

My ref: 70202
Your ref: MF 2.2

Committee Secretary
House of Representatives Standing Committee on Communications
Transport and the Arts
Parliament House
CANBERRA ACT 2600

Dear Sir/Madam

Inquiry into Managing Fatigue in Transport

Thank you for the opportunity to make a submission on this important issue.

Please find attached a paper which focuses on the Western Australian position on fatigue in road transport. Westrail, the WA Government rail operator, will be making a direct submission to you on its initiatives in the management of fatigue in its rail operations.

We have not commented on aviation as responsibility for this area rests with the Commonwealth.

With respect to the marine area, fatigue factors in the management of large vessels have been well researched. For domestic operations involving charter boats, ferries and fishing vessels, however, relatively little research has been undertaken. In Australia, the nature of the fishing industry in particular where crew numbers are small and long hours can sometimes be spent at sea in relatively small vessels results in high levels of fatigue for masters and crew. This is an issue which should be addressed and it may be appropriate for the National Marine Safety Committee to include in its research program a project on fatigue management.

The fundamental causes of fatigue are relevant to all modes of transport. Road, rail, marine and air transport all need to consider fatigue in their scheduling and rostering arrangements. However, the strategies and practices they employ to counter the risks are not automatically transferable across all modes. There is unlikely to be a "one size fits all" fatigue management system as operating environments vary dramatically even within modes of transport (this is a major reason why we have adopted a non-prescriptive approach to fatigue management in the road transport industry). Nevertheless, discussions between modes should be encouraged in order to learn from the successful practices and developments that have been employed.

I look forward to the outcome of your inquiry. For further information on this submission you should contact Mr Lance Poore on (08) 9320 9727.

Yours faithfully

Murray Criddle, MLC
MINISTER FOR TRANSPORT

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***House of Representatives Standing Committee on Communications,
Transport and the Arts Inquiry into Managing Fatigue in Transport***

Submission by Minister for Transport Western Australia

1 Introduction

It is estimated that in Western Australia, one in three road deaths involves tired drivers. While behaviours such as drink driving and speeding are easy to measure and to some degree are viewed as socially unacceptable, fatigue is far more difficult to manage.

Driver or operator fatigue is due primarily to a lack of quality sleep and the time of day of driving. Additional contributing factors include highway boredom, weather, time spent loading and unloading, certain medicines, road conditions and delays experienced. Responses to driver fatigue which rely on simple, measurable factors such as hours behind the wheel are therefore likely to be limited in effectiveness.

Recognising this, the issue of driver fatigue has received a great deal of attention in WA and an innovative approach to heavy vehicle driver fatigue has been developed. This submission addresses all of the Inquiry's terms of reference under the broad headings of the causes of fatigue and the WA response to dealing with it.

2 Causes and Contributing Factors to Fatigue

There are a number of factors potentially contributing to driver fatigue but they can be broadly summarised as physiological and, for those driving professionally, the industry environment.

2.1 Physiological Factors

2.1.1 Driver health

Health is an important issue for drivers. A healthy driver will be better able to handle the demands of the job with less stress and good quality sleep. A health regime is an important part of any fatigue management system. Health problems like sleep apnoea can also lead to chronic fatigue and drivers should be screened for such conditions. A requirement for driver medicals should be a fundamental part of an effective fatigue management system.

2.1.2 Sleep debt

Another key issue is sleep debt. By not achieving daily requirements of sleep people start to fall behind and develop sleep debt. An individual needing a daily 8 hours sleep who is only getting 6 hours four nights in a row accumulates an 8 hour sleep debt or the equivalent of one full night's sleep. This will degrade performance including impaired judgement, reaction time and concentration. Again drivers need to be aware of these effects and the strategies to overcome them including the value of naps as a means to maintain alertness during the day.

2.1.3 Time of day effect

Lack of sleep combined with time of day effect (or “the body clock”) creates a dangerous cocktail for the driver. The tired driver on the road at 3pm will be struggling to maintain alertness. The tired driver on the road at 3am especially in the country is a crash waiting to happen.

It is surprising how many companies and drivers are not aware of this human condition. Without this knowledge and training companies will continue to schedule inappropriately putting drivers and others unnecessarily at risk. Alternatively by taking these factors into account drivers are better able to manage their fatigue through rest breaks being scheduled when sleep is most easily achieved.

