
The Parliament of the Commonwealth of Australia

Beyond the Midnight Oil

An inquiry into managing fatigue in transport

House of Representatives
Standing Committee on Communication, Transport and the Arts

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Chair's Foreword

We live in a world where commerce is conducted around the clock and by the click of a mouse. A world where goods and services are expected to be available when and where the customer wants.

Human ingenuity has created these expectations. And, for the most part, they are met.

But they come at a cost. One of these costs is human fatigue.

Goods don't just materialise at our doorstep or on the supermarket shelves, they need to be delivered—by road, rail, air and sea. People drive these trucks, trains, planes and ships. People maintain these vehicles. People make decisions about scheduling, dispatch and delivery.

Some times these vehicles are driven and maintained by people who have worked long hours, often through the night, and have had inadequate rest breaks. The longer they have worked, the more they have worked at night and the less they have rested, the greater the risk of fatigue. The more fatigue, the greater the risk of an accident occurring.

In the absence of measures to mitigate this risk, a lethal continuum is created. We frequently hear of accidents and incidents on roads, on railways, at sea and in the air where human fatigue is cited as a contributing factor.

The consequences of such accidents can be catastrophic and enduring. Individuals and families can be traumatised, communities scarred, environments damaged and businesses destroyed.

Fatigue in transport is a problem that must be addressed by governments, by transport companies and by workers in the transport industry.

While it is unrealistic to think that the expectations created by a 24 hour a day global economy can be wound back, it is essential that we recognise and take responsibility for the costs associated with these expectations.

Fatigue in transport probably cannot always be avoided, but it can be managed.

In this report, we highlight some of the measures that have already been taken to manage fatigue in the Australian transport industry. Some of these measures have been successful and are recognised as being world's best practice.

We also discuss what more can and should be done to better manage fatigue in transport. We conclude that, although there is no single feasible solution to the problem, there are a mix of approaches that can be taken: some that are particular to specific parts of the transport industry, others which can be applied generally across all modes of transport. There is also considerable scope for research to be better coordinated, for the more consistent collection of data, for experiences to be shared, for best practice to be disseminated widely and for national standards to be developed.

We have not sought to address and resolve every issue that contributes to fatigue in the transport industry. Rather, our approach has been to consider common themes and principles which might have application across all of the transport modes, and which might establish a firm basis for further improvements in fatigue management.

As a committee of the Commonwealth Parliament, we have focussed our attention on those areas where the Commonwealth Government has, or should have, a special role to play.

Better management of fatigue in transport requires many things: better training and support; better work practices; better job scheduling; more effective regulation; and better awareness of optimal work and rest patterns.

But first and foremost, better management of fatigue requires that governments and all players in the industry recognise the scale of the problem and accept responsibility for improving the way it is managed.

The commercial costs, the environmental costs and, most of all, the human costs, of not accepting this responsibility are too great to ignore.

Priority issues

The diversity of transport agencies and government agencies that impact on the transport industry and the nature of the issue required us to take a broad approach. As such, we have made a significant number of recommendations.

However, it was clear that in terms of cost and human impact the road transport sector constituted the major problem area for fatigue. As a result, we have made a greater number of recommendations in this sector of the transport industry.

We believe that all the recommendations provide for useful and much needed action to be taken. However, there are eleven key recommendations that we feel represent priority issues for the government to address.

National operator accreditation scheme for the road transport sector

If by mid-2002, there has not been an appreciable improvement in the way in which the road transport sector is addressing the problem of fatigue management, the Minister for Transport and Regional Services should seek Australian Transport Council approval for the development of a national operator accreditation scheme for the road transport sector. The accreditation scheme should:

- cover owner-drivers, fleet operators, freight forwarders, agents and brokers;
- incorporate training and standards for fatigue management and business management; and
- be administered by an national heavy vehicle safety and accreditation agency.

(Recommendation 33)

Driving while fatigued an offence

The Minister for Transport and Regional Services should:

- promote, through the Australian Transport Council, the development of State and Territory laws making driving while fatigued an offence;
- promote the development of additional laws with the effect of suspending the registration of a vehicle if a driver is found guilty of driving while fatigued; and
- fund the Australian Transport Safety Bureau to commence a program of research to validate the accuracy and reliability of fatigue testing technologies; in particular, those technologies which might be used at the roadside and workplace.

(Recommendation 34)

Transport industry drug free policy and mandatory workplace drug testing

The Minister for Transport and Regional Services, through the Australian Transport Council and in conjunction with industry, should develop and implement a drug free policy for the road transport industry, with all road transport companies being required to institute and administer mandatory drug testing in the workplace. Such testing should include subcontract drivers as well as company drivers.

