

Guidelines For Managing Heavy Vehicle Driver **Fatigue**



These guidelines have been prepared to assist you to comply with the new road transport heavy vehicle driver fatigue laws that are likely to be implemented around Australia from 2008. They also promote compliance with general obligations to manage driver fatigue under current Occupational Health and Safety laws.

Following public consultation in the third quarter 2006 the draft guidelines and new laws were amended in response to feedback and the final documents were approved by Ministers of the Australian Transport Council (ATC) in February 2007.



Acknowledgments

The *Guidelines for Managing Heavy Vehicle Driver Fatigue* are based on the draft Fatigue Code of Practice for Heavy Vehicle Drivers prepared for the National Transport Commission (NTC) between 2003 and 2004. The draft Code of Practice was prepared through extensive consultation and the NTC thanks the many people and organisations from both government and non-government sectors for their efforts in progressing this important initiative.

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Disclaimer

This document describes the legal obligations of parties in general terms. The reader is advised to read this document in conjunction with the relevant legislation and, if necessary, take legal advice.

Guidelines for Managing Heavy Vehicle Driver Fatigue

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Key Milestones: Following public comment, the draft guidelines were revised as necessary, then considered by transport agencies in each State and Territory and the Commonwealth. This final version of these guidelines was approved by Australian transport ministers in February 2007.

Abstract: Heavy vehicle driver fatigue is a safety issue and is to be addressed by the national heavy vehicle driver fatigue reform which seeks to achieve consistency with current occupational health and safety legislation. The Guidelines provide guidance to all parties in the supply chain on the effective management of heavy vehicle driver fatigue

Purpose: Final report

Key words: Heavy vehicles, fatigue guidelines, fatigue, road safety, driver fatigue and fitness for duty

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Overview

Fatigue can affect a person's health, reduce performance and productivity, and can increase the chance of a workplace accident or road crash. Evidence also suggests that fatigued people are more likely to engage in risk-taking behaviour.

Importantly, fatigue may affect a person's judgment of his or her own state of fatigue. This means the effective management of fatigue should not be the responsibility of the driver alone. Employers, employees and all parties in the supply chain have a role in ensuring that any risks associated with fatigue are eliminated, minimised or controlled through the creation of an effective fatigue-management system. This can comprise a collation of associated fatigue management policies and procedures and may include a driver fatigue-management plan.

These guidelines are intended to assist drivers, employers, operators and schedulers, as well as users and customers of road transport to manage heavy vehicle driver fatigue through the creation of a fatigue-management system.

This will assist parties to meet their general duty to manage heavy vehicle driver fatigue under Occupational Health and Safety (OH&S) laws and the new road transport heavy vehicle driver fatigue laws. These new laws were developed by the National Transport Commission (NTC) in consultation with transport agencies and the road transport industry and unions.

Ministers of the Australian Transport Council (ATC) approved the development of the new laws in 2004. The final laws were approved by the ATC in February 2007, with implementation likely to occur from 2008.

The new laws will apply to trucks of greater than 12 tonnes gross vehicle mass and buses with 12 or more seats (9 seats in NSW) and will be implemented in New South Wales, Northern Territory, Queensland, South Australia, Tasmania and Victoria. This will enable a level of consistency with Western Australia, which already regulates fatigue management under OH&S law.

The new laws will include:

- a general duty in road transport law to manage fatigue, consistent with current OH&S laws;
- Chain of Responsibility provisions extending to parties in the supply chain whose actions, inactions or demands influence conduct on the road including drivers, operators, employers, directors and senior managers, loaders, schedulers, consignors and consignees (receivers), as well as agents of any of these parties;
- a much greater emphasis on opportunities for sleep and rest;
- strengthened record-keeping provisions, including replacement of log books with a new driver work diary;
- risk-based categorisation of offences and a revised range of sanctions;
- enhanced enforcement powers; and
- three fatigue-management options providing alternative drive, work and rest hour requirements with variable levels of flexibility in return for increased fatigue management and compliance responsibilities on operators and drivers.

These guidelines have been drafted to assist all parties to prepare for, and meet, the general duties to manage fatigue both under the new laws and in existing OH&S laws.

These guidelines explain the common factors that lead to fatigue and provide guidance for managing driver fatigue including some risk-management tools for use by different parties in the supply chain. Useful check lists for drivers to manage their fatigue are also provided and these can be used by other parties in the supply chain to meet their obligations.

Under existing OH&S laws, employers and employees are required to take all reasonably practicable steps to ensure safety in the workplace – including managing driver fatigue for employees and contractors. Similarly, the new laws will require all parties in the supply chain to take all 'reasonable steps' to ensure safety on the road by managing heavy vehicle driver fatigue.

Under this approach it will not be enough to just rely on the driver to comply with the law if there are other suitable steps that could be taken. Due to the many different modes of operation in the heavy vehicle industry and the many different factors that can influence how transport tasks are undertaken, it is very difficult to define 'reasonable steps' as it will depend on the options reasonably available to a particular business.

OH&S laws provide a framework for creating a fatigue-management system to assist all employers to meet their obligations for a safe workplace, and includes:

- implementation of a systematic process of hazard identification, risk assessment, risk control and review in the workplace;
- appropriate training, instruction and supervision, including induction and ongoing training for employees (including managers and contractors);
- consultation with employees and their OH&S representatives; and
- adequate record-keeping in relation to OH&S.

This framework is also suitable for use by all parties in the supply chain in order to meet their general duty to manage fatigue under the new laws.

While compliance with these guidelines is voluntary, all parties must take appropriate action to manage the risks of heavy vehicle driver fatigue in order to meet their obligations under both road transport and OH&S laws.

Businesses may use any reasonable method to manage driver fatigue, however, transport and OH&S regulators recommend that the suggestions for managing fatigue in these guidelines be followed by businesses unless better or equally effective methods of managing fatigue are used.

These guidelines may also be used by enforcement agencies and courts in determining whether reasonable steps have been taken to manage heavy vehicle driver fatigue under both the new laws and OH&S laws.

Further information will be available from transport agencies to assist various parties to understand their obligations to manage heavy vehicle driver fatigue. A range of Fact Sheets and Information Bulletins will also be available from the NTC website at www.ntc.gov.au

Industries are encouraged to develop more specific guidance through developing an Industry Codes of Practice tailored to the risks of that industry, in order to further promote compliance with fatigue and other safety-related laws.





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Part One | Introduction

1.1 PURPOSE OF THESE GUIDELINES

The effective management of fatigue relies on more than just the driver. As such, these guidelines have been prepared to provide guidance to employers, employees and all parties in the supply chain to manage heavy vehicle driver fatigue – and in so doing, to achieve compliance with their specific and general duties in the new road transport heavy vehicle driver fatigue laws and Occupational Health and Safety (OH&S) laws.

Fatigue is a major cause of crashes involving heavy vehicle drivers, and the impact on families and the community is significant.

The new road transport heavy vehicle driver fatigue laws introduce revised drive, work and rest hours and introduce a new 'Chain of Responsibility' in road transport law to require all parties in the supply chain and their agents take all reasonable steps to manage the fatigue of heavy vehicle drivers. These changes will complement the general duty that already exists under OH&S law on all employers, employees and contractors to ensure safety in the workplace by managing fatigue.

Merely adhering to prescribed drive, work and rest hours and completing work diaries/logbooks may not be enough to comply with the general duties under OH&S laws and the new laws. Good fatigue-management practices encompassing a fatigue-management system with a systematic risk-management approach is also essential.

The fatigue-management measures suggested in these guidelines provide a foundation for complying with the general duties, but the steps that need to be taken will depend on the nature of the specific business operations and the level of fatigue risk involved.

