# NSW SUBMISSION

# TO THE HOUSE OF REPRESENTATIVES INQUIRY

# INTO MANAGING FATIGUE IN TRANSPORT

## 1. INTRODUCTION

Fatigue is becoming recognised as a major safety issue for the land transport industry in NSW and Australia. In NSW, participants in both the road and rail sectors are considering strategies to better understand and manage fatigue.

There are major operational differences between the road and rail activities. Not least, road transport involves a very large number and variety of vehicles on public domain infrastructure which is extensively and simultaneously used by private passenger cars. The number and variety of rail operations is much more limited, but arguably there is a stronger control or engineering relationship with infrastructure.

Also, there are substantial differences in the framework of safety regulation for road and rail in Australia. Regulation for road is mostly rule-based or 'prescriptive' in nature. Accreditation, rather than specification of rules, is used for the rail industry in what is often termed a 'co-regulatory' approach.

These differences are reflected in regulation for fatigue management. For road transport, the regulations set specific hours limits for drivers of heavy vehicles. For rail transport, participants need to demonstrate the effectiveness of their systems in enhancing safety, such effectiveness including measures for minimising fatigue and its adverse effects.

Both approaches have merit in the current land transport environment. Fatigue research and its management is an evolving field. It is not clear at this time whether there is one single and unchanging approach to fatigue management that would be optimal for all of the land transport industry.

In NSW the focus of fatigue management is clearly and firmly on safety. As in the past, NSW will not implement changes to current arrangements unless the changes are proven to result in improved safety outcomes. NSW will not compromise on safety.

This submission considers the background to both the road and rail approaches and current practices, with the focus being on the transport industry rather than private vehicles. It represents the views of the NSW Department of Transport and the Roads and Traffic Authority of NSW (RTA). FreightCorp, the NSW rail freight operator, has submitted separately to the Inquiry, as has National Rail Corporation.

## 2. BACKGROUND

### Land transport

Land transport in NSW comprises freight and passenger markets serviced by road and rail operators. Road transport is a substantially larger sector in terms of operator numbers and pervasiveness of task.

In this regard, the NSW approach is to see road and rail as complementary as well as competitive modes. This emphasises the need for road freight and rail haulage to be integrated to provide seamless road, rail and port interchanges. This is vital to ensure quick and easy transfers.

The road and rail sectors are, however, quite different. Several aspects of this are noted below.

In NSW there is around 3,000 km of National Highways, 14,600 km of State Roads, 18,400 km of regional roads and 141,000 km of local roads.

Based on figures published in a recent National Road Transport Commission Bulletin ('Who carries what where', April 1999), it was estimated in 1995 that there were approximately 210,000 fleets operating freight carrying trucks in Australia and around 42,000 of these were hire or reward operators. In NSW, around 75% of fleets are for short distance operations and 25% for long distance operations.

The Rail Access Corporation owns and operates the main line rail track in NSW. This consists of 8,500 km of track (Rail Access Corporation Annual Report, 1998).

There are currently 80 rail operators, however, only three of these are major operators – State Rail, FreightCorp and National Rail Corporations. There is an increasing a number of other operators, operating on main lines, with new entrants including Northern Rivers RailRoad and Austrac.

In both road and rail sectors, the conduct and performance of individual operators has significant safety implications for other operators, their customers and for the public. Measures to effectively regulate the road and rail industries need to reflect the individual characteristics of the sectors including operator numbers, origin/ destinations, network configurations, and physical accessibility to and control of infrastructure.

### Road transport industry and fatigue

The road freight sector, particularly the long-distance segment, is highly internally competitive, with a large number of operators and relatively low economic barriers to entry. An apparent consequence of this is that there are pressures that work in the direction of drivers working too long and resting too little.

Australian Bureau of Statistics data shows that around 80% of Australia's interstate road freight moves through NSW. Together with the large area of the State and its strategic position on eastern sector routes, this means that NSW has a high exposure to long distance road transport operations and fatigue related truck crashes.

Fatigued heavy vehicle drivers are a substantial road safety problem in NSW. RTA crash statistics show that in NSW for the 6 years 1993 to 1998 inclusive, heavy trucks were involved in an annual average of 1,041.8 casualty crashes (ie. where there was at least one fatality or injury). Fatigued heavy truck drivers were involved in an annual average of 80.8 casualty crashes (7.8% of all casualty crashes involving heavy trucks). Of those crashes, the great majority, an annual average of 58.7, involved fatigued **articulated truck** drivers (5.6% of all casualty crashes involving heavy trucks). The crashes involving fatigued heavy truck drivers accounted for an annual average of 98.3 casualties, an average 68.5 of those arising from crashes involving fatigued **articulated truck** drivers. Over the six-year period, there has been a tendency toward an increasing number of crashes and casualties involving fatigued articulated truck drivers.

The above statistics show that over a number of years, heavy vehicles have been involved in a considerable number of crashes involving death or serious injury; a substantial proportion of the heavy vehicle drivers involved were fatigued; the majority of the fatigued heavy vehicle drivers involved were driving articulated trucks. Articulated trucks are used predominantly in the long-haul segment of the industry.

In 1989, two particularly severe heavy vehicle crashes in NSW involving fatigued drivers resulted in numerous lost lives and serious injuries. This placed a focus on improving fatigue management, and has been a strong impetus behind the NSW approach to the development of appropriate regulations and other measures to counter fatigue in road transport – as is outlined in section 3 below.