(Recommendation 35)

Rest opportunities in the road transport industry

The National Road Transport Commission should prepare amendments to the Road Transport Reform (Driving Hours) Regulations:

- incorporating time of day considerations into allowable driving and rest periods; and
- in accordance with time of day considerations, amend the regulations with a view to increasing the minimum allowable rest periods.

(Recommendation 2)

Fatigue management as a basic requirement for air operators

The Civil Aviation Safety Authority should ensure that the proposed new Civil Aviation Safety Regulations relating to Air Operator Certification (CASR Part 119) clearly state that the maintenance of sound fatigue management practices is an essential component of an air operator's safety system.

(Recommendation 4)

Fatigue management in aircraft maintenance

The Civil Aviation Safety Authority should be required to develop hours of duty rules for aircraft maintenance engineers, incorporating fatigue management principles and auditable fatigue management systems.

(Recommendation 7)

Improving aviation safety auditing

The Civil Aviation Safety Authority should:

- take immediate steps to address the concerns raised by the Bureau of Aviation Safety Investigation and the Australian National Audit Office regarding the effectiveness of its aviation safety auditing; and
- within three months of this report being tabled in Parliament, report back to this Committee on the steps that have been taken to address those concerns and improve its aviation safety auditing, with particular reference to fatigue management in the aviation sector.

(Recommendation 12)

Fatigue management in the rail industry

The Minister for Transport and Regional Services should propose amendments to the current draft of the *National Codes of Practice for Railways* to incorporate:

- more detailed hours of work rules for train crew, taking into account prior patterns of work and rest, the length of time on duty and the time of day of the work period; and
- a clear statement of the obligations that employers have to manage fatigue in the workplace.

(Recommendation 13)

National adoption of Safe-T-Cam

The Minister for Transport and Regional Services should:

- examine the feasibility of issuing drivers with a personal electronic tag to complement the Safe-T-Cam system; and
- seek Australian Transport Council approval for the Australia-wide introduction of the Safe-T-Cam system.

(Recommendation 21)

A national OH&S standard and code of practice on fatigue in the workplace

The National Occupational Health and Safety Commission should:

- develop and declare a national standard on fatigue in the workplace, identifying fatigue as a workplace hazard in the transport industry and setting out common elements for inclusion in State and Territory occupational health and safety legislation; and
- declare a corresponding code of practice to provide guidance to employers and employees on how best to comply with the national standards.

(Recommendation 30)

Codes of conduct for all sectors of the transport industry

The Minister for Transport and Regional Services should:

- work with the Australian Transport Council, transport industry representatives and occupational health and safety specialists to develop workplace safety codes of conduct for each sector of the transport industry to provide guidance of how best to manage fatigue; and

- ensure that these codes are national in application, complement existing regulatory and occupational health and safety requirements and, where appropriate, are given status by being referenced in relevant transport or occupational health and safety legislation.

(Recommendation 31)

Paul Neville MP

Chair



Membership of the Committee

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Deputy Chair Steve Gibbons MP

Members Gary Hardgrave MP

Colin Hollis MP

Hon David Jull MP

Peter Lindsay MP

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Terms of reference

The House of Representatives Standing Committee on Communications, Transport and the Arts was asked by the Hon John Anderson MP, Minister for Transport and Regional Services to inquire into, and report on managing fatigue in transport under the following terms of reference.

- 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.



Abbreviations

AAPMA	Australian Association of Ports and Marine Authorities
AFAP	Australian Federation of Air Pilots
AMSA	Australian Maritime Safety Authority
ANAO	Australian National Audit Office
ASFA	Aviation Safety Foundation Australia
ATC	Australian Transport Council
ATSB	Australian Transport Safety Bureau
AWA	Australian Workplace Agreement
BAC	Blood Alcohol Content
BASI	Bureau of Air Safety Investigation
BTE	Bureau of Transport Economics
CASA	Civil Aviation Safety Authority
CAOOAA	Civil Air Operations Officers Association of Australia
EBA	Enterprise Bargaining Agreement
FORS	Federal Office of Road Safety
FMS	Fatigue Management Scheme
ICAO	International Civil Aviation Organisation
MIIU	Marine Incident Investigation Unit

NMSC	National Marine Safety Committee
NOHSC	National Occupational Health and Safety Commission
NRTC	National Road Transport Commission
TFMS	Transitional Fatigue Management Scheme



Recommendations

Recommendation 1

The Australian Transport Safety Bureau should:

- develop cross-modal national standards for identifying, assessing and recording fatigue related accidents and incidents; and
- establish a national database to provide figures on the extent, impact and associated cost of fatigue in all modes of transport on a national level (paragraph 1.95).