The measures may need to be modified in relation to specific circumstances, as these guidelines cannot anticipate all possible situations in which fatigue has to be managed. For example, what a short-haul operator may do to effectively address a certain type and level of risk may not be the most appropriate or effective course of action for a long-haul operator facing similar risks.

1.2 SCOPE OF THESE GUIDELINES

These guidelines provide important information and guidance on:

- fatigue – its effect, its causes, and ways to reduce it;
- creating a fatigue-management system to manage risks – steps and factors to consider;
- meeting Chain of Responsibility obligations under new heavy vehicle driver fatigue laws on all parties in the supply chain whose actions, inactions or demands influence conduct on the road including drivers, operators, prime contractors, employers, directors and senior managers, loaders, schedulers, consignors and consignees (receivers); and
- current obligations under OH&S laws.

These guidelines are designed to assist all parties in the supply chain, including their agents, to create a fatigue-management system to help them comply with their obligations to manage heavy vehicle driver fatigue when using trucks greater than 12 tonnes gross vehicle mass and buses with 12 or more seats (9 seats in NSW).

By managing fatigue you help to protect the safety of workers and all other road users – and ensure compliance with your obligations under road transport and OH&S laws. There are also other major productivity and efficiency benefits that may be achieved by effectively managing fatigue.

It is important to recognise that fatigue may arise because of the actions or inactions of anyone in the supply chain. Figure 1 illustrates some of the points at which actions along the chain can have 'knock-on' effects for other parties.

Further information will be available from transport agencies to assist various parties to understand their obligations to manage heavy vehicle driver fatigue. A range of Fact Sheets and Information Bulletins will also be available from the NTC website at www.ntc.gov.au

Industries are encouraged to develop more specific guidance through developing Industry Codes of Practice, tailored to the risks of that industry, in order to further promote compliance with fatigue and other safety-related laws.

Figure 1: Examples of weak links in the supply chain

Consignor Weak Links

Inflexible pick up and delivery times
Commercial pressures more important than fatigue consequences for specific trips

.....
Consignors need to be aware of their obligations not to make unreasonable or unrealistic demands on operators or drivers.

Operator Weak Links

Poor scheduling/rostering
Poor management practices
Inadequate training
Inappropriate vehicle for the job

.....
Operators need to plan the transport task to minimise fatigue through a regular risk-assessment process.

Driver Weak Links

Not following Fatigue Management Procedures or Trip Plans
Family demands
Use of alcohol and other drugs
Poor fitness for duty

.....
Drivers need to follow fatigue management and trip procedures that have been designed to reduce safety risk associated with fatigue.

Receiver Weak Links

Delays resulting from loading and unloading arrangements
Poor queuing of heavy vehicles
Lack of amenities for waiting drivers

.....
Receivers need to ensure their operations do not create additional fatigue risks by delaying drivers or setting unrealistic delivery times.

This diagram illustrates some examples of weak links in the Chain of Responsibility. All parties in the supply chain should review their role to ensure they are not the 'weak link'.

1.3 STATUS OF THESE GUIDELINES

These guidelines apply to all parties in the supply chain, including their agents, and provide guidance on how these parties can meet their general duty to manage fatigue under current OH&S laws and under the new road transport heavy vehicle driver fatigue laws.

These guidelines explain common hazards and set out a range of processes and practices for managing fatigue. These include methods of identifying, assessing and controlling fatigue risks, and steps to develop and maintain an effective fatigue-management system.

These processes and practices provide a basis for all parties in the supply chain to work out how they might manage fatigue in their business, although the exact measures will depend on their specific situation, as a 'one-size-fits-all' approach is not suitable. Parties should refer to these guidelines unless a better or equally effective method of minimising fatigue can be demonstrated.

While compliance with these guidelines is voluntary, all parties in the Chain of Responsibility must take all reasonable steps to manage the risks of driver fatigue.

These guidelines provide guidance to parties on how to meet their obligations under OH&S laws and the new road transport laws to take all reasonable steps. These guidelines may also be used to assist enforcement agencies and courts in determining whether OH&S and road transport duties have been satisfied.

Ministers of the Australian Transport Council (ATC) approved the new laws in February 2007 and these are likely to be implemented from 2008 in NSW, NT, QLD, SA, TAS and VIC. Western Australia already regulates driver fatigue management, consistent with many of the new laws, under OH&S law. While there may be some minor differences from State to State, anyone seeking to ascertain their legal position should contact their local transport agency for information.

By following these guidelines, parties can prepare for the new laws and in so doing, will meet their duties under OH&S and insurance laws as explained in Section 1.4.



1.4 LEGISLATION

1.4.1 New road transport heavy vehicle driver fatigue laws

The new road transport heavy vehicle driver fatigue laws have four key components outlined below.

- (i) A general duty on all parties in the supply chain under the Chain of Responsibility laws to take all reasonable steps to manage driver fatigue, complementing the general duty already in OH&S laws.
- (ii) Changes to driving hours place a greater emphasis on opportunities for sleep and rest, the 'body-clock' influences, and the cumulative nature of fatigue.

There are three components:

- a Standard Hours option – a default option prescribing minimum rest and maximum working hours;
- a Basic Fatigue Management option (BFM) – allowing additional working hours while imposing increased fatigue management and compliance responsibilities on operators; and
- an Advanced Fatigue Management option (AFM) – allowing more flexible working hours based on risk management, alternative compliance and quality assurance approaches. Operators will need to adhere to agreed standards and operating limits in return for more flexible working arrangements defined by the regulatory agency according to the operator's specific fatigue risks and fatigue-management system.

- (iii) Strengthened record-keeping provisions and replacing logbooks with a new driver work diary.
- (iv) Risk-based categorisation of offences, revised range of sanctions, and enforcement powers.

Contact your local road transport agency or your industry association for further details.

1.4.2 New obligations under the Chain of Responsibility

The Chain of Responsibility concept recognises that fatigue may happen because of the actions or inactions of members of the supply chain. These parties include drivers, operators, schedulers, loaders, unloaders, loading managers, prime contractors and consigners including any agents of these parties. Under this concept, parties share responsibility to manage driver fatigue and cooperate and consult with each other to address fatigue risks.

Under the Chain of Responsibility parties in the supply chain must take all reasonable steps to check:

- the fatigue-management option under which the driver is operating;
- the accreditation details of the operator, if applicable;
- that the driver is complying with relevant work, rest and speed limit requirements; and
- that the driver is not impaired, or likely to become impaired by fatigue.

In addition, if a driver breaches their work and rest requirements, under the Chain of Responsibility all other parties in the supply chain can also be held liable unless they can show that they have taken all reasonable steps to prevent the offence. It is irrelevant whether or not they knew about the offence or intended that it occur. Drivers will continue to be held liable even if another party in the supply chain is found guilty.

Under the general duty to manage driver fatigue, all parties must also ensure they do not breach the general duty by their demands, actions or inactions. This includes for example:

- drivers properly managing their work and rest and not driving if fatigued;
- ensuring trip schedules have sufficient flexibility and are reasonable;
- maintaining effective loading practices; and
- ensuring that commercial requirements do not require a driver to break the law (e.g. driving excessive hours or speeding to meet a deadline).

The new law also makes it illegal for any person to make a reckless or negligent demand that they know, or reasonably ought to know, will lead to breach of the law.

Many influences on schedules and rosters flow from the decisions and requirements of other parties in the supply chain. It is unlikely to be enough to simply require in contracts that operators and drivers meet their legal obligations in order to prove that all reasonable steps have been taken where other steps are reasonably available.