**Rail transport and fatigue**

Changes in the rail environment, particularly since 1996, have emphasised the need to ensure that there remains a strong focus on all aspects of safety, including fatigue management.

While the system is now open access, there are still – and will likely remain – only a very limited number of major organisational participants. Nonetheless, there is strong internal and external competitive forces, including from the road transport sector.

For a considerable time, fatigue (or its opposite – alertness) has been recognised as an important issue in rail. One illustration of this includes the attention paid by organisations to proper rostering of drivers. Another illustration is the vigilance control system in locomotives – or the so called ‘dead man’s hand’ in CityRail trains. Fatigue continues to be identified by main operators and regulatory authorities as an important and complex matter.

A recent example of the importance and complexity of fatigue and countermeasures was the October 1997 coal train collision at Beresfield. In this case, fatigue was claimed to be one of the contributing factors to the collision, notwithstanding the regular operation of the then vigilance control system. Also, it was claimed that causation of fatigue was not merely the length of time driving on the particular day, but the length and pattern of work in the preceding days.

## 3. REGULATION AND COUNTERMEASURES

Some aspects of fatigue management are covered by the *Occupational Health and Safety Act* (1983) which extends to all industries. This primarily is directed at ensuring a safe workplace for employees.

In addition, there is separate safety regulation for road and rail transport. As in other Australian jurisdictions, in NSW regulation for road and rail activities differ in that road is generally prescriptive and rail is via accreditation, a co-regulatory approach.

### The approach to managing fatigue in the road transport industry

The approach to managing fatigue in the road transport industry includes regulation, provision of rest areas, and ensuring that the road environment is friendly to fatigued drivers. These are briefly addressed below.

The regulation of road transport activities is through the *Traffic Act* (1909). Regulations under the *Traffic Act* include 'hours of duty and rest' laws for truck drivers. This type of scheme has been in place since at least the early 1950s. The basic principle is that since work is fatiguing, and as excessive fatigue can contribute to accidents, enforced hours of rest (or non-work) can improve safety. A key point is that work includes driving and other work activities. Thus, the approach in NSW is not based on driving hours alone, but on hours of work. Notwithstanding that the basic principles of 'duty and rest' have been in place for some time, scientific evidence in recent years has validated the effectiveness of this approach.

Fines are prescribed for drivers who violate the duty and rest regulations. Enforcement officers can also require a driver to cease driving for a period of time if they have failed to take adequate rest.

Importantly, penalties also apply to others in the road transport chain, such as the management of a road freight company or a freight forwarder, if they require a driver to work in excess of the limits or rest for less than the limits. This aspect of the law recognises that drivers may be pressured by others in the 'chain of responsibility' into working longer and resting less than the law requires. In the case of coaches, bus operators also risk having their accreditation to operate in NSW taken away if they consistently violate the duty and rest regulations.

Enforcement is mainly through roadside audits of drivers' log books by RTA inspectors and police. Office audits are conducted by RTA where there is reasonable cause to believe that the limits are being abused by an operator. Intelligence is gathered for reasonable cause audits by monitoring of offence patterns and through reports generated by RTA's Safe-T-Cam system. Safe-T-Cam (outlined below) generates reports of heavy vehicles that have moved from place to place around the State faster than possible within the constraints imposed by the rest break regulations and speed limits.

A second element to the NSW strategy to ensure that heavy vehicle drivers are not fatigued is the provision of rest areas suitable for trucks. The RTA sets out to ensure that heavy vehicle drivers have suitable places to rest. The roadside rest area system

complements other stopping opportunities. The RTA constructs new rest areas and improves existing areas, to meet identified needs. Among other initiatives, the RTA is improving rest area signs, to ensure that drivers know how long they have to travel before they can stop. Although many road houses and service stations provide truck parking, heavy vehicles are not permitted, or are unwelcome, in many places – mainly in towns – where light vehicle drivers take breaks.

A third element to the strategy is to ensure that the road environment is 'friendly' to fatigued drivers. The RTA audits roads to improve their safety. As part of the safety audit program, a method has been developed to identify and treat lengths of road that have a history of driver fatigue crashes.

Road environment safety measures can help to prevent driver fatigue crashes and to reduce the severity of crashes that do occur. For example, sealed shoulders provide greater time for drivers to correct lapses in steering. Roadside areas free of large fixed objects provide recovery and braking time. Guardrail and other cushioning barriers and appropriate roadside plantings soften impacts to lessen injury. Special raised profile line-marking is used on some rural roads. When a vehicle strays across an edge- or centre-line, it makes a high pitched sound to alert the driver.

**National approach to the management of heavy vehicle driver fatigue**

A national approach applies to the management of heavy vehicle driver fatigue. In 1991, the Heads of Government signed the Heavy Vehicle Agreement. This Agreement set up the National Road Transport Commission (NRTC) to oversee the introduction of uniform or consistent regulation of heavy vehicles across Australia. In 1992, the Heads of Governments signed the Light Vehicles Agreement to expand the responsibilities of the NRTC to include regulatory matters for all vehicles.

As is explained in more detail below, the NRTC has, in consultation with the road freight and coach industries, unions, and the roads authorities, developed uniform national laws to regulate measures to control the fatigue of heavy vehicle drivers. It should be noted that although there is now a nominally national approach to regulation in this area, Western Australia and Northern Territory have been excluded from these arrangements.