Recommendation 2

The National Road Transport Commission should prepare amendments to the Road Transport Reform (Driving Hours) Regulations:

- incorporating time of day considerations into allowable driving and rest periods; and
- in accordance with time of day considerations, amend the regulations with a view to increasing the minimum allowable rest periods (paragraph 2.42).

Recommendation 3

The National Road Transport Commission should introduce measures to ensure that participation in the two fatigue management schemes provided for in the Road Transport Reform (Driving Hours) Regulations is not beyond the financial means of any operator (paragraph 2.48).

Recommendation 4

The Civil Aviation Safety Authority should ensure that the proposed new Civil Aviation Safety Regulations relating to Air Operator Certification (CASR Part 119) clearly state that the maintenance of sound fatigue management practices is an essential component of an air operator's safety system (paragraph 2.66).

Recommendation 5

The Civil Aviation Safety Authority should implement a Fatigue Risk Management System to regulate flight and duty times for aircrew as soon as it is feasible to do so (paragraph 2.74).

Recommendation 6

The Civil Aviation Safety Authority should take urgent action to ensure that, while developing new rules for aircrew flight and duty times:

- the current rules for regulating flight and duty times are consistently and fairly applied until such time as they are replaced by new rules; and
- the practice of issuing exemptions to the current rules is reviewed, refined and administered consistently (paragraph 2.90).

Recommendation 7

The Civil Aviation Safety Authority should be required to develop hours of duty rules for aircraft maintenance engineers, incorporating fatigue management principles and auditable fatigue management systems (paragraph 2.111).

Recommendation 8

In determining whether an operator has implemented a fatigue management system, one of the factors the Civil Aviation Safety Authority should consider is whether shift rosters for aircraft maintenance staff are routinely tested using reputable computer-based fatigue modelling packages (paragraph 2.113).

Recommendation 9

The Civil Aviation Safety Authority should:

- require that operators of commercial transport services introduce and maintain effective systems to monitor staffing levels and anticipated workloads; and
- routinely review these records to satisfy itself that effective staffing levels are maintained (paragraph 2.115).

Recommendation 10

The Civil Aviation Safety Authority should:

- develop comprehensive hours of duty regulations for air traffic controllers, incorporating basic fatigue management principles;
- require all air traffic service providers to maintain auditable fatigue management systems; and

- in determining whether an air traffic service provider has implemented an adequate fatigue management system, consider whether shift rosters for air traffic controllers are routinely tested against reputable computer-based fatigue modelling packages (paragraph 2.127).

Recommendation 11

Airservices Australia and other providers of air traffic services should, as a matter of urgency, test the shift rosters for air traffic control staff against a reputable computer-based fatigue modelling package and develop an interim fatigue management plan to mitigate the risks of a fatigue related air traffic control incident (paragraph 2.130).

Recommendation 12

The Civil Aviation Safety Authority should:

- take immediate steps to address the concerns raised by the Bureau of Air Safety Investigation and the Australian National Audit Office regarding the effectiveness of its aviation safety auditing; and
- within three months of this report being tabled in Parliament, report back to this committee on the steps that have been taken to address those concerns and improve its aviation safety auditing, with particular reference to fatigue management in the aviation sector (2.147).

Recommendation 13

The Minister for Transport and Regional Services should propose amendments to the current draft of the *National Codes of Practice for Railways* to incorporate:

- more detailed hours of work rules for train crew, taking into account prior patterns of work and rest, the length of time on duty and the time of day of the work period; and
- a clear statement of the obligations that employers have to manage fatigue in the workplace (paragraph 2.156).

Recommendation 14

The Minister for Transport and Regional Services should ensure that the Guidelines for Australian Marine Pilotage Standards are amended:

- to include detailed information and requirements on fatigue and fatigue management; and
- to require that marine pilotage service providers implement and maintain auditable fatigue management programs (paragraph 2.179).

Recommendation 15

If, by early 2002, there has not been demonstrable progress towards national consistency in standards for marine pilotage operations, including fatigue management, the Minister for Transport and Regional Services should establish a national regulatory regime imposing standards for marine pilotage in the areas of accreditation, operational requirements and safety regulation (paragraph 2.181).