All parties in the supply chain should work together to manage fatigue. Parties may adopt practices such as:

- implementing ongoing consultative mechanisms to identify and effectively control fatigue risks;
- developing clear contractual obligations that do not contribute to fatigue;
- providing training and implementing procedures to empower drivers to refuse unreasonable requests; and
- implementing ongoing operational reviews to identify practices that contribute to fatigue, develop improved practices and ensure that relevant parties are advised if existing practices are contributing to fatigue, such as:
 - inflexible delivery times and unloading times;
 - poor management of truck queues; and
 - inadequate equipment and/or resources to load/unload trucks.



1.4.3 Existing obligations under Occupational Health and Safety Law

OH&S laws in all Australian jurisdictions place a general duty on employers to provide a workplace and systems of work that are safe and healthy. OH&S laws require employers to:

- 1 implement a systematic process of hazard identification, risk assessment, risk control and review in all systems of work (references to “health” includes risks to psychological health)
- 2 monitor the health of employees
- 3 ensure that employees, including managers and contractors, receive appropriate training, instruction and supervision, including induction and ongoing training
- 4 obtain appropriate information to manage risks
- 5 consult with employees whose work is directly affected by decisions or changes in the workplace, and their OH&S representatives
- 6 implement and review control measures over time
- 7 keep adequate records in relation to OH&S.

Under these duties, parties must take all reasonably practicable steps to manage fatigue.

Maintaining a safe workplace is a shared responsibility of employers and employees. For example, heavy vehicle drivers have a legal duty to take reasonable care for their safety at work and cooperate with their employers in meeting their obligations. Employers owe a duty to protect the safety of all employees, including contractors.

These guidelines represent part of the ‘state of knowledge’ in OH&S law for managing heavy vehicle driver fatigue – assisting parties to comply with their obligations to manage fatigue under OH&S laws as well as road transport laws.

1.4.4 Other obligations and benefits

Effectively managing heavy vehicle driver fatigue may also provide other benefits in addition to compliance with road transport and OH&S laws, including:

- minimising the risk of negligence claims, for example, resulting from unintentional safety breaches that cause a vehicle crash;
- satisfying insurance obligations, for example, the obligation under the *Insurance Contracts Act 1984* that requires disclosure to the insurer of all reasonably foreseeable risks;
- productivity gains, for example, through minimising avoidable losses that may result from driver fatigue; and
- generating commercial opportunities, for example, by showing the ability to manage compliance, thereby reducing exposure of customers and suppliers under the Chain of Responsibility.



Part Two | Understanding Fatigue

Fatigue is an acute or ongoing state of tiredness that affects employee performance, safety and health, and requires rest or sleep for recovery.

Key risks resulting in fatigue are poor understanding about the factors leading to fatigue including poor communication and consultation between parties in the supply chain. Managing fatigue is the shared responsibility of all parties in the supply chain and requires commitment from all parties to manage the risks. This requires genuine and open consultation and communication and increased understanding by all parties.

This section (Part 2) provides guidance on what constitutes fatigue, common contributing factors, and details on methods that may be used to control fatigue. This material should be consulted when using the risk-management approach described in Part 3.

2.1 EFFECTS OF FATIGUE

Fatigue is more than falling asleep at the wheel. Fatigue describes the feeling of being tired, drained or exhausted. It causes poor judgment, impaired coordination and slower reactions, and impacts on how well you work. It builds up, leading to a progressive loss of alertness that ultimately ends in sleep and is a major contributing factor in many road crashes. The effects of fatigue include:

- **Loss of Alertness** – when you respond more slowly to things as they arise. Loss of alertness is an early sign of fatigue and may result in less efficient vehicle control (e.g. changing gears, finding it hard to drive inside the lanes, or finding it hard to maintain a constant speed).
- **Poor Judgment** – before drowsiness sets in, fatigue affects the ability to think clearly, which is vital when making safety-related decisions and judgments. Someone who is very fatigued may not realise how fatigued they really are. As a result, fatigued people are unaware that they are not functioning as well or as safely as they would if they were not fatigued.

- **Drowsy Driving** – drowsiness means feeling sleepy, but not actually being asleep. When drowsy, a driver may actually drift in and out of sleep occasionally without knowing it (micro sleep). Drivers have been studied when drowsy and found to be asleep for 3 to 5 seconds – or as long as 15 seconds. Travelling at 100 kilometres per hour can mean 100-300 metres of travel and plenty of time to run off the road.
- **Falling Asleep at the Wheel** – this happens in a number of crashes, typically very severe single vehicle crashes where there has been no attempt by the driver to control the vehicle. Often the driver was completely unaware of events before the crash.
- **Poor Memory** – being fatigued will also affect your memory. For example, drivers may have travelled a significant distance without knowing it. This is directly related to loss of alertness.
- **Mood Change** – being fatigued can also make you irritable, agitated, aggressive and poor company. You start to overreact to things including those that wouldn't normally upset you.

Driving is a complex mental and physical task requiring sustained levels of concentration and skill to maintain maximum performance. No driver can afford to be fatigued nor can anyone else afford a driver to be fatigued.

2.2 CAUSES OF FATIGUE

2.2.1 Time of day – body-clock factors

The body has natural rhythms that are repeated approximately every 24 hours – this is called the ‘body clock’ or the circadian rhythm. The body clock regulates sleeping patterns, body temperature, hormone levels, digestion and many other functions, and helps conserve resources. When the body clock is out of ‘synch’, effects such as jet lag result.

The body clock programs a person to sleep at night and stay awake during the day. Body temperature drops during the night resulting in sleepiness and rises during the day to assist in feeling alert. At night the digestive system slows (because individuals are less likely to be eating) and hormone production rises to repair the body.

The body clock is controlled partly by light and dark and partly by what activities are undertaken. When working normally from 9 am to 5 pm, things that happen as a result of your body clock include:

- morning light tells the body clock to be more alert;
- after lunch (siesta time) the body clock will turn alertness down for a couple of hours;
- alertness is heightened in the late afternoon and early evening;
- darkness at night tells the body clock to turn alertness down again to get ready to sleep; and
- after midnight, body temperature and alertness decrease to their lowest level.

2.2.2 Sleep factors

The optimum amount of required sleep varies. The average daily sleep required for an adult generally varies between 6 to 8 hours. People who have less sleep than necessary will incur a sleep debt. This ‘sleep debt’ builds up for each day you don’t have enough sleep.

The best time for good quality sleep is in the early morning hours (midnight to 6 am). Unless a driver is on night shift, it is best to try to sleep during this period. It is important that all parties in the supply chain recognise that drivers working irregular hours or shift work are routinely exposed to conditions that reduce the amount and quality of their sleep.

It is not necessary to repay every hour of sleep debt immediately. However, if a sleep debt is not properly managed, driving performance could be as poor as if the legal alcohol limit was exceeded.

Sleep debt is like a bank loan – you have to pay it back.

Every day that sleep is insufficient, a driver is more fatigued and therefore more dangerous. Fatigue will also build if sleep is lost over consecutive days as the effects of fatigue are cumulative.

It is not possible to just sleep and drive, and drive and sleep. Sleep time should not be shortened to fit in daily living activities such as washing, eating and domestic tasks. Drivers and schedulers must take this into account and include adequate time for sleep as well as other domestic and recreational activities.

Time is needed both for sleep and other domestic activities.

Short-term measures such as taking naps can help compensate for lack of sleep but remember that naps are not a substitute for continuous sleep and that after a nap it can take some time to wake-up completely and get over the sleep inertia.

2.2.3 Health factors

There are some general health tips and lifestyle choices that will ensure safer driving – with many other benefits. However, the following are a number of health factors that can prevent a driver from getting a good long sleep.