To understand the current national approach, it is useful to consider some of the historical background to its development. Consideration was being given to a national approach to road transport industry, including fatigue management, at the time of the 1989 NSW bus crashes. Those crashes were followed in NSW, in late 1989, by new laws for hours of duty and rest, based on 12 hours of duty per 24 hours. Rigorous enforcement of the hours of duty and rest became a priority. This enforcement resulted in a backlash from the road freight industry. The NSW Government of the day agreed to a temporary easing of the duty limits from 12 hour to 14, to allow negotiations with industry to continue without disruption to road freight.

At about the same time, work began under the auspices of AUSTROADS, the peak body for Australian roads authorities, to develop a national hours of duty and rest regime. The temporary regime remained in effect in NSW pending completion of the national work. Soon after, in 1991, the NRTC was formed and work on a national regime transferred to that organisation. The negotiations leading to national

agreement were very long and difficult, culminating in Ministers agreeing to (incomplete) regulations and other documentation in January 1998. NSW was very active in the negotiation and law development processes, at one stage succeeding in having the concept of 'rest' included in the regime.

NSW implemented the national regulations in November 1998. To assist drivers and operators to understand the new rules, the RTA has produced an audio cassette that is distributed to truck drivers free-of-charge, as well as the usual brochures.

The national policy for truck driver duty and rest consists of three components:

- a 'Standard' regime based on up to 12 hours 'driving' and 14 hours total work in 24 hours, and 72 hours driving per week;
- a Transitional Fatigue Management Scheme (TFMS) based on 14 hours of driving and/or other work in 24 hours, and 144 hours per 14 days;
- a Fatigue Management Program (FMP), anticipated for the future. In essence, FMP frees participating companies from compliance with prescriptive and complicated driving/work/rest limits, and log book requirements. Instead, participants have to demonstrate, before entry and periodically thereafter, that they have implemented systems to properly manage driver fatigue. A very small scale pilot FMP has been operating in NSW and other states for several years.

**National approach to the management of coach driver fatigue**

Interstate bus and coach operators wishing to operate in NSW must comply with the NSW hours of work and hours of rest regulations.

There also is a national policy for coach (bus) driver fatigue based on the regulated hours of duty and rest model.

The general background to regulated hours for bus drivers is similar to that for trucks. Work under the auspices of the NRTC led to Australian Transport Council Ministers agreeing on a national bus regime in 1994. The then NSW Minister for Roads and Transport opposed those regulations because they did not include, amongst other things, sufficient rest provisions nor did they cover small buses seating between 9 and 12 adults.

Although NSW adopted the main elements of the national bus driving hours regime in late 1994, implementation introduced or retained a number of key safety related enhancements over the national model.

The national bus driving hours approved in 1994 defined only two activities, 'driving' and 'non-driving'. A total of 12 hours of driving time was allowed in any period of 24 hours and the remaining 12 hours was non-driving time. The regulations did not define or limit the activities in the 12 hours of non-driving beyond stating that it could not be driving. In effect, this meant that a bus driver could drive for up to 12 hours and perform other work for as much as 12 hours in a 24 hour period, without taking rest. Furthermore, this could continue indefinitely (albeit that four 24 hour periods in 28 could not include driving, but could be other work).

To correct this flaw, when elements of the national solo[1] bus driving hours were adopted here in November 1994, NSW deviated from the national regime inasmuch as 'driving' was defined to include non-driving work and mandatory periods of **rest** were defined.

In 1998, an NRTC proposal to align bus limits with standard truck limits was approved by a majority of Australian Transport Council Ministers. However, NSW was opposed to the proposal because it increased the hours of work and decreased the hours of rest compared with the earlier version of the national regime. When NSW implemented the national fatigue law in November 1998, small changes were made to the drafting to allow the existing bus regime to be retained.

**Rail**

Regulation for rail safety in NSW is via the *Rail Safety Act* 1993. The Act introduces an accreditation regime.

In this regime, industry participants propose, for Department of Transport acceptance, the safety system they propose to adopt. The Department does not set specific rules relating to hours of duty and rest. However, the Department requires that the safety system proposed by a particular operator does take proper account of fatigue management issues.

Enforcement is through compliance with accreditation. The Department audits accredited organisations. In the event of non-performance, accreditation may be suspended, cancelled or imposed with conditions.

The Department sets out the following clause in operator accreditations:

> *'[the operator] shall ensure the cumulative hours of duty and associated respite periods for its railway safety workers are appropriate for [the operator's] scope of operation. Furthermore, [the operator] shall demonstrate that such hours of duty and respite will, in no way, adversely effect the safe operation of [the operator's] rail activities'.*

It is worth noting that major operators, including National Rail Corporation and FreightCorp are implementing increasingly sophisticated models for fatigue management, for example, in their driver rosters. These models deal not only with hours of duty and rest, but also with times of day when duty or rest is undertaken. This is in recognition of recent research which shows that for a given duration of duty, particular patterns and times of duty can have a significant effect on fatigue.

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[1] Different regimes are specified for 'solo' driving and 'two-up' driving. 'Solo' driving is where there is only one driver in the vehicle at a time. 'Two-up' driving is where two drivers are in the vehicle at a time, taking turns at driving.

## 4. SOME ISSUES ARISING IN FATIGUE MANAGEMENT

Some observations can be made in relation to fatigue management in road and rail transport. An important issue is whether the different regulatory methods of dealing with fatigue in road and in rail leads to a competitive advantage for one sector.

The issue of competitive neutrality is most relevant where the modes compete. This tends to be in the heavy vehicle element of the road sector, that is, heavy and long distance trucks and buses/coaches.