Recommendation 16

The Australian Maritime Safety Authority should consider whether its *Model Code of Conduct for Coastal Pilots* should be amended to incorporate guidance about the maximum acceptable duration for tours of duty and the length of rest breaks appropriate to recover from such tours (paragraph 2.188).

Recommendation 17

The Minister for Transport and Regional Services should commission the Australian Maritime Safety Authority, in conjunction with the National Marine Safety Committee, to investigate the risk to crew and public safety of quick turnaround times in port and consider whether it is appropriate to regulate for adequate rest times in port for seafarers (paragraph 2.199).

Recommendation 18

The Minister for Transport and Regional Services should negotiate with his counterparts in Queensland, New South Wales and Victoria to ensure that sufficient funding is available to implement the fatigue management measures identified by the *National Route 39 Driver Fatigue Strategy* (paragraph 2.214).

Recommendation 19

The Minister for Transport and Regional Services should negotiate with his counterparts in each of the States and Territories to establish working groups similar to the National Route 39 Driver Fatigue Committee, with a view to developing driver fatigue strategies for each major interstate transport route (paragraph 2.216).

Recommendation 20

The Minister for Transport and Regional Services should provide funding for a national audit of heavy vehicle roadside rest areas, focussing in particular on facilities available on the national highway. The audit should report on the number of rest areas, the quality of facilities, the distance between rest areas, and the role of all tiers of government in planning and funding the development of rest areas, with the aim of developing national guidelines for the provision of heavy vehicle rest area facilities (paragraph 2.234).

Recommendation 21

The Minister for Transport and Regional Services should:

- examine the feasibility of issuing drivers with a personal electronic tag to complement the Safe-T-Cam system; and
- seek Australian Transport Council approval for the Australia-wide introduction of the Safe-T-Cam system (paragraph 2.249).

Recommendation 22

The Australian Transport Safety Bureau should establish guidelines for the use of computer-based fatigue modelling packages in all modes of transport (paragraph 2.277).

Recommendation 23

The Commonwealth should provide research funding for the further development of vehicle cabin gas monitor devices, with a view to establishing Australia at the leading edge of this technology (paragraph 2.290).

Recommendation 24

The Minister for Transport and Regional Services should seek the strongest possible cooperation from his State and Territory colleagues at the Australian Transport Council to:

- develop transport operator education programs aimed at improving business skills in the road transport sector; and
- establish a government and industry sponsored training fund to subsidise access by owner-drivers to business education programs (paragraph 3.36).

Recommendation 25

The Minister for Transport and Regional Services should convene a series of transport industry round-table meetings to examine:

- the extent to which the economics of the road transport sector pose a threat to public safety; and
- the measures which might be implemented to improve staffing levels within the transport industry, to ensure that freight rates represent a fair return to operators on their investment, and to ensure that methods of payment do not encourage unsafe operations (paragraph 3.37).

Recommendation 26

The Minister for Transport and Regional Services, in consultation with the Treasurer, should direct the Productivity Commission to include fatigue and

fatigue management as key features of any future inquiries into transport (paragraph 3.38).

Recommendation 27

The Employment Advocate should, when providing information to parties to an Australian Workplace Agreement (in accordance with Section 170VO of the *Workplace Relations Act 1996*) include explicit information on fatigue and fatigue management, particularly about the requirements of any industry codes of practice or government regulations in the transport industry (paragraph 3.60).

Recommendation 28

The Australian Industrial Relations Commission should ensure that explicit information on fatigue and fatigue management is provided to all parties engaged in negotiating an Enterprise Bargaining Agreement in the transport industry (paragraph 3.61).

Recommendation 29

The Minister for Transport and Regional Services, in consultation with the Minister for Employment, Workplace Relations and Small Business, should review a representative selection of the Australian Workplace Agreements and Enterprise Bargaining Agreements applying to the transport industry to ensure compliance with existing occupational health and safety requirements and to assess how they rate against accepted fatigue management principles (paragraph 3.65).

Recommendation 30

The National Occupational Health and Safety Commission should:

- develop and declare a national standard on fatigue in the workplace, identifying fatigue as a workplace hazard in the transport industry and setting out common elements for inclusion in State and Territory occupational health and safety legislation; and
- declare a corresponding code of practice to provide guidance to employers and employees on how best to comply with the national standards (paragraph 3.85).