Although most people over 50 years snore at night sometimes, for a few it is a serious problem. Sleep apnoea occurs when the windpipe collapses during sleep so that too little air reaches the lungs, resulting in frequent waking due to oxygen starvation. The condition is treatable.

A further problem is falling asleep during the day with no obvious sleep problem at night. This condition is called narcolepsy, and can be treated.



Some people also suffer from restlessness at night that keeps them awake. They find their legs keep moving or twitching. This too is treatable.

Some illnesses such as diabetes, if not controlled, can also result in fatigue. Again, this can be treated.

Being overweight or obese is not usually regarded as an illness. However, obesity can cause sleep problems and strongly contributes to sleep-disordered breathing (apnoea). Also, being overweight does cause other problems including medical sleep problems.

Tiredness and drowsiness after sufficient sleep may indicate a medical problem. It is recommended you seek medical advice.

Ongoing fatigue and stress can also contribute to serious long-term health effects such as cardiovascular disease. It makes sense to have regular health checks so these illnesses and medical problems can be diagnosed before they make drivers unsafe, unable to do their job or worse.

- Effect of alcohol, other drugs and stimulants

The effect of alcohol on people is very similar to fatigue. After consuming alcohol the only way to reduce its effect is to allow time. Large amounts of alcohol before bedtime will reduce the quality and amount of sleep a person can have.

Many drivers smoke cigarettes in the belief that it helps keep them alert, however this increases the risk of many diseases such as heart disease and lung problems.

There is a temptation to take stimulant drugs to manage fatigue but this is not recommended. These drugs have many side effects resulting in increased fatigue and can cause long-term effects on health including problems such as high blood pressure and other cardiac problems.

Caffeine and other related stimulants can have the effect of perking up an individual for a short amount of time. If you have caffeine all the time your body adapts to it so it has less effect. Whether it is coffee, tea, chocolate, cola drinks or perhaps something stronger, caffeine is a stimulant. But too much can be a problem.

Too much caffeine can stop a person from sleeping when they want to, as well as reducing the quality of their sleep. It can also cause digestive, cardiac and other problems, including headaches. Caffeine dehydrates the body, which is a serious problem when driving. And, if you are very fatigued, caffeine won't help you – only sleep will.

- Benefit of diet and exercise

Good health and fitness will assist in addressing issues associated with fatigue.

Exercise and a good diet will help drivers to be fit for work, assisting in alertness and better sleep. Exercising for 30 minutes a day, even in three 10 minute periods, can significantly improve health and reduce weight. Just walking or jogging instead of using the car for short trips is beneficial.

During a break from driving, walking is good exercise. As a driver, the health of your back is vital to your livelihood, so look after it by stretching, flexing regularly and lifting properly.

Unlike some other types of work, driving requires drivers to be alert and attentive all of the time. This depends on the work being done but also on what drivers have done on the days prior to driving. Drivers need to be ready to drive/work at all times when at work. This is commonly called 'fitness for duty'. Drivers need to be aware of the impact some types of activities may have on their fitness for duty such as a second job, recreational activities, sport, insufficient sleep and any stress-related situation.

Employers and all parties in the supply chain also have duties to ensure that drivers are fit for work – and drivers have a similar obligation.

A healthy diet and regular exercise will reduce weight and improve your fitness. Nutritionists recommend the following:

- breads and cereals: (4-5 servings daily) such as rice, pasta, bread and cereals;
- vegetables and fruit: (at least 4-5 servings daily) of fresh, frozen or canned fruits and vegetables;
- meat and meat substitutes: (1-2 servings daily) of lean beef, lamb, veal, chicken or pork (grilled rather than fried)
- milk or dairy products: (3-4 servings daily) of milk, cheese or yoghurt;
- fats: butter and margarine: (maximum of 1 tablespoon daily) of butter or table margarine; and
- fish: (preferably 1 serving daily) minimum of 2 servings per week.

The quantity of food consumed can also affect sleep. It is bad practice to eat a heavy meal before going to bed. Plan to eat no less than 3 hours before going to sleep.

Further detailed guidance on Fitness for Duty matters including sleep disorders can be found in *Assessing Fitness to Drive*, Austroads 2003 available at www.ntc.gov.au.



2.2.4 Work factors

In addition to those matters that can be controlled by a driver, actions or inactions by other parties in the supply chain can contribute to driver fatigue. In a recent survey of drivers¹, the key factors that contribute to fatigue are:

- long or excessive hours;
- unreasonable transit times or deadlines; and
- inflexible time slots, problematic loading and distribution.


Long working hours have been cited in driver surveys and in research as a major fatigue risk. While some drivers still drive hours in excess of legal limits, fatigue can still be a problem even within the legal limits, and the risk of long working hours must be properly managed.

Table 1: Check list of warning signs

Most people who have a sleep debt don't realise they are tired, so drowsiness can creep up on them. It is time to pull over for a nap or a break if any of the following is experienced.

- | | |
|------|--|
| ---> | trouble keeping your head up |
| ---> | wandering, disconnected thoughts – day dreaming |
| ---> | eyes close for a moment or go out of focus |
| ---> | eyelids droop |
| ---> | inability to stop yawning |
| ---> | inability to remember driving the last few kilometres |
| ---> | drifting over the centre line or onto the gravel at the side of the road |
| ---> | not noticing signs and hazards early enough |
| ---> | missing your exit |
| ---> | missing gear changes |
| ---> | starting to see things that are not there |
| ---> | approaching corners too fast |
| ---> | poor steering or braking too late |
| ---> | changing speed without noticing |

1: SA WorkCover, Fitness for Work in the SA Heavy Vehicle Transport Industry, November 2004.



Unreasonable schedules increase the risk of fatigue by failing to allow drivers to take necessary rest breaks or failing to provide for reasonably expected delays. Actions of heavy vehicle customers, such as those regarding delivery deadlines, can place unreasonable demands on drivers and increase driver fatigue. In turn, delays in loading or unloading further increase fatigue risk.

Unsafe and unsuitable workplace conditions are a contributing factor to fatigue. Good vehicle design and depot facilities will assist drivers in reducing the effects of fatigue. Vehicles must comply with Australian Design Rules covering such things as ventilation, seating suspension and sleeper berths. Another factor that can contribute to driver fatigue is the time necessary for a driver to travel to and from work.

It is important that all factors are identified and that parties in the supply chain are reminded of their responsibilities.

2.2.5 Two-up driving

Two-up driving, when managed properly, can be an effective form of driving in long-haul operations. This is because a driver is able to rest when fatigued while the vehicle is still moving.

The safety of two-up driving depends though on whether a driver is able to work well with their driving partner and gain restorative rest.

Issues to consider when scheduling two-up driving include:

- drivers need to be capable of sleeping in a moving vehicle;
- drivers must be confident in the ability of the co-driver or the quality of rest may be lower;
- the sleeper berth needs to be compliant with the standard in the new laws;
- whether a sleeper berth requires better insulation and if it should be fitted with independent air-conditioning;
- allowing drivers to volunteer for two-up driving with the capacity to select their driving partner;
- drivers should share the driving to best fit each other's body clock e.g. is particularly important at night;
- if possible try not to have drivers participate in loading/unloading if they are undertaking ultra long trips; and
- match new two-up drivers with a more experienced driver for a probationary period involving a number of trips as a team. The experienced driver should provide feedback on the new drivers' skills, attitude and 'behaviours' and if the new driver is able to sleep well in a moving vehicle.

2.3 WAYS TO REDUCE FATIGUE

2.3.1 Listen to and plan around the body clock

No matter whether adequate sleep is achieved or not, there are high points of alertness and low points when one feels drowsy, or wants to sleep. Consider the body clock in scheduling breaks for rest or naps. Also explain to families and friends how important sleep is and avoid parties, etc. if occurring at times when you need sleep.