### Road – some contentious issues

Fatigue is an issue for both light (eg. private passenger) and heavy vehicle drivers. However, the underlying causes of behaviour that induces driver fatigue tend to be quite different among light and heavy vehicle drivers. Reflecting this, the RTA, in common with most Australian road authorities, seeks to treat fatigue for light vehicle drivers as a problem distinct from that of fatigue for heavy vehicle drivers.

There are contentious issues in the management of heavy vehicle driver fatigue, particularly through the Standard Scheme. These include:

#### *'Managing fatigue through hours of duty and rest does not work'*

The hours-of-duty-and-rest model is not a flawless way of ensuring that heavy vehicle drivers do not become fatigued at the wheel. It is, however, an approach that directly addresses the main risk factors. It is noteworthy that it is the approach used in most developed countries. Moreover, the US, Canada and Europe, far from discarding the approach, are building improved versions for the future.

In Australia, among the road transport industry, government and road safety research, there are some who are pessimistic about the effectiveness of the hours of duty and rest approach. Much of this pessimism is based on anecdotal evidence that the limits are often violated by some drivers. The evidence of imperfect compliance sometimes leads to calls for the regulatory regime to be abolished. This is equivalent to saying that speed limits are frequently violated, so all speed limits should be abolished. It ignores the fact that the regulated limits for duty and rest, and their enforcement, exert a pressure that counteracts the economic and other pressures that motivate drivers to drive when they are fatigued. It also ignores the fact that it sets a standard for what the community considers tolerable in terms of time and frequency of work and rest.

In summary, although the regulations regarding duty and rest may not be the entire answer, they are an essential part of any approach to managing heavy vehicle driver fatigue. In this regard, it might be noted that Western Australian Transport, which claims to implement a different approach to managing fatigue, publishes an *Industry Code of Practice for Fatigue Management* which sets out standards for driving, other work and rest limits that are closely aligned with the national regulated limits.

It also needs to be acknowledged that the Australian heavy vehicle industry is entering a new era of regulated hours, with new national regulated hours laws, new national log book design and new technology (such as Safe-T-Cam, driver-specific in-vehicle monitoring devices). Also there is much greater awareness of occupational health and safety responsibilities and of legal action against offenders in the entire chain of responsibility including transport operators and company directors. With these changes, the duty and rest hours approach can be expected to be more effective than before.

Some research purports to show that regulated jurisdictions have no better fatigue-related heavy vehicle crash record than unregulated jurisdictions. However, a careful analysis of the relevant data does not necessarily support this view. For example, comparisons need to take accounts of other factors such as differences between jurisdictions in traffic density, terrain, level of economic competition and the like. Similarly, comparative surveys of drivers' opinions and reported behaviours are not necessarily a reliable means of evaluating the actual effectiveness of the duty and rest regulatory approach.

***'Managing driving hours does not succeed because driving is not the only factor, or even the main factor, contributing to driver fatigue'***

Some commentators, including researchers, sometimes say that the regulated hours approach is fundamentally flawed, because it focuses on controlling the amount of driving that a driver does rather than other factors that are considered to be more important contributors to fatigue. For example, some say that research now shows that what is most important is the amount and frequency of rest.

In fact, this research supports the NSW approach of regulating the amount and frequency of rest, as well as the amount and frequency of work (see, for example, the discussion on the national approach to the management of coach driver fatigue above). The NSW regime could just as accurately be called a 'rest hours' regime as a 'driving hours' regime.

NSW takes the view that it is **all** work that must be considered, not just the driving component. There is ample research to show that non-driving work is an important contributor to a driver fatigue, particularly where heavy physical work is involved. In the negotiations on the national approach, NSW argued strongly that non-driving work must be counted toward the limits as well as driving work. Although the NRTC's original proposals for both bus and truck driver hours took no account of non-driving work, the current versions do – indicating an acceptance of the validity of the NSW approach.

*Circadian rhythm*

A criticism of the duty and rest hours model is that none to date has taken account of circadian rhythms[2] and hence the differential crash risk according to time-of-day.

2 The natural 24 hour cycle of physiological activity.

It is true that the rules make no specific allowance for hours that are worked during the circadian lows[3]. However, this does not mean that the possible impact of circadian lows on driver fatigue were ignored in the formulation of the national regime. For example, one way the regimes may take the circadian rhythm into account is by keeping the hours of work shorter and the hours of rest longer than they may have otherwise.

It is significant that documentation on expert groups reviewing the US and Canadian hours of service rules shows that, with the benefit of the latest scientific research, they are gravitating toward the designs of the Australian national heavy vehicle regimes.

An expert panel recently reviewed options for future US hours-of-service rules (akin to the Australian hours of duty and rest regulations). The panel proposed to limit driving in the midnight to 6am band by setting a weekly limit of the number of hours that can be driven during this period. Again, this appears to be a simple solution, however, there are practical problems such as drivers being required to record and total the activity in their logbooks. The expert panel also acknowledged a more serious problem that may result in adverse effects on safety. This arises from the possibility of an increase in traffic flow at times other than midnight to 6am that may negate the effect of reduced fatigue related crashes or even result in an overall increase in crashes. Clearly, reduced use of the roads between midnight and 6am will result in a decrease in the overall capacity of the roads to move traffic.

