It is a much more high intensity environment in which to work.

People are staying in hospital for shorter periods, they are coming in sicker, there is more chance to do something for them, there are more things that need to be thought about. All of these factors are pushing around the culture of medicine. We are certainly looking at it from the perspective of dealing with those frameworks, many of which are run by doctors, and having those frameworks regulate around this issue of unsafe rostering and hours.

CHAIR—Before we wind up, could you give us a few minutes on where you are at with the sensor technology in vehicles and what the AMA's expectation is for that? In terms of the briefing we had from Professor Wlodarski, we have talked broadly amongst ourselves—not on the record—as a committee about whether or not it would be possible to have sensors in the dashboard that showed whether there was an excessive amount of carbon monoxide or carbon dioxide in the cabin. Initially, this would trigger a coloured light, and after so many seconds or minutes, if the person did not act, it would set off a noise signal, and so many minutes after that, if nothing had been done, it would cut off the engine. It would obviously prevent suicides and accidental carbon monoxide poisoning. Have you looked at the practicalities of this? Have you spoken to the automotive industry about whether it is feasible and all of that sort of thing?

Mr Janssen—This is not my area of expertise, as you would appreciate, but we have been involved in the working group. I did attach to our submission some material on that, and I understand you have met with at least some of the people involved in it. Our attitude is that there is a good opportunity for applying these monitoring systems in motor vehicles. In those incidents associated with fatigue resulting from carbon monoxide or carbon dioxide concentrations, it would be desirable to have monitoring devices fitted to new vehicles at least. I am not sure of the cost involved in all of this. If you want me to, that is something on which I could try to obtain some information.

CHAIR—Could we have one page on where the AMA is and whether you have had any discussions with the automotive industry?

Mr Janssen—Yes, I am happy to do that.

CHAIR—As there are no further questions, I thank you very much for coming today. It has been very interesting. We appreciate very much your linking this problem of fatigue in young doctors with transport—there are analogies there. Also, to have the interest of the medical profession in what we are doing is an important dimension of our work. Would you let us have those two documents that we talked about, and we trust that if we have any other requirements we can come back to you.

Mr Janssen—Certainly.

CHAIR—You will receive a copy of the *Hansard* draft. Once again, thanks for your attendance.

Mr Janssen—Thank you.

Resolved (on motion by **Mr St Clair**):

That this committee authorises the broadcasting of this public hearing today and the publication of the proof transcript of the evidence given before it at public hearing this day.

Committee adjourned at 3.33 p.m.