2.1.4 The chemical changes that cause sleep

Two chemicals in our bodies in particular create the urge for sleep. One chemical, adenosine has been found to build up in our brains while we are awake. One of its roles is to make us tired. The action of caffeine is to block the action of adenosine. Caffeine does not displace adenosine, however, it only defers its action. The other key chemical is melatonin. Melatonin functions with the body clock with darkness being its key actuator. Melatonin is a sleep trigger. Appreciating the physical nature of fatigue and the changes occurring in our bodies will help the industry appreciate the need for fatigue management. At 3 am the driver who has been on the road for many hours will be getting a “double whammy” from both chemicals. This goes some way to explaining the high incidence of fatigue related crashes and incidents at this time of the day and why our brains can quickly shut down. Drivers who ignore the warning signs and try to soldier on to the next town or truck bay place themselves at great risk of falling asleep at the wheel and crashing.

2.2 The road transport industry environment

The responsibility for the working arrangements of truck and bus drivers generally lies with the prime contactor or employer. They set the delivery schedule/timetable often in conjunction with the client. The driver may have the least amount of say on the scheduling of his trip.

Company drivers and subcontractors may be paid by the trip or on distance travelled. This type of reward structure encourages greater time behind the wheel and in the case of a sub contractor business survival may be dependent on achieving at least a minimum level of trips. The stories are legion of drivers who are told that unless they are prepared to do a run somebody else will be found who will. In many such cases the driver will be starting a trip already tired.

Unless there are steps to prevent drivers doing excessive hours either willingly or under direction, sufficient provision for rest and sleep will be a secondary consideration. Ensuring drivers are well rested at the start of a trip and have opportunity for rest and sleep in a schedule is the responsibility of the prime contractor or employer as well as the driver. There need to be practices and procedures that ensure drivers have had sufficient opportunity for rest before starting a trip as well as ensuring schedules allow for sleep and

rest. Companies must have these practices in place. By not doing so a company is displaying a lack of concern for its drivers and the community.

Just as diesel fuel and oil sustains the truck or bus engine sleep sustains the driver. Just as companies make refuelling provision for vehicles to ensure they are capable of completing the trip, they must make similar sleep and rest provisions for the driver.

Drivers also have a responsibility to ensure they take advantage of rest breaks and get sleep. Drivers need to be trained and educated on the value and need for sleep. Drivers need to be trained to meet the real world problems they face. If procedures are in place drivers need to know why they are there and in the case of fatigue the human factors that dictate they be there. It is only by knowing why procedures are in place that drivers and others in the company will be less tempted to break them.

Also of interest is that the shut down process initially starts with that part of our brain that controls complex decisions and allows sustained performance. Our ability to deal with the unexpected within the time available (ie the animal that jumps on the road or the car that brakes suddenly in front of us) is impaired. The issue is not just about drivers falling asleep at the wheel but the general lack of alertness that precedes this final stage.

The above discussion points to there being three keys to effectively managing driver fatigue and preventing crashes. They are correct scheduling practices, training and education. All these factors and more are covered in the WA Code of Practice explained in the following section.

3 Western Australia initiatives to address driver fatigue

3.1 The transport industry

3.1.1 Assessing the problem

In September 1995 for a period of 7 days for 24 hours each day in 6 different locations throughout the State interviews were conducted with truck and bus drivers. A total of 638 interviews were conducted during this survey. Following the driver survey a further survey of 84 transport companies also took place. Of the drivers interviewed about 10% reported that fatigue was often or more frequently a problem for them. In fact 32 or 5% of drivers had experienced a hazardous or fatigue related event, like nodding off, on the trip they were currently doing. Generally companies considered fatigue to be more of a problem for other drivers and companies than themselves.

A comparison of this survey with similar data from East Coast surveys did not suggest any greater problem in the unregulated WA industry. There were clearly a reasonable percentage of drivers, however, who were often fatigued and posed a high risk of a crash to themselves and other road users.

3.1.2 Prescribed hours systems

The system of prescribed hours with monitoring by log books will only ever be partially successful in managing fatigue.

Prescribed hours system were introduced in the 1930's. There was very little understanding about the nature of fatigue at the time and it is likely that the regulations were based more on anecdotal information than on a scientific basis.

Prescribed hours systems restrict the daily driving hours and by default mandate the number of hours of rest. They do not however take into account the time of day effect or consider fitness for duty. Recent US research suggests time of day is at least as important as hours of driving. A driver may quite legally start a trip already drowsy and be within prescribed hours. Prescribed hours systems also create the situation where a driver only a short distance from the destination runs out of hours and is required to pull over and stop in what may be conditions unsuited to rest. This can lead to negative outcomes not only in the form of evasive and unsafe practices but also inefficiency which translates into higher costs for the community.