Another criticism of the hours of duty and rest approach is that the law does not attempt to control what a driver does when off duty (other than not driving a heavy vehicle or performing other road transport work). It is argued that drivers may engage in highly fatiguing activity during rest periods and therefore the whole concept of regulating hours of activity is flawed. This issue is an important one, but it is not unique to the regulated hours approach—it is equally applicable to the FMP, for example. The RTA's view is that it is an occupational health and safety issue that drivers should report to work in a fit (unfatigued) state and operators should take reasonable steps to ensure that they are not putting fatigued drivers behind the wheel. The RTA encourages drivers and operators to take these precautions.

***'The hours of duty and rest approach will not succeed because it is too inflexible'***

This argument concerns the trade-off between road transport efficiency and road safety. For the most part, 'inflexible' when used in this context means that it doesn't allow the drivers to drive for long enough (or, conversely, it requires too much or too frequent rest). The national regime as implemented in NSW provides ample flexibility for operators while giving appropriate emphasis to road safety through limiting the amount of work and ensuring adequate rest.

As an alternative to the Standard regime, operators may join the Transitional Fatigue Management Scheme which provides greater flexibility in exchange for

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3 A point in the circadian rhythm when physiological activity is at its lowest level. This is between 12 midnight and 6:00 am, and to a lesser extent in the early afternoon.

greater assurance that drivers' fatigue is being properly managed. Ultimately, if its promise is realised in the evaluations, the Fatigue Management Program will provide an alternative for those operators who cannot accommodate their transport task within the Standard regime.

Some of the criticism that the regulated approach is too inflexible may simply reflect operator resistance to revising longstanding but unsatisfactory rostering and scheduling practices. Of course, there may be some limited circumstances where the inflexibility argument has some justification, such as where drivers find that the law calls for them to take a long rest break during the day when they may be unable to sleep. However, this is a problem that drivers and operators can manage through thoughtful planning of journeys.

***'The duty and rest hours model is outdated'***

It has been argued that because the model was originally devised long before we had the current scientific understanding of fatigue management, it must be worthless as a countermeasure. However, this does not put into dispute the effectiveness of the hours of duty and rest approach. On the contrary, the scientific literature and overseas experience demonstrates that the duty and rest regime is a design that takes into account most of the important factors in managing heavy vehicle road driver fatigue.

***The use of stimulant drugs by heavy vehicle drivers***

Some stimulant drugs are used by drivers who seek to enhance their performance – or at least to prevent it from deteriorating. It has been known for decades in road safety circles that substantial numbers of long distance truck drivers regularly use stimulant drugs to counteract the effects of fatigue.

As long ago as 1977, a Traffic Accident Research Unit questionnaire survey of long distance heavy vehicle drivers by Linklater found that 41% of the respondents admitted to using alerting drugs. In a 1990 questionnaire survey of long distance coach drivers, Raggatt found that just on half reported using stimulant drugs: however, only about 8% said that they did so 'quite often' or 'frequently'. More recent questionnaire surveys by Hensher and others in 1991 and Williamson and others in 1992 found that 46% and 32% respectively admitted to using alerting drugs at least sometimes.

A good picture has been established from the drivers themselves (who are often prepared to admit what they use), doctors (who supply prescriptions for some of the drugs), pharmacists (who supply some of the drugs), government health authorities (who attempt to regulate access to potentially hazardous drugs and who under certain special circumstances analyse blood samples from road users), the police (who find drivers and dealers in possession of drugs and who enforce the drug-driving legislation) and coronial inquiries.

The alerting drugs typically used by long distance heavy vehicle drivers are:

- **phentermine** trade name: Duromine – an appetite suppressant, legally available only on prescription

- **diethylpropion** trade name: Tenuate – an appetite suppressant, legally available only on prescription
- **caffeine** in coffee, cola drinks, NoDoz, etc.
- **amphetamine** illicit
- **methamphetamine** illicit
- **ephedrine** typically illicitly obtained, but used in some medications
- **pseudoephedrine** used in many medications
- **MDMA** ('ecstasy') illicit

Apart from caffeine, and pseudoephedrine, it is an offence in NSW to drive a vehicle while under the influence of any of these drugs.

Most of these drugs, used in moderation, are not likely to be seriously impairing. They may even improve performance (temporarily), especially among tired drivers. However, the drugs may introduce their own problems. Some dangers of alerting drug use are that:

- if used to excess they may cause a build-up in 'fatigue debt' which may lead to severe and sudden impairment when the effect of the drug dissipates
- extreme or long-term abuse may lead to hallucinations
- extreme or long-term abuse may lead to aggressive, risky driving behaviour
- extreme or long-term abuse may lead to personality disorders
- very high dosages of some stimulants can cause sudden and severe brain damage (a cerebrovascular accident) by elevating blood pressure
- illicitly obtained drugs may be of uncertain quality and potency and of course will not have proper instructions for safe dosage nor warnings about possibly hazardous interactions with other drugs.

It is most important to acknowledge, however, that fatigue can have some of these effects too.

Alcohol is used by long distance truck drivers to some extent. It does not figure very prominently in the crash statistics, however. One possible reason for the relatively low incidence of alcohol involvement is that long distance heavy vehicle drivers soon learn that alcohol magnifies the risk of falling asleep (because of its Central Nervous System depressant characteristic). Alcohol may occasionally be used by drivers to offset an excessive dose of stimulants.

Some drivers will inevitably engage in extreme abuse of alerting drugs. They may inadvertently or deliberately take very high doses, or they may take the drug over an extended period to allow them to drive for days without sleep. These extremes multiply the chances of experiencing some of the adverse reactions identified above.