Employers must provide the opportunity for necessary sleep and ensure that drivers get off the road when feeling drowsy. Drivers should ensure they have enough sleep to cancel the debt and don't drive if feeling drowsy.

Most passenger and freight schedules will hinge on pick up and delivery times and dates. All parties in the supply chain equally share the responsibility for trip planning. Plans should include time for sleep, food and rest, including time for naps if needed and take into account possible delays. The driver must have the flexibility to adjust the schedule if circumstances change.

The likelihood of falling asleep when the body clock is set to 'sleep' is very much higher than at other times in the day and the associated risks must be considered by employers and other parties in the supply chain when setting schedules and agreeing to contracts. The risk also increases as sleep debt increases, so schedules need to take this into account.

Develop and maintain a regular routine that provides for sleep, meals, daily living and time off. This will improve sleep quality and alertness when awake.

Learn, plan and use counter-measures to better manage driver fatigue:

- set schedules so that wherever possible, drivers can take a power nap if starting to feel tired;
- take a nap before the start of a shift to help prevent fatigue;
- use rest breaks to maximise the quality of rest;
- combine short rest breaks with exercise;
- drink plenty of water and eat sufficient fresh food including fruit and vegetables; and
- even with adequate sleep, a monotonous trip can make us less alert – mental games and habits can be developed to help keep alert.

If early signs of drowsiness are ignored, micro sleeps may be experienced, resulting in loss of control of the vehicle leading to the vehicle running off the road or into an oncoming vehicle. Once fatigue sets in, the best counter-measure is sleep.

2.3.2 Obtaining good sleep and taking naps

The actual amount of sleep needed by each person varies and this needs to be considered by drivers and all members of the supply chain. Similarly, how to have a good sleep is an important consideration. Avoid stimulants – they are not the answer to fatigue as they only delay sleep.

To obtain good quality sleep and manage the risks associated with the quality of sleep...

- at home, a motel or driver quarters:
 - find the best room temperature to fall asleep (it will probably be between 18 & 22°C);
 - turn down your phone volume (or turn it off); wear earplugs; ask the family to be quiet;
 - if using a motel room, select one away from the road;
 - hang extra thick curtains; wear eye shades; and
 - have sufficient sleep before commencing driving/working.
- on the road:
 - find a quiet truck bay and use dark curtains and liners to keep out light;
 - make sure your sleeping berth is well-ventilated;
 - take eye shades and earplugs with you;
 - turn off your mobile phone and radios;
 - take time to change out of your work clothes as you would at home; and
 - drink plenty of water.

If you are having trouble sleeping seek medical advice and remember regular health checks are important. It is important that drivers are aware of any sleep disorder or other medical condition that could affect their ability to drive safely.

The best time to sleep is when you feel the onset of tiredness.

Short breaks are an important means of addressing driver fatigue and in addition to the short breaks specified in the new laws; additional breaks should also be taken when necessary. Naps should not be seen as a weakness as it is good fatigue management. Naps can be very effective in providing short-term relief, but they are only a temporary measure and not a substitute for continuous sleep. When driving, remember to:

- be prepared to take breaks when most needed;
- avoid extreme temperature and take breaks where relief from temperature is available;
- use short breaks to stretch and walk; and
- try and maintain some simple exercise routines between driving shifts.

Naps are a short-term answer to fatigue if it occurs, so those in the supply chain should plan the work and rest so that naps are not usually needed. If fatigue does occur however, a nap can help decrease fatigue.

The effectiveness of naps will depend on the time of day they are taken and how fatigued the driver is. Naps are most effective if taken before a driver is fatigued. However, if experiencing overwhelming sleepiness, stop and obtain adequate sleep as soon as practical. Naps should only be taken as a last resort in these circumstances. Consider the following points when napping;

- a minimum of a 10-minute up to 30-minute nap should be adequate to reduce the effects of fatigue;
- if a longer nap is needed, allow up to 80-90 minutes so that waking should occur during a shallower sleep;
- consider taking a nap before a long drive to help prevent fatigue developing during the drive;

- plan and schedule naps and ideally take advantage of facilities to coincide with natural drowsiness in the afternoon (2-4 pm) or during the hours of midnight to dawn if a night driver;
- sleep occurring when we are designed to be awake (e.g. late morning and the middle of the day) tends to be shorter and more fragmented and therefore less restorative;
- after naps taken during normal sleep hours, particularly the period between midnight and around 6 am, it can be hard to get going again. It may be better to have a nap slightly earlier in the evening; and
- build in a 'wake-up' period to get going again.

For more information on naps you can download the *Guidelines for Using Napping to Prevent Commercial Vehicle Driver Fatigue* (2006) from the NTC website at www.ntc.gov.au.



2.3.3 Managing fatigue at work

It is important that all parties in the supply chain cooperate to better manage driver fatigue. Simply adhering to prescribed driving hours and relying on work diaries/logbooks may not be enough to address the risks of driver fatigue. Good fatigue-management practice is also essential.

Part 2 of these guidelines highlights many of the common factors that contribute to driver fatigue. Part 3 sets out a suggested risk-management process, consistent with OH&S requirements, which can be used by all parties in the supply chain to manage the risk of their actions or inactions contributing to driver fatigue.

Managing fatigue requires a systematic fatigue-management system. Central to this is a risk-management approach and this is discussed in Part 3. Also necessary are associated policies

and procedures to manage the risks associated with that business and that engenders an organisational commitment to the ongoing management of fatigue. An example of this might include a system involving use of Driver Fatigue Management Plans (DFMP).

See table 2, page 13

Share this information with your family so they can provide support and understand the importance of adequate sleep.

If in doubt – seek medical advice.

Factors to consider when developing policies and procedures include:

- methods to generate a culture of understanding and management of fatigue including good communication and consultation;
- the type of work to be performed and body-clock risks that can contribute to fatigue;
- scheduling and rostering drivers, including length of shift and allowing for necessary rest and recovery during and between shifts;
- availability of rest areas and amenities for drivers;
- consultation on fatigue risks with drivers, their representatives, and other parties in the supply chain;
- reviewing loading and unloading times and delays at pick up and delivery points;
- establishing drivers' capacity and fitness for work;
- contingency planning including providing for reasonably expected delays;
- training and education in fatigue management;
- managing incidents and near misses; and
- establishing and maintaining appropriate workplace conditions and audits.

Some or all of the policies and procedures may exist already in other corporate documents. Fitness for work policies and procedures may be in human resource management manuals and relevant information on training may be in general safety induction manuals. It is not necessary to create documents especially for a fatigue management system, providing that issues can be identified and referenced within existing policies and procedures.

Some policies and procedures that are used for fatigue management, such as policies on drugs and alcohol in the workplace or hazard and incident reporting procedures, may apply to a wide range of circumstances within the one organisation. Where relevant policies and procedures exist, which have been developed in consultation with employees and OH&S representatives, they could be used for fatigue management.

Table 2: Check list for managing fatigue

Here are some tips to help keep alert at the wheel:

Planning:

- > Plan trips to provide adequate time for sleep, rest and food, taking into account appropriate places to stop
- > Plan rosters so there is enough time to adjust to a change between day and night shift
- > Talk to the family well in advance of departure time so that sufficient rest is achieved
- > Be realistic about how much sleep is needed to be a safe driver and make sure it is acquired
- > Start the journey without sleep debt
- > Understand the body clock and be aware of low point of alertness
- > Share this information with the family so they can provide support and understand the importance of adequate sleep
- > Make sure there are no health problems. If in doubt – seek medical advice.