Recommendation 31

The Minister for Transport and Regional Services should:

- work with the Australian Transport Council, transport industry representatives and occupational health and safety specialists to develop workplace safety codes of conduct for each sector of the transport industry to provide guidance on how best to manage fatigue; and

- ensure that these codes are national in application, complement existing regulatory and occupational health and safety requirements and, where appropriate, are given status by being referenced in relevant transport or occupational health and safety legislation (paragraph 3.99).

Recommendation 32

The Minister for Transport and Regional Services should propose to the Australian Transport Council a strategy to encourage:

- transport companies to seek quality management accreditation through Standards Australia and the International Organisation for Standardisation; and
- the road, aviation and maritime sectors, in conjunction with Standards Australia, to develop sector specific Australian Standards for Safety, incorporating fatigue management principles (paragraph 3.107).

Recommendation 33

If by mid-2002, there has not been an appreciable improvement in the way in which the road transport sector is addressing the problem of fatigue management, the Minister for Transport and Regional Services should seek Australian Transport Council approval for the development of a national operator accreditation scheme for the road transport sector. The accreditation scheme should:

- cover owner-drivers, fleet operators, freight forwarders, agents and brokers;
- incorporate training and standards for fatigue management and business management; and
- be administered by a national heavy vehicle safety and accreditation agency (paragraph 3.124).

Recommendation 34

The Minister for Transport and Regional Services should:

- promote, through the Australian Transport Council, the development of State and Territory laws making driving while fatigued an offence;
- promote the development of additional laws with the effect of suspending the registration of a vehicle if a driver is found guilty of driving while fatigued; and
- fund the Australian Transport Safety Bureau to commence a program of research to validate the accuracy and reliability of fatigue testing technologies; in particular, those technologies which might be used at the roadside and workplace (paragraph 3.134).

Recommendation 35

The Minister for Transport and Regional Services, through the Australian Transport Council and in conjunction with industry, should develop and implement a drug free policy for the road transport industry, with all road transport companies being required to institute and administer mandatory drug testing in the workplace. Such testing should include subcontract drivers as well as company drivers (paragraph 3.150).

Recommendation 36

The Australian Transport Safety Bureau, in consultation with peak industry bodies should develop an industry-wide drug-free workplace program and associated counselling program, aimed equally at discouraging employees from taking drugs and encouraging employers to establish work practices which respect basic fatigue management principles (paragraph 3.151).

Recommendation 37

The Australian Transport Safety Bureau should take a leadership role in coordinating research and evaluating fatigue issues and initiatives (paragraph 3.163).

Recommendation 38

The Australian Transport Safety Bureau should establish and coordinate an ongoing program of consultation with relevant State and Territory agencies designed to:

- share experiences in the development of road safety education programs, particularly those campaigns aimed at educating the community about the dangers of driving while fatigued, with a view to achieving a higher degree of consistency; and
- develop, in conjunction with community groups, a nationally consistent approach to the frequency and location of driver-reviver facilities (paragraph 3.175).

Recommendation 39

The Australian Transport Safety Bureau, with assistance from the National Occupational Health and Safety Commission and in conjunction with industry and the scientific community, should establish a cross-modal working group to develop and coordinate fatigue awareness education material and programs for the transport sector (paragraph 3.188).

Recommendation 40

The National Occupational Health and Safety Commission, in conjunction with Commonwealth and State and Territory transport authorities, should develop and disseminate customer focused information and education packages on:

- best practices in fatigue management;
- legal obligations and responsibilities for fatigue management; and
- the legal and fatigue implications of inadequate slotting management (paragraph 3.201).

Recommendation 41

Fatigue and fatigue management training should be incorporated into management training programs for all those engaged in a management role in all sectors of the transport industry, whether they be a private company or a government entity which is responsible for contracting transport related services (paragraph 3.211).



Executive summary

This report is in three parts:

- the first part identifies the main causes and impacts of human fatigue in the Australian transport industry;
- the second, discusses how fatigue in transport is currently being addressed; and
- the third, considers what new strategies should be implemented to ensure that fatigue in the transport industry is managed effectively.

The causes and impact of fatigue

The fundamental and interrelated causes of fatigue in the transport industry are:

- the time of day that work takes place;
- the length of time spent at work and in work related duties; and
- the amount of quality rest obtained prior to and after a work period.

Fatigue is widely recognised as a core safety issue in the transport industry. Australian research indicates that fatigue is four times more likely to be a contributor to workplace impairment than drugs or alcohol.