It is clear that many long distance heavy vehicle drivers have found alerting drugs to be an effective solution to a pressing problem they face–the need to

stay awake and alert while they are driving in the face of long driving hours and chronic sleep deprivation. These are by-products of various pressures in the industry to drive unreasonably (and illegally) long hours, week after week, month after month. Many drivers are using alerting drugs to push themselves far beyond normal physiological limitations. It appears that there is a widely held belief in the industry that alerting drug use is necessary insurance against falling asleep at the wheel. A corollary to this is that many in the industry are aware that many truck crashes are caused by drivers falling asleep.

Drug use among truck drivers is a symptom of an underlying problem– excessive hours of duty and inadequate amount and quality of rest. Linklater's closing words on the subject are just as true today as they were in 1977:

> *'Stimulants are poor substitutes for sleep and their adverse effects include not only aggression and hallucination but also a dependency or even addiction which grows with increasing use. Thus, the safest advice for truck drivers is to avoid needing to use stimulants by driving for shorter periods and sleeping when tired'.*

Unfortunately, the current regulatory, economic and work-culture environment in the Australian long-distance road transport industry is such that many drivers stay behind the wheel (and work around the vehicle) for too long and take inadequate rest. Rather than sleeping when tired, many use stimulant drugs.

***Occupational Health and Safety***

The RTA is conscious of the need to ensure that employers and drivers realise that they not only need to conform to the duty and rest law, but also to relevant occupational health and safety law. Following is a section from the latest print of the RTA's *Heavy Vehicle Drivers Handbook.*

> *'The Occupational Health and Safety Act 1983 (OH&S) places obligations upon employers to ensure the health, safety and welfare of their employees in the workplace. This duty of care requires everyone in the workplace to be aware of potential hazards and take steps to prevent workplace accidents, injuries and illnesses, and the Act provides for severe penalties where it is established the employer has failed to meet that duty.*
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> *Any vehicle used by employees in the course of their employment is defined as their workplace, including heavy trucks or commercial buses. One aspect of provision of safe systems of work by employers would be compliance with the National Driving Hours Regulation, and this in turn would obligate the employee driver under that OH&S legislation, to co-operate in compliance with the National Driving Hours Regulation.*
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> *The National Driving Hours Regulation sets the limits for driving, other work and rest. These limits are a balance to fulfil the needs of efficient road transport, the management of driver fatigue and a workable system of compliance and enforcement. The limits do not guarantee that a driver will be free from fatigue in every circumstance.*

*It is important that employers and drivers adopt principles and practices to manage driver fatigue within those limits to ensure that they fulfil their duty of care.'*

This passage from the *Handbook* was approved by the NSW WorkCover Authority which administers the Occupational Health and Safety Act.

***NSW position on the pilot Fatigue Management Program***

A trial of a FMP (also known as a Fatigue Management Scheme) has been underway for several years under the auspices of Queensland Transport and the Australian Trucking Association (ATA) (until recently named the Road Transport Forum). In essence, FMP frees participating companies from compliance with prescriptive and complicated driving/work/rest limits, and log book requirements. Instead, participants have to demonstrate that they have implemented systems to properly manage driver fatigue.

It is envisaged that the FMP will eventually be upgraded from a trial so that it will be open to all operators to apply for entry. It is important to understand, however, that the FMP is not intended to replace the conventional regulatory approach. First, not all operators will want to meet or be capable of satisfying the requirements for entry. Second, if an operator consistently violates the scheme's requirements, the model calls for the operator to be suspended from the scheme; in that case, the conventional regulatory regime must be available as a fall-back.

Although NSW has been participating fully in the FMP pilot since its inception and one operator has been travelling through NSW under pilot FMP conditions since January 1996, NSW has been taking a cautious approach.

NSW has noticed an alarming aspect of the FMP approach is that some operators want to have extremely long and onerous working hours as a trade-off for meeting the conditions of entry. Some applications for entry to the FMP have had drivers working for as much as 18 hours in a 24 hour period. NSW has been careful to ensure that FMP does not become a device for allowing the road transport industry to increase hours of work and/or decrease rest beyond the limits under regulatory schemes, without adequate attention to preserving or improving road safety.

In mid-1996, when national agreement was reached on the limits under the Transitional Fatigue Management Scheme, NSW took the view that FMP operators should not exceed these limits. It appears that the FMP was seen by potential participants as a mechanism to avoid these limits – that is, the NSW approach appeared to have the effect of stopping new entrants to the FMP. Queensland Transport and the ATA pushed to allow operators to exceed the Transitional Fatigue Management Scheme limits as part of a formal trial.

In late-1997, the NSW Minister for Roads endorsed a package of safeguards and limits to allow the FMP pilot to proceed in NSW. The package was still based on the Transitional Fatigue Management Scheme, but allowed some additional flexibility. Eventually, negotiations between the RTA, Queensland Transport and the ATA in June 1998 led to acceptance of the NSW package.

Earlier this year, NSW approved revised FMP schedules, adjusted in line with the NSW package, submitted by a major road freight specialist and an owner-driver. Several new FMP submissions are under consideration for approval in NSW.

Some proponents of the Program appear to take the view that NSW is hampering the development of the FMP. In response, NSW response is moving as far and as quickly on the FMP as is consistent with road safety, in line with the general policy to not compromise on safety.

NSW is concerned that if vehicles under the FMP trial are to be allowed to operate in NSW, the results of the evaluation of the safety of the Program must be clear and definitive. Consistent with this position, the NSW Minister offered, as part of the NSW safety package, the purchase of sleep monitoring devices to be used to determine precisely how much sleep the drivers get, and an assessment of the quality of that sleep. Currently, the RTA is negotiating with the Federal Office of Road Safety to incorporate the sleep monitors into the evaluations they are conducting on the FMP drivers.