On the road:

- > Take regular power naps (20 to 30 minutes)
- > Keep the cab at a comfortable temperature, but not too warm
- > Get fresh air into the cab. Smoke and stale air can contribute to drowsiness
- > Eat sensibly and exercise regularly
- > Drink plenty of water and never drink alcohol when working
- > Use caffeine only when needed – it is only a short-term solution to mild fatigue if you don't usually have a lot of caffeine
- > Learn to recognise the signs of sleepiness and pull over as soon as possible for a short nap
- > Do not take drugs to manage fatigue.

To help manage boredom:

- > Listen to music, talkback radio or talking books or chat on the CB radio
- > Play mental games, such as calculating distances
- > Take regular breaks to stretch, walk and check the vehicle
- > Learn to recognise the signs of sleepiness and pull over as soon as possible for a short nap.



Table 3: Guidance on schedules and rosters to minimise fatigue
Here are some tips on designing schedules and rosters to manage driver fatigue:

1	Give a driver sufficient notice to prepare for a working period of 14 hours or more, or if this is not practical, ensure the driver's fitness for duty is assessed.
2	A solo driver needs the opportunity for at least 7 hours of continuous sleep in a 24 hour period.
3	Minimise irregular or unfamiliar work rosters.
4	Operate flexible schedules to allow for Short Break Time or discretionary sleep.
5	Minimise very early departures to give drivers the maximum opportunity to sleep in preparation for the trip.
6	When drivers return from leave, minimise night-time schedules and rosters to give drivers time to adapt to working long hours, especially at night.
7	Give sufficient notice of a change between night and day shift, with enough time to change sleep patterns.

Part Three

Managing Fatigue — Risk-Management Approach

A suggested process to create a fatigue-management system that can be used by all parties in the supply chain to eliminate, minimise or control the risk of their contribution to driver fatigue, includes the following steps:

1

Risk Identification

2

Risk Assessment

3

Risk Control

4

Monitor and Review

No two operations are the same. Every member of the supply chain should assess the specific factors resulting from their operations and use the risk-management process to manage all resulting risks. Keep records of this process as evidence of the steps that have been considered and taken to manage the risks of driver fatigue. Parties in the supply chain should consult with other parties in the supply chain, and in particular with operators and drivers, in order to control risks of driver fatigue.

A detailed approach to risk management is already required under OH&S law and is the key to effectively managing the risks of heavy vehicle driver fatigue. This section (Part 3) provides guidance on applying the risk-management process. Further guidance is provided in Part 4 in highlighting questions to assist all parties in the supply chain identify, assess and develop controls in order to manage fatigue risks.

For more information on how to use the risk-management approach to meet workplace health and safety obligations, please refer to Australian Standard ASNZ4360 on Risk Management.

STEP ONE: RISK IDENTIFICATION

The first step is to identify factors that may contribute to driver fatigue. Employers and all other parties in the supply chain should develop a list and keep records of all the factors in their business that have the potential to contribute to driver fatigue.

There are many ways to identify workplace factors that contribute to fatigue, including:

- inspecting workplace rosters and work-time records;
- consulting with drivers – ask them about schedules and rosters. Also, ask about any problems they have encountered, or any near misses or unreported injuries;
- consulting with workplace OH&S representatives and committees;
- reviewing loading and unloading times and delays at pick up and delivery points;
- conducting safety audits;
- analysing injury and incident reports;
- undertaking driver surveys;
- reviewing loading and unloading times and delays at pick up and delivery points;
- conducting safety audits;
- keeping records and details of all workplace incidences and near misses;
- recording frequency – how often the situation occurs; and
- recording number of people exposed and duration.

Records should be kept of this process and of decisions made. This information can be useful as a starting point when undertaking regular reviews of risks in the future.



Factors to be considered include:

- length of shifts worked – the length of shifts worked can contribute to fatigue;
- previous hours and days worked – the effects of fatigue are cumulative (drivers may have sleep debt due to the previous hours and days worked, which can contribute to fatigue);
- type of work performed – pay attention to the level of physical and/or mental effort required;
- time of the day when the work is being performed – remember that disrupting the body clock can cause fatigue and also impact on task performance;
- delays loading or unloading at consignors or consignees;
- roster design & scheduling – allow for rest and recovery between shifts;
- work premises – layout and condition;
- work environment – vibration, noise, climate/temperature, etc;
- human factors – capability, skill, experience, age, physical fitness and health status; and
- driver's fitness for duty.

STEP TWO: RISK ASSESSMENT

The second step involves assessing each of the risks identified. That is, assessing the likelihood of the event occurring (e.g. two long shifts, two days in a row) and the expected consequences (loss of alertness). For each of the risks you have identified, assess and record:

- the likelihood of the incident occurring, bearing in mind the existing control measures;
- the consequences of an incident occurring, bearing in mind the existing control measures; and
- the combination of the likelihood and consequences to estimate the rate of risk.

Part 2 of these guidelines provides guidance about common fatigue hazards. Further guidance may be gained by all members of the supply chain by considering the various questions contained in Part 4. This further explains the nature of risks and contains examples of questions that further highlight various risks and consequences.

Example of a Risk Assessment Matrix

Instructions:

- A** Determine the most likely fatigue consequence of an incident (e.g. falling asleep, drowsiness)
- B** Select the phrase that best describes the likelihood of the event occurring (e.g. highly likely that a driver will work three night shifts in a row)
- C** Line up the consequence and likelihood to determine the risk score

All risks should be managed as soon as reasonably practicable. However, if this is not possible, a plan should be put in place to manage the risks as soon as reasonably possible. In this case, greatest priority should be given to risks in the dark blue zone that indicate high-level risks requiring priority action, the mid blue zone indicates medium-level risks that may be given lower priority, and the white zone indicates low-level risks. Remember, however, that this is just a guide.

When assessing the risks, refer to Table 5 that may help you determine what type of activities increase fatigue risks the most.

Records should be kept of this process including details of the assessment process undertaken, who is allocated responsibility to manage each risk and the relevant timeliness for action. Where necessary, this will demonstrate that matters are progressed appropriately and in a timely and efficient manner according to the order of priority.

Step 3 (page 19) provides further guidance on the types of controls that should be used to control risks.

Table 4. Risk Assessment Matrix

MOST LIKELY FATIGUE CONSEQUENCE	LIKELIHOOD			
	Definitely will occur	Likely to occur	Unlikely to occur	Won't occur
High levels of fatigue (e.g. drowsiness, micro sleeps)				
Medium levels of fatigue (e.g. loss of alertness, slowed reactions)				
Low levels of fatigue (e.g. slight tiredness)				
No fatigue				

Table 5. Risk Assessment Guide

Here are some tips on some risks and the seriousness they might have in your business

Lower Fatigue Risk	Some Fatigue Risk	Higher Fatigue Risk
<p>Regular short shifts with little night work</p> <p>Schedules build in time for typical delays</p> <p>All trips avoid driving at low alertness periods (i.e. night, early morning)</p> <p>Rosters ensure at least a week's notice to prepare for upcoming schedules</p> <p>Short breaks are taken frequently and from early in the shift</p> <p>Drivers are able to sleep at night in own bed</p> <p>Drivers almost always get 7-8 hours continuous sleep per night</p>	<p>Regular shifts</p> <p>Schedules allow some flexibility for delays</p> <p>Some trips during low alertness periods</p> <p>Rosters allow a few days notice for upcoming schedules</p> <p>Short breaks taken only at end of allowed maximum driving period</p> <p>Drivers sometimes sleep at night and usually in own bed, or always at night but in vehicle/motel</p> <p>Drivers sometimes get 7-8 hours sleep</p>	<p>Unpredictable or long shifts with lots of night work</p> <p>Schedules do not allow any time for delays</p> <p>Most trips during low alertness periods</p> <p>Notice for schedule changes do not allow an opportunity for good quality rest</p> <p>Short breaks not always taken</p> <p>Drivers rarely sleep at night and usually in vehicle</p> <p>Drivers rarely get 7-8 hours sleep</p>