To be realistic and effective a system controlling the activities of the transport industry needs some flexibility. The distances to be travelled, often in extremes of temperature, and the remoteness of many centres do not lend themselves to a rigidly applied set of prescriptive operating rules. An operator needs the discretion to make a judgement on how best to manage driver fatigue given any number of circumstances that can develop in daily operations. The emphasis must remain on managing fatigue and sustaining the driver, not worrying whether a particular action will put a driver a half-hour over the limit with a potential fine being imposed. Log books and prescribed hours have too narrow a focus and create a range of incentives to behaviour which is contrary to basic safety and efficiency objectives.

Evidence of the problems associated with prescribed hours system can be seen in some of the tragic crashes that have occurred in recent years. The 1996 Blanchetown crash in South Australia where six people died following a collision between a truck and two cars showed a complete disregard of any form of fatigue management. In the Coronial Inquest into this crash it was also reported that the behaviour that led to the crash was not uncommon, at the time, in this particular company. The fact that this can occur within the highly regimented prescribed hours system suggests that it might be time to consider an alternative approach. One of the Coroners recommendations was in fact, *whether the role of the Office of Workplace Services, in the education about and enforcement of the Occupational Health, Safety and Welfare Act, 1986, needs to be enhanced in relation to the heavy vehicle industry.*

3.1.3 The Western Australian Code of Practice

The key issues in addressing fatigue for commercial drivers are really to do with ensuring they are getting sufficient sleep and managing the early afternoon, early morning high crash risk time. Factors impacting on these issues are the structure of the industry the demands of clients, the financial pressures and reward structure, the training and education undertaken in the industry, the regulatory regimes and the levels of responsibility for managing the risk of driver fatigue within the industry.

In Western Australia we are adopting a modern approach to driver fatigue management for commercial drivers. Western Australia has not had a system of prescribed hours and logbooks as found in the eastern states, Europe, Canada and the USA.

Research into the road transport industry in WA found that the crash risk was not greater than for drivers in the regulated States. There was still sufficient evidence however of risky on-road behaviour to warrant a more active approach to managing commercial driver fatigue on WA roads.

After reviewing a range of options with the industry in WA the preferred approach was to consider fatigue as a workplace safety and health issue. The Occupational Safety and Health Act has duty of care provisions to address safety issues in the workplace - in this context, the cab of a truck or bus is a workplace. The Act requires employers, including self employed persons, to provide a safe system of work and for employees to work to that system. The emphasis under an OS&H systems approach is for fatigue to be addressed before the vehicle leaves the depot. Management must factor in and plan for the risk and not leave it entirely in the hands of the driver out on the road.

Out on the road drivers are not subject to on-road enforcement. They do have a responsibility to work to the system set for them, to take rest breaks as required and to remain alert and fit for duty.

What was missing from this scenario was guidance on what a safe system should look like. In WA we addressed this by developing an industry Code of Practice on Fatigue Management for Commercial Vehicle Drivers. A Project Team of industry, union, government and scientific representatives jointly developed the Code. The Code reflects world's best practice in managing commercial driver fatigue. The Code was formally approved under the Occupational Safety and Health Act in October 1998. (a copy is attached to this submission).

The requirements for a safe system of work are enforceable under the Occupational Safety and Health Act. Fines to a maximum of \$200,000 are possible under WA legislation. WorkSafe WA Inspectors are empowered to follow up on incidents and complaints and undertake random inspections of work sites and systems. Where problems are found either an improvement notice, a prohibition notice or court action can be implemented or initiated.

An improvement notice allows the business to continue to operate but gives a certain time to fix the problem. With a prohibition notice that sector of the business concerned must cease work until the problem is fixed. The implications for a business are potentially significant. Companies cannot stand back and let the driver take the penalty. In WA a number of companies have been issued with notices with the further threat of legal action for non-compliance. There has also been one conviction of an employer, albeit prior to the introduction of the Code, which stemmed from a road crash where the employee driver was killed following a long period of work without adequate rest.

The Code of Practice can provide the basis for prosecution as well as a defence against prosecution. Having a safe system of work in place will not absolve a company from negligence but it will mitigate in its favour.

Since the Code of Practice was approved and formally launched in November 1998 the recognition of the issue and the adoption of fatigue management practices has been widespread in WA. Around 4500 copies of the Code are in circulation within the industry in WA. In a recent survey 364 drivers were asked about their awareness of fatigue management with 80% indicating awareness.