NSW will continue to participate in the FMP and assist in its evaluation.

***NSW position on the national bus duty and rest regime***

NSW was dissatisfied with the 1994 agreement because it did not include the concept of rest—a driver could potentially drive and perform other work for 24 days non-stop. Bus drivers often are called on to perform non-driving duties such as entertaining the passengers, issuing or collecting tickets, loading luggage or freight, and even cooking passengers' meals when on long distance tours.

NSW therefore introduced a modified version of the national bus regime, as described above. 'Driving' is defined to include non-driving work as well as actual driving. Mandatory periods of **rest** are also defined.

Another area where NSW was dissatisfied with the 1994 national agreement was in the size of the buses to be covered by the law. NSW duty and rest law had for many years covered vehicles equipped to seat more than 8 adults. The national agreement was that only vehicles seating 12 or more adults were to be included. This would have allowed small commercial buses, seating less than 12 passengers, to operate outside of the constraints of the limits. NSW viewed this as inappropriate and therefore preserved the threshold of seating for 8 adults.

These issues were the basis of NSW voting to disapprove the 1994 nation bus limits proposal.

As explained earlier, the 1998 NRTC proposal to align bus limits with standard truck limits was approved by a majority of Australian Transport Council Ministers, despite opposition by NSW. The primary reason for this opposition was because the proposal increased the hours of work and decreased the hours of rest compared with the version of the national regime already implemented in

NSW. When, in November 1998, NSW implemented the national fatigue law, small changes were made to the drafting to preserve the existing bus regime. Another small change allowed the bus size limit of 'more than 8 adults' to be preserved.

The NSW Minister for Roads has indicated to the NRTC that unless new scientific evidence comes to light to show unambiguously that the national bus regime is in fact as safe as or safer than the current NSW approach, NSW will not change its regime.

NSW has since commissioned the Centre for Sleep Research, University of Adelaide, led by Professor Drew Dawson, to comment on the relative safety of the current NSW bus regime and the new national bus regime from a driver fatigue viewpoint. His report indicates that the new national bus regime is less safe than the current NSW regime.

**Road – Safe-T-Cam**

Safe-T-Cam is an automated monitoring system based on digital camera technology that takes pictures of heavy vehicles (over 4.5 tonnes GVM), then locates and deciphers their number plates. This is possible through 21 Safe-T-Cam sites situated on the main transport routes throughout NSW. This is a non-real time system that identifies heavy vehicles that are travelling beyond prescribed hours or at excessive speeds. It also checks registration status.

Safe-T-Cam was developed under agreement between Telstra, CSIRO, and the NSW RTA. It is administered from the RTA's headquarters in Sydney.

If Safe-T-Cam detects an apparent non-conformance, a letter is sent to the operator of the apparently offending vehicle seeking an explanation of the incident and a statement of what actions will be taken to ensure that there is no recurrence. If the incidents continue, or no satisfactory response is received from the operator, the RTA may conduct an office audit, or review the operator's rights to operate vehicles in NSW.

**Road – driver fatigue as a general road safety problem in NSW**

Although the Inquiry's main emphasis is transport industry related fatigue, the Standing Committee might also be interested in driver fatigue as a road safety issue in NSW. Measures to counter fatigue amongst light vehicle drivers are relevant to heavy vehicle safety because many heavy vehicle crashes involve fatigued light vehicle drivers.

Driver fatigue is one of three major driver-related factors in serious crashes in this State; the other two are drink driving and speeding. Driver fatigue has been identified as a factor in about one in six fatal crashes in NSW.

NSW has conducted major driver fatigue public education campaigns since 1986 and considerable attention will continue to be given to this area as will be outlined later.

The road environment safety measures mentioned above in the context of trucks also apply to light vehicle drivers.

As with heavy vehicle drivers, the RTA aims to ensure that drivers are aware of suitable places to rest. Stopping opportunities include parks, cafes, service centres, fast food outlets and so on. Drivers should be able to know where there is a stopping opportunity, how long it will take to travel there, and what facilities will be available there. Rest areas for light vehicle drivers are generally separate from those for heavy vehicle drivers, reflecting their differing requirements. Among other initiatives, further improvement of signage is a current priority.

The RTA provides a roadside rest area system to complement other stopping opportunities. RTA constructs new rest areas and improves existing areas, to meet identified needs.

The driver fatigue program includes an excellent example of community involvement in road safety—the Driver Reviver program. Volunteers started it, and community service organisations now run it. The program runs at most holiday times. Volunteers provide service at rest stops for drivers on major travel routes, with refreshments provided. The volunteers also provide advice on driver fatigue. The program is supported by the RTA, the Police Service, local government, community service organisations and the food product manufacturer, Nestle Australia Ltd.

Many organisations outside the transport industry run vehicle fleets, many of them large. Since 1991, the RTA has had policies governing the safe use of its own fleet. The RTA has also promoted the adoption of similar policies by other organisations. Policies need to include aspects designed to manage driver fatigue.

**Rail**

The major rail operators in NSW are State Rail (passengers), FreightCorp and the National Rail Corporation. FreightCorp and National Rail Corporation are in direct competition with the heavy vehicle road transport operators.

All three organisations have undertaken work in the recent past at methods to better understand and manage fatigue. FreightCorp and National Rail Corporation have provided separate submissions to this Inquiry.