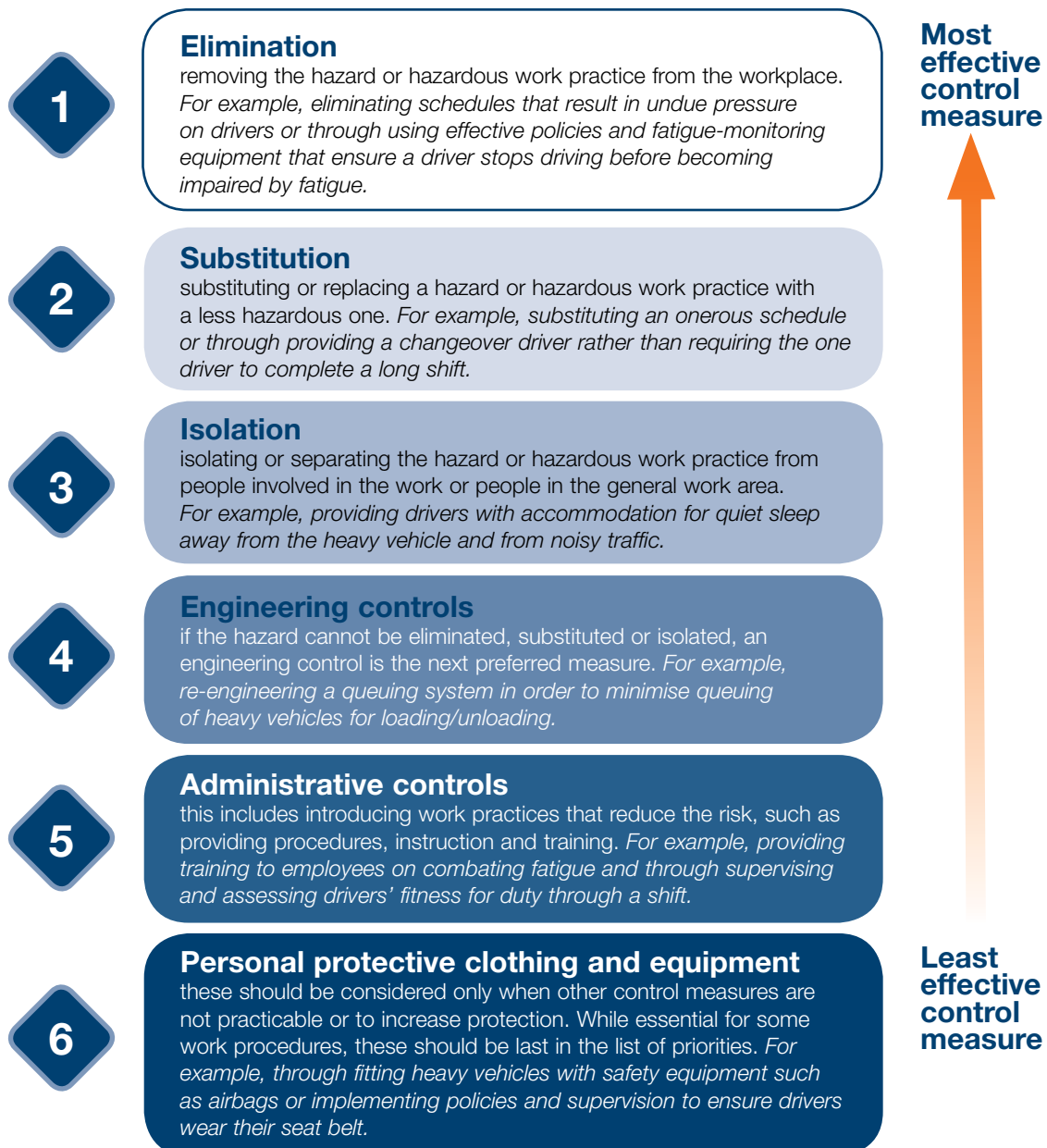
STEP THREE: RISK CONTROL

The third step involves deciding on control measures to manage exposure to each fatigue risk identified and implementing the controls in a timely manner. Employers and other parties in the supply chain should implement control measures that adequately control exposure to fatigue in their business.

The hierarchy of control outlined in Table 6 provides a method of assessing control measures. Under the hierarchy, the ideal solution when managing fatigue is to completely eliminate

factors contributing to fatigue. If this is not reasonably possible there are a number of control options that may be used alone, or in combination, to reduce the risk so far as is reasonably practicable. Measures should be supported by policies, procedures, information and training. Because fatigue is caused by a combination of factors, the most effective way to manage it is by using a combination of risk-control measures.

Table 6: Order of control measures to eliminate or reduce the risk of injury or harm (in some instances a combination of control measures may be appropriate).



Control measures

It is important that once controls are developed they are implemented in a timely manner. This includes keeping records of decisions and of who is responsible for implementing the measures and, where appropriate, setting milestones for progress and providing necessary resources in order to complete the task. Further guidance on developing appropriate controls is provided below by referring to the questions contained in Part 4.

Control measures need to be specific to the risks identified and to the particular business. The types of measures may include:

- developing work procedures and/or policies;
- communicating control measures;
- providing training and instruction; and
- supervision.

Table 6 shows the order of priority in seeking to control risk. By following the order of controls, parties will be able to identify what types of controls are best suited to a specific risk. For example, if eliminating a risk is not reasonably possible, consider substituting the risk instead. A lower order control should only be used if the higher order control is not reasonably practicable. When assessing the type of control measure, consider options for their applicability and the interaction between combinations of hazard factors that could influence the level of risk. The order of controls can be used by any party in the supply chain and examples are given to highlight controls that various parties can use for their business.

Specific industries or industry sectors may also wish to consider developing their own tailored Industry Codes of Practice as a further guide to effectively managing driver fatigue.



Developing work policies and procedures

Work policies and procedures need to be developed and implemented to ensure that all reasonable fatigue control measures are in place and effective. This might include developing a driver fatigue-management plan as part of the overall fatigue-management system. A fatigue-management system can consist of a collation of policies and procedures to manage driver fatigue and may include a Driver Fatigue Management Plan (DFMP).

Effective fatigue-control measures should define and communicate responsibilities. For example, employers and persons conducting a business are responsible for providing a roster system that provides staff with sufficient opportunity for rest and recovery. It is a good idea to document and keep records of procedures and the reasons behind them, detailing when and how they must be implemented and who is accountable.

Communicating control measures

Employers and persons conducting a business should consult with drivers about the control measures, both in their development and when they are to be implemented. It is important to clearly communicate that the control measures are being introduced to effectively manage fatigue. When communicating control measures to drivers, it is important to remember that drivers (through their workplace health and safety representatives) are entitled to be consulted about any changes in the workplace that affect, or could affect, their safety.

Consultation may be achieved through the workplace OH&S representatives and should include:

- the possible health and safety impact of changes;
- the benefits and problems associated with the changes;
- measures needed to eliminate or control any adverse impact on health and safety;
- procedures for drivers to notify supervisors of any impairment or potential impairment that may place any person at risk before starting work; and
- clear definition and communication of responsibilities.