Direct contact with companies also suggests a significant number of transport companies in WA are taking active steps as required in the Code to manage fatigue. Problems still exist with some companies and drivers who believe they don't have a problem and should be able to continue to do what they have always done. The assumption seems to be that because it was safe yesterday and safe today that therefore it will be safe tomorrow - why should I make any changes?

While the standards in the Code have been established with a view to operating realities in WA it is apparent that adherence to the Code will lead to a reduction in hours for some drivers with possible financial implications for owner-drivers in particular. While this is unfortunate, the need for some sections of the industry to reassess their current schedules and bring them back to sensible and safe operating regimes must improve industry safety and driver wellbeing. A period of adjustment is occurring when the balance between safety and viability is now being more carefully considered. In one company where this occurred the initial fear of drivers of a reduction in hours and income was replaced with a realisation that the extra time they now had with their families was of more value than at first appreciated.

As a result of the Code the industry awareness of fatigue has increased significantly. The consultation process, journal articles and the launch of the Code have all highlighted the change in direction in Western Australia.

A common experience has been of sceptical truck drivers becoming very interested when the actual physical process of fatigue and the workings of the body clock are explained to them. This knowledge has not been readily available to them in the past. For fatigue management to be successful an understanding of these human factors in the industry is essential. It is only with this knowledge that people can appreciate the rules and why it is important to keep to them.

Fatigue management is about working smarter, reducing fatigue related crashes and improving driver quality of life. Well-run safe companies will be better able to retain drivers, are more likely to be able to reduce their insurance premiums and have more efficient and competitive operations. Anecdotal evidence is that drivers working for companies that manage the risk of fatigue and care about their drivers tend to be more careful with their vehicles leading to reduced maintenance costs and better fuel economy. Drivers are a company's frontline customer contact and being alert and well rested can only ensure they present a professional image to customers.

Part of the process is also to prevent companies gaining a competitive advantage on the strength of requiring their drivers to do extreme hours of work. The Code of Practice aims to "level the playing field" and drive out unscrupulous operators.

3.1.4 Supporting actions

- *Training and Education*

Some positive steps have been implemented in recent times to improve awareness of fatigue in the road transport industry. In WA an accredited training program has been developed which specifically addresses the Code of Practice. The major retailers in WA also insist on their suppliers being safety accredited before they can deliver to their stores. For transport companies, the training package to gain accreditation includes training on fatigue management.

The Transitional Fatigue Management Scheme (TFMS) available in the regulated States has a training course attached to it that must be completed by company drivers before they can take advantage of the scheme. The industry journals have published many quite comprehensive articles on different facets of fatigue and continue to do so. In addition NTI Resources have developed a series of innovative interactive CD Roms on fatigue. The CD's include spoken words allowing a person with poor reading ability to access the information.

Also in WA a set of talking book cassette tapes with information about fatigue and the Code of Practice has been developed with financial support from Wesfarmers Transport. The tapes aim to make information as accessible as possible to drivers. A considerable amount of information is available on the Internet including information developed by Transport and Murdoch University and published on the WorkSafe WA Safetyline web site. Transport in WA is also currently developing a driver handbook on fatigue to support the other sources of information. The handbook should be of use to all commercial drivers and others where fatigue is a significant risk in the work environment.

- *Industry Culture*

For fatigue management to be successfully implemented in a transport business the drivers need to be involved in the development process. A good local example of involving drivers occurred in a large fuel distribution company. In a training session one driver observed how on returning from one regular country run, he found fatigue was starting to set in around about one particular town. The company in fact had a depot in the town and it was agreed to provide a key so drivers could stop at this depot and freshen up. This was so successful that all drivers can now access out of hours all country depots operated by the company. A cooperative approach involving both drivers and management is more likely to gain acceptance and find solutions.

- *The Role of Transport Customers in Managing Driver Fatigue*

The large customers of transport have a major influence on fatigue management practices. In the event of a crash involving their freight they need to consider the chain of responsibility and their potential liability, corporate image and loss of freight.

If a customer is demanding a delivery schedule that requires unsafe operation and a crash occurs undertaking that schedule, the customer is likely to face scrutiny and be implicated in the responsibility for the crash. In addition many customers would not wish to be

associated with any unsafe activity especially where their corporate colours are emblazoned over the side of a truck. The last thing they would want to see is a truck with their colours imbedded in the side of a bus. The actual loss of freight through a crash is a final concern for a customer. With greater use of multi-trailer trucks the amount of freight involved in a single crash can be significant.