The rail operators, observing work in the US and findings of incident investigations, commissioned independent expert research into fatigue management.

The Centre for Sleep Research, University of Adelaide (Professor Dawson) was engaged to assist with the Independent Inquiry that was conducted into the Beresfield accident in October 1997. An analysis was undertaken on the level of fatigue attributable to the work schedule of the train crew responsible for the accident. This analysis concluded that both crew members would have been suffering significant work-related fatigue which would have resulted in not only impaired response times and reduced alertness, but also a heightened risk of involuntary sleep. The Inquiry into the accident noted that the level of fatigue was directly related to the structure of their shifts in the five days prior to the accident, not merely hours of work.

As a result of this work, major rail operators and regulators are becoming more aware of fatigue management in other countries and other modes. For example, in the USA, driving hours and fatigue management has been identified as a major issue for the transport industries and significant research has been conducted into related areas. The University of Denver conducted an extensive study, on behalf of the Association of American Railroads, into fatigue countermeasures. This research has prompted considerable debate regarding transport working hours. The US Class I Railroads are instigating further research into the issues.

Research findings from the National Train Crew Shiftwork & Workload Study (Centre for Sleep Research) have provided rail operators in NSW with various tools for fatigue management. These include: training and education, a fatigue modelling computer package and an extensive database containing driver fatigue data, work schedules and sleeping patterns.

The most important findings of that research relate to the idea that fatigue is not merely caused by an excessive number of work hours and insufficient rest. Rather, more recent evidence indicates that fatigue can result from the pattern and times of work and rest, and that cyclic fatigue management in rail yields safer outcomes.

## 5. CONCLUSION AND FUTURE DIRECTIONS

NSW recognises the importance of fatigue as a key issue in transport safety. The Inquiry is timely as it further highlights the varying approaches to the management of fatigue.

Fatigue management is an evolving field of research. Currently there is no single approach that is either fully accepted or proven as having application across all modes on a national basis. However, there is now greater awareness of some critical issues relating to fatigue, and these have strengthened the resolve of NSW to implement only those changes to regulations that would clearly enhance safety outcomes. NSW will not accept or adopt measures that may jeopardise safety.

This submission has focussed largely on fatigue management in the road transport industry.

The duty and rest hours model is the dominant means of controlling heavy vehicle driver fatigue and will remain for the foreseeable future. It is a tried and widely accepted method.

However it is possible that in a few years, national agreement will be reached on modifications to the current national scheme, based on experience with the current arrangements and new scientific knowledge of the management of driver fatigue. The FMP approach will be evaluated over the next one to two years and a decision will be made about whether it will move beyond its current trial stage to become available to any operator able to meet the entry and ongoing requirements. NSW will continue to take a cautious approach with the FMP until its ability to enhance safety outcomes safety is clearly proven. A further issue RTA will monitor closely is the amount of

administrative support required by the FMP. This may be telling in terms of its viability.

Also for the foreseeable future, NSW will retain its current bus driver hours of duty and rest and criterion for a bus to be included in the regime. This will remain the case unless clear cut scientific evidence comes to light which shows that permissible practices under the new national regime is as safe as or safer than the current NSW regime. A report recently commissioned by NSW from the University of South Australia's Centre for Sleep Research indicates that the national regime is less safe than the current NSW regime.

The RTA sees considerable scope for the use of driver fatigue modelling software to improve scheduling and rostering practices. There are already a number of packages of this kind available that incorporate expert scientific knowledge of the effects of all the relevant factors on drivers' fatigue levels. The University of South Australia's Centre for Sleep Research has developed such software. What is needed is for well-validated software of this type to be widely available for drivers and management to use for trip planning.

The RTA will continue to use Safe-T-Cam to monitor heavy vehicle movements across the State to guard against drivers failing to take rest breaks and to monitor the other side of the time-pressure coin, excessive speed.

There is considerable scope for the use of in-vehicle driver-specific monitoring devices to encourage voluntary compliance with duty and rest limits and to assist with enforcement against those offending. The national 'driving hours' law makes provision for such devices to be approved as an alternative to log book records, but no specification for such devices has been approved by Ministerial Council to date. There are considerable problems to surmount to design a specification that meets the multiplicity of requirements of such a device including tamper-proofing and ability to interrogate the electronic record at the roadside as well as at the depot.

Hazardous use of stimulant drugs use by heavy vehicle drivers will only be successfully tackled when the pressures that motivate excessive work and inadequate rest by drivers are reduced through other strategies discussed in this submission.

In regard to light vehicle drivers, public education campaigns in 1999-2000 will again address driver fatigue. These will encourage drivers to take proper rest breaks every 2 hours. The campaigns will also emphasise the need to plan trips to avoid fatigue.

Campaigns will focus strongly on regional NSW, because country residents are a large proportion of fatigued drivers in fatal crashes. The RTA will also deliver localised public education through its regions. In addition, there will also be specific rural road safety campaigns that will address driver fatigue as well as other major safety issues.

The rail sector's approach to managing fatigue is evolving, with research ongoing regarding the development of fatigue indexes and the linking of the issue to accreditation. NSW will be carefully monitoring performance, especially in relation to safety outcomes, of both its own industry and those operating in other jurisdictions – including overseas.

Of course, NSW will only implement those changes to road or rail fatigue management that clearly enhance safety outcomes.

The Department of Transport and Roads and Traffic Authority would be pleased to assist the Inquiry further if required.

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