Between 20 and 30 per cent of road accidents involve driver fatigue. In the marine pilotage industry it has been estimated that 10 to 25 per cent of accidents in the Great Barrier Reef are fatigue related. In aviation, around seven per cent of accidents are considered to be fatigue related. Experts agree that these are conservative estimates and that the actual contribution of fatigue to transport accidents may be much higher.

As well as having potentially catastrophic personal consequences, fatigue related accidents are a substantial financial burden on the community. Fatigue related

road accidents alone cost around A\$3 billion per year, with fatigue related heavy vehicle accidents costing approximately A\$300 million.

Responsibility for addressing this problem must be shared between all players in the transport industry: individual operators, company managers, consigners, customers and governments. The law is now recognising that not only do transport companies have a duty of care to maintain safe systems of work for their employees, but that consigners and customers are responsible for ensuring that their scheduling and delivery demands do not encourage operators to work in an unsafe manner. The chain of responsibility is fast becoming established.

Initiatives in fatigue management

A broad range of initiatives have been developed and implemented to address the problem of fatigue. Some are government sponsored, while others are industry sponsored. Some are prescriptive, while others are non-prescriptive. Some are regulatory, while others have a technological base. These differences are evidence of the fact that fatigue management is a complex, dynamic and growing field of endeavour.

Road initiatives

The National Road Transport Commission has developed a package of regulatory reforms to specify allowable hours of work in the road transport sector. These reforms are being implemented in the eastern States. Although we support the key features of these reforms, we make a number of recommendations aimed at:

- incorporating time of day considerations into allowable work and rest periods;
- ensuring that participation in the fatigue management programs provided for by the regulations is not beyond the financial means of owner-operators; and
- ensuring that the regulations allow for sufficient and quality rest by increasing the minimum allowable rest periods.

We also support the non-prescriptive, occupational health and safety based regimes operating in Western Australia and the Northern Territory. There is often debate in academic circles about the relative merits of prescriptive and non-prescriptive approaches to fatigue management. We do not see the two approaches as being mutually exclusive. They are complementary and there is much that one can learn from the other.

Aviation initiatives

We support the steps currently being taken by the Civil Aviation Safety Authority to develop 'outcome' based regulatory regimes for:

- air operator certification;
- flight and duty times for air crew and cabin crew;
- duty times for aircraft maintenance engineers; and
- air traffic control service providers.

It is, however, essential that these regimes demand the implementation of sound fatigue management practices as a basic requirement for operating in the Australian aviation industry.

We are especially concerned to see that sound fatigue management practices are embedded in the aviation maintenance sector of the industry. A recent survey revealed that fatigue is the second most cited causal factor when respondents were asked the reasons for a safety occurrence or incident. Because the commercial realities of the industry require regular night and shift maintenance work, aircraft operators and the Civil Aviation Safety Authority should pay special attention to fatigue management in this sector.

Similarly, there is a need for better fatigue management practices to be required of air traffic service providers, especially as moves are made to deregulate this part of the industry.

We are alarmed at the state of the current system of regulating flight and duty times for air crew. The current system, as provided for by Civil Aviation Order Part 48, is universally regarded as being anachronistic and deeply flawed. The Civil Aviation Safety Authority must take urgent action to ensure that the current system operates in a safe and efficient manner while the new regulatory regime is being prepared.

Disturbing questions have also arisen about the frequency and quality of the Civil Aviation Safety Authority's surveillance and auditing practices. Effective surveillance and auditing is essential if safety standards are to be maintained and if sound fatigue management practices are to be embedded in the industry. The need for effective auditing will become even more pronounced when the new 'outcome' based regulatory regimes are implemented.

Rail initiatives

We are pleased to note that the Government, in response to our report on rail reform (*Tracking Australia: An inquiry into the role of rail in the national transport network*), has signalled that it will act decisively if clear progress is not made in

regard to nationally consistent arrangements for track access, accreditation and safety standards. We support this move and will monitor progress in this area closely.

We are equally pleased that the rail industry has taken some positive steps towards managing fatigue effectively, by:

- sponsoring a Australia Rail Consortium Shiftwork and Workload study; and
- developing a National Code of Practice for Railways, which deals broadly with fatigue.

Notwithstanding these developments, more needs to be done to ensure that the National Code reflects a sophisticated understanding of fatigue management principles and to ensure that all in the industry work co-operatively to address the problem of fatigue.

Marine initiatives

Our 1998 report *Ship Safe* addressed many of the fatigue issues facing seafarers. In this report we discuss the problems faced by marine pilots and caused by quick turnaround times for ships in port.