Clearly customers who are responsible corporate citizens should recognise and accept they should be helping the truck driver, not making the job more difficult. They should be checking with their carriers on how they manage the safety of their drivers and through the power of their contracts requiring fatigue management systems to be in place. Customers can also help drivers through the provision of rest facilities and not delaying loading or unloading. Drivers waiting to load or unload can not get proper rest if they constantly have to move their vehicle to the front of a queue. Clients should unload trucks promptly to allow schedules to be maintained so the driver is not forced into working any more hours than necessary.

Within WA a number of customers with significant amounts of freight are already requiring their carriers to have a fatigue management system in place. Transport in conjunction with the industry is actively communicating with major transport users to make them aware of fatigue management and how they can help.

- *Ancillary driving*

There is currently planning in place to develop guidance material or a Code of Practice for industry where driving is an ancillary task or where workers finishing shifts are exposed to driving home at high-risk times of the day. Fatigue being a factor of time awake, a driver on a 12 hour shift with a long drive to and from work will be fatigued and at risk on the drive home especially if finishing at 5 or 6 in the morning. It is believed this is an area where some influence can be exerted on the employer and employee to take fatigue into account in planning shift conditions. The process will also further encourage education and training on fatigue and provide information on managing the risk.

As information on fatigue starts to flow through industry it must start to impact on the behaviour of the general population, influencing and reducing fatigue-related incidents.

- *Technology*

Technology that detects fatigue through the monitoring of eye movements is one of several technical in-vehicle systems being developed around the world to manage fatigue. These systems may help but to put utmost faith in this approach could be dangerous. Human nature would dictate that drivers would drive until the machine said stop. Inventive souls, if need be, would soon develop techniques to override equipment. The fact is drivers know when they are tired and should stop accordingly. They should not continue or be expected to continue until some monitoring device says to stop. There is no known easy fix that technology can presently offer.

Engineering technology like audible edge lining has a role to play in preventing fatigue crashes. This type of engineering can provide a warning in recognised high crash risk

areas to drivers to wake up and get off the road and rest. This type of technology should only be seen as part of a total package of preventing fatigue crashes and not a single stand-alone solution.

3.2 The general road user

In 1998, the Road Safety Council of WA conducted a campaign aimed at increasing the awareness of driver fatigue within the target group. It ran for four weeks in November 1998 on television. The focus of the campaign was drivers undertaking recreational and holiday trips.

The campaign strategy revolved around creating a simple device to remind the target audience that fatigue could impair their driving ability. The simple mnemonic, 'yawning's a warning' was developed and used as the focus of the television campaign. This was supported by posters distributed through RoadWise, the WA Municipal Associations' network of community road safety committees.

Results of the campaign were very encouraging, considering the low media expenditure.

The 1999 fatigue campaign is scheduled to run for 4 to 6 weeks commencing 27 June, just prior to school holidays. A burst will also be included just prior to the October school holidays.

This year's campaign will be expanded to cover television, radio and outdoors, plus a comprehensive promotional component utilising the RoadWise distribution network and a sales promotion with a retailer.

The strategy is to continue reinforcing 'Yawning's a warning' but to go one step further and provide the audience with practical steps they can take if they feel tired: swap drivers or have a rest. A tactical element of the campaign will also set about debunking the common myths about driving tired, ie. that turning up the radio or winding down the window will help.

4 Conclusion

Driver fatigue or tired driving is not as easily measured or addressed as speeding or drunk driving. It is a transport safety problem that needs to be addressed creatively and with imagination. Drivers need to be aware of the value of a nap, the need for sleep in our lives and the daily cycle our body follows of alertness and dips. Drivers should be informed on how little value there is in winding the window down or turning up the radio. Other myths including that it is more fatiguing to drive at 90 kph than 100kph as espoused by some in the transport industry need to be dispelled.

Sleep sustains human performance and activity. People working in situations where constant alertness is critical must ensure they have or are given the opportunity for adequate and good quality sleep. People do not need to fall asleep behind the wheel or on the job. Fatigue needs to be addressed and planned for before a journey starts. The practice of managing fatigue is not just for the driver but for all who have a role in the transport chain.

People can survive for 3 to 4 weeks without food, 3 to 4 days without water and 3 to 4 hours with exposure. If you fall asleep while driving your survival time may only be 3 to 4 seconds.

**MINISTER FOR TRANSPORT
WESTERN AUSTRALIA**

22 June 1999