We are pleased to note that there has been considerable progress towards the development of national operational and safety standards for marine pilotage. The guidelines which underpin these standards should, however, deal more explicitly with fatigue and how best to manage it.

Most ships docking in Australian ports now spend less than 24 hours in port. Time ashore has traditionally been a time for ship crews to recover and rest. Quick turnaround times, and generally inadequate crew levels, present a serious fatigue risk for crews, particularly those who have been engaged in loading and unloading duties. We believe the Commonwealth should investigate this matter further and consider developing an appropriate regulatory response.

Non-regulatory approaches to fatigue management

Various non-regulatory fatigue management initiatives have also been introduced around the country, including:

- measures taken within companies to carefully plan and manage transport needs across the entire transport chain;
- by governments to build more and better road side heavy vehicle rest areas; and
- by industry to develop voluntary safety accreditation programs.

All of these initiatives are commendable.

We are particularly interested in the potential of technology to help support broader fatigue management initiatives. Governments should take an active role in sponsoring the development, testing and wide implementation of measures such as:

- computer-based fatigue modelling systems, for the fatigue effect of testing work schedules and rosters;
- Safe-T-Cam, an automated heavy vehicle monitoring system;
- fatigue testing devices, particularly those which might be used at the road-side and workplace; and
- car cabin gas monitors and driver vigilance systems.

It is important, however, to recognise that technology can only ever be an adjunct to effective rostering, education and regulation, not an alternative.

What more should be done

In considering what more should be done to manage fatigue in the transport industry we consider:

- whether some of the underlying economic causes of fatigue can be ameliorated;
- whether the current regulatory regimes are as comprehensive and complementary as they should be; and
- whether fatigue awareness can be better promoted throughout the transport industry.

Addressing the economic causes of fatigue

There is little doubt that increased competition in the Australian transport industry has resulted in lower transport costs for consumers. But there is a growing body of evidence indicating that we are fast approaching the point where best practice in efficiency is jeopardising best practice in safety.

The pressure on transport businesses to be competitive has led to decreasing staffing levels, increasing hours of work and higher asset utilisation levels, all of which have increased the risk of fatigue-related accidents. It is clear that operators struggling to remain commercially viable are exposed to the greatest risks.

There is no role for governments in making decisions about optimal staffing levels or rates of payment. These are matters to be settled by the industry itself. In this regard, customers and freight-forwarders have a special responsibility, as they

have, over recent years, imposed unrealistic delivery expectations at the same time as benefiting from the reduced freight rates.

Nevertheless, governments have a clear role to ensuring public safety and should take urgent action to:

- co-sponsor the development of transport operator business education programs;
- co-sponsor a training development fund for owner-operators;
- direct the Productivity Commission to include fatigue and fatigue management as key features of any future inquiries into the transport industry; and
- ensure that present and future industrial agreements do not entrench excessive working hours at the expense of safe systems of work.

Improving the regulatory environment

Much of the debate during our inquiry revolved around how best to regulate the transport industry: whether through prescriptive legislation and regulation, or non-prescriptive 'outcome' based approaches.

We see merit in both approaches.

Prescriptive legislation will continue to have a place in the industry for some time yet because in an area where concerns about personal and public safety are growing, legislated rules provide a high degree of consistency, certainty and confidence.

There is also a place for rules that require an 'outcome' (such as a safe working environment) without prescribing the means of achieving that outcome. The flexibility of allowing transport operators to develop their own responses to the particular fatigue risks they confront creates an environment where new approaches can be developed.

We are pleased to note that the regulatory regimes that are currently evolving in the road transport and aviation sectors contain elements of both approaches. This type of model allows for the advantages of both to be realised at the same time as acknowledging the limits of each.

However, there are gaps in the current regulatory regimes that must be filled.

More and clearer guidance must be provided to transport operators in all sectors on what constitutes a safe system of work. This guidance should be provided by a range of complementary measures:

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- the development of national occupational health and safety standards and codes of practice on fatigue;
 - the development of industry codes of practice on operating safe workplaces and effectively managing fatigue; and
 - more comprehensive use of quality management accreditation through Standards Australia and the development of Australian Standards for Safety.

We also believe that the road transport sector should catch-up with the rail and aviation sectors and establish requirements that must be met for entry into, and continued operation in the industry. To this end, we recommend that minimum entry requirements be set for the road transport sector, through a system of mandatory operator accreditation.

The accreditation scheme should cover owner-drivers, fleet operators, freight forwarders, agents and brokers and would require operators to demonstrate knowledge of fatigue and fatigue management strategies and business management skills. New operators wishing to enter the road transport industry could, if required, be given access to new enterprise initiative type education schemes prior to applying for a accreditation to operate. This would also provide a mechanism for removing from the industry those operators—owner-drivers, fleet operators, freight forwarders, agents and brokers—who establish a pattern of breaching regulations and who pose a threat to public safety and themselves.

In general, the accreditation scheme is aimed at promoting culture change in the road transport industry. However, operating a vehicle while fatigued is not an offence similar to being under the influence of alcohol and it is clear that without some form of enforcement and penalties, drivers (commercial and non-commercial) and operators will continue to ignore fatigue (whether for commercial or personal reasons), posing an unacceptable risk to public safety. In light of advances in our understanding of fatigue and the technology to accurately detect and measure fatigue, we believe that driving while fatigued should be made an offence.

Legislators and the general public have, in the past, made tough decisions in regard to other critical road safety issues such as drink driving, speeding and seatbelts, often against strong opposition but which resulted in appreciable improvements in road safety. These measures are now widely accepted as being necessary. The issue of driver fatigue requires a similar approach.

In recognition of the principle of chain of responsibility, we propose that both the driver and the owner of a vehicle should be culpable for a fatigue related offence. This would complement the proposed accreditation scheme by providing very

real penalties for those who, despite the plethora of measures designed to promote better fatigue management, choose to act irresponsibly and dangerously.

Drugs in transport

The use of drugs in the transport industry, particularly road transport, is a serious problem. Although the focus is predominantly on individual operators, research indicates that an important factor influencing drug use is the way a company is managed.

With the amount of knowledge that is now available on fatigue and proper fatigue management, it is unconscionable that any operator should feel the need to take drugs in order to be able to do their job. To this end, we propose a two tiered approach. Given the high incidence of drug taking in the road transport industry and the obvious dangers to public safety, we firmly believe that road transport companies should adopt a drug free policy and that all road transport companies should be required to implement a mandatory drug testing regime. We feel very strongly that transport companies must take responsibility for drug use by their truck drivers, including subcontractors. In support of this strategy, a nationally consistent and broad ranging drug education and counselling program is required for both employees and managers. The program must be linked to other fatigue management strategies.

The coordination of research

Although Australia is a leader in fatigue research, government support for and coordination of the national research effort lags behind that evident in other countries.

The Government, through the Australian Transport Safety Bureau, should take a lead in coordinating and providing a national focus for the research effort and evaluating fatigue related initiatives.

What needs to be done to promote awareness?

We are pleased to note that there appears to be increasing community recognition of fatigue as a serious safety issue, as indicated in the 1999 *Community Attitudes Survey* conducted by the Australian Transport Safety Bureau. The fatigue message is already widely promoted by State and Territory governments to road users, and is clearly having a positive impact. We believe that the development of a nationally consistent message would add value to the public awareness programs currently being run.

While the road and rail sectors are developing increasingly sophisticated means of educating employees about the importance of fatigue management, the same commitment seems to be lacking from the aviation and maritime transport sectors. We feel very strongly that ongoing employee education is an important facet of

fatigue management. Individuals have a responsibility to manage their fatigue and use rest periods so that they are fit for work. This requires the development of a basic, nationally consistent fatigue awareness and education program, that can be used as the foundation for the development of modal specific education programs.

There is clearly a lack of understanding and recognition of fatigue by customers of the transport industry. Unreasonable or ill-informed demands from those who use the transport industry or from agents who organise the movement of freight, have been cited as one of the greatest contributing factors to fatigue in the road transport industry. Typically, the feeling in the transport industry is that customers will not accept that they are part of the fatigue problem and therefore also part of the solution. Based on the evidence we received throughout this inquiry there is an obvious need to develop education programs for customers of the transport industry and freight agents to ensure that they take on their share of the responsibility for ameliorating fatigue.

One important area where customer education is clearly required is in the impact on driver fatigue of inadequate slotting arrangements. Many customers appear not to recognise that the chain of responsibility principle imposes a legal obligation on them not to take action that may contribute to a fatigue related accident.

The way a company organises and manages their operations can also contribute to employee fatigue. The continuation of accidents in air, sea, road and rail transport indicates that some transport companies have been and continue to be willing to risk penalties and push employees to the limit, indicating a lack of understanding of effective fatigue management. Education and training in fatigue, fatigue management, and occupational health and safety obligations should be a basic training prerequisite for all those engaged in a management role in the transport industry, whether they be a private company or a government entity which is responsible for contracting transport related services.