Providing training and instruction

Employers and persons conducting a business should provide training and instruction on fatigue for drivers, supervisors, schedulers and any other person whose actions may affect road safety. Specific training requirements are included in the requirements for participation in both the Basic and Advanced Fatigue Management schemes. Minimum information should include:

- common causes of fatigue including shift work, extended working hours, roster patterns, demands placed on drivers and delays in loading and unloading;
- tips to identify signs of fatigue;
- potential health and safety impacts of fatigue;
- how drivers are responsible for making appropriate use of their rest days, and for ensuring they are fit for duty; and
- policies and procedures.

Consideration should be given to the appropriate information and training to be provided to members of the chain, including all drivers. Drivers attending training outside their normal shift should be considered at work and rosters adjusted accordingly.

Supervision

Employers and persons conducting a business should also provide adequate supervision to ensure that control measures are being used correctly. This can include activities such as monitoring fatigue levels of drivers or ensuring compliance with safety procedures. Induction is also relevant to new employees or when new activities are undertaken. For drivers working alone, employers should consider providing a means of communication and a procedure for regular contact.

STEP FOUR: MONITORING AND REVIEW

The fourth step is to monitor and review the effectiveness of fatigue control measures, and revise if necessary. When working through this step it is useful for members of the supply chain to consider:

- have the chosen control measures been implemented as planned?
- are the chosen control measures working?
- are there any new problems that may, for example, have been caused by the control measures?



When answering these questions, employers and persons conducting a business can:

- consult with drivers, supervisors, OH&S representatives, OH&S officers, and safety committees;
- consult with other parties in the supply chain;
- measure exposure to fatigue – are drivers still getting fatigued?; and
- monitor incident reports and assess the likelihood for fatigue contributing to incidents.

If any new hazards have been identified, it is necessary to refer back to Step One and identify and manage risks as part of the ongoing risk-management process. Employers and persons conducting a business should ensure that there is a process for ongoing monitoring and evaluation of workplace fatigue using the risk-management process as this process should be regularly undertaken and reviewed. Once again, records should be kept of this process including steps undertaken and decisions reached.

Part Four

Developing A Road Transport Risk-Management System

IMPLEMENTING FATIGUE RISK MANAGEMENT SYSTEMS

This attachment has been prepared for the information of all parties in the supply chain including:

- road transport operators;
- owner/drivers;
- employee drivers;
- other influencing parties (for example, consignors, consignees and loaders); and
- agents of any of the above parties.

It is very important to note that given the diversity of road transport operations, it is very difficult to prescribe exactly what each duty holder should be doing in terms of fatigue counter-measures. That is, what may be effective for one party may be ineffective for another.

Instead of prescribing exactly what parties should do to address these common fatigue risk factors, questions or prompts that parties should consider are provided against a number of common fatigue risks to assist you in undertaking the risk-management process and formulation of your fatigue-management plan.

The questions provided will have varying degrees of relevance according to individual operating circumstances. Further, the questions should be considered against a background of whether you, or the business, do them 'adequately'.

Remember, it is not necessary to address every risk, but all reasonable risks that are appropriate to your circumstance.

Key points

- All personnel in your business who have an influence on driver fatigue levels should read these guidelines to gain an understanding of fatigue and risk-management theory.
- Using the questions below as prompts, systematically analyse your operations through genuine consultation and communication and begin to work out where the fatigue risks are, how serious they are, and what's the best way to address them. You should accurately record your discussions and steps that you take.
- Begin a process of monitoring and reviewing what you do.



Attachment 1: Questions to consider when developing a Fatigue Management System

Examples of fatigue risk factors	Why is this factor a fatigue risk?	Questions that should be considered by parties to assist when determining what specific controls are appropriate and when/how should they be implemented
<p>Poor understanding, communication, commitment, consultation and review</p>	<ul style="list-style-type: none"> • Can lead to ineffective fatigue-management practices and systems 	<p>Heavy vehicle operators, including owner/drivers – does my business:</p> <ul style="list-style-type: none"> • understand each party's legal obligations in relation to fatigue management? (see Part One) • understand the causes of fatigue and how/where my work systems may create fatigue risks? (see Part Two) • understand how the risk-management process can be used as a means to implement effective fatigue management? (see Part Three) • adequately communicate with all relevant parties in the supply chain including drivers of the importance of effective fatigue management and engender commitment from all parties to improved day-to-day practices? • keep abreast of ongoing fatigue and risk-management information and developments from sources such as industry associations, transport or OH&S agencies? • demonstrate a commitment to effective fatigue management that is supported by management and employees/contractors and backed up by appropriate training resources? • review written and/or verbal instructions from customers to ensure that they are not leading to breaches of fatigue regulations and/or creating unnecessary risks? • assess which customers are likely to promote effective fatigue management and give preference to them? • continually review its risk-management and fatigue management processes and plans to assess their effectiveness via mechanisms such as accreditation and auditing processes? <p>Consignors, consignees or loaders – does my business:</p> <ul style="list-style-type: none"> • understand each party's legal obligations to manage driver fatigue? (see Part One) • understand the causes of fatigue and how/where my work systems may create fatigue risks? (see Part Two) • understand how the risk-management process can be used as a means to implement effective fatigue management? (see Part Three) • keep abreast of ongoing fatigue and risk-management information and developments from sources such as industry associations, transport or OH&S agencies? • adequately consult with all supply chain parties to plan and implement effective fatigue-management practices? • provide adequate training to all relevant staff? • continually review the effectiveness of its risk-management and fatigue-management plans and processes? <p>Employee drivers – do I:</p> <ul style="list-style-type: none"> • understand my legal obligations in relation to fatigue management? (see Part One) • understand the factors that lead to fatigue? (see Part Two) • assist my employer to implement effective fatigue risk-management systems? (see Part Three) • comply with the company's other related policies such as drugs, alcohol and medications? • inform my employer or supervisor when I believe I may be affected by fatigue?

Examples of Fatigue Risk Factors	Why is this factor a fatigue risk?	Questions that should be considered by parties to assist when determining what specific controls are appropriate and when/how should they be implemented
Long work shifts	<ul style="list-style-type: none"> Long shifts without adequate breaks can contribute to fatigue – especially if there is a high amount of physical and/or mental exhaustion Fatigue-related incidents are more likely in circadian low points (e.g. midnight to 6 am) The effects of fatigue are cumulative so fatigue is more likely to occur towards the end of a shift and the end of the working week Sleep at night is the most effective way of fixing accumulated sleep debt. 	<p>Heavy vehicle operators – does my business:</p> <ul style="list-style-type: none"> provide adequate information to drivers on short-term measures such as naps and breaks and do all parties understand the limitations of these temporary measures? <p>Employee drivers, or owner/drivers – do I:</p> <ul style="list-style-type: none"> take the necessary breaks as legally obliged and seek to minimise fatigue by sleeping, where possible, in dark, quiet and comfortable places and preferably at night? plan shifts and lifestyle generally so that the highest quality breaks and rest periods can be utilised? utilise check lists such as those in Part Two to keep alert and detect fatigue warning signs? inform relatives and friends of work schedules and sleep times to avoid unwanted disruptions? minimise disruptions? (e.g. use an answering machine or turn phone down?) develop ways of ‘unwinding’ after a long shift? (e.g. take a walk or watch some television?) use breaks to stretch and exercise? <p>Consignors, consignees or loaders – does my business:</p> <ul style="list-style-type: none"> adequately assist drivers in the latter stages of their shift by, where possible, introducing controls and procedures? consider making allowances in the latter half of shifts or working periods to address the possible heightened fatigue levels of drivers?
Cumulation of a high number of previous hours and days worked without adequate sleep	<ul style="list-style-type: none"> ‘Sleep debt’ accumulated over a period of time can contribute to fatigue Broken sleep and day sleep may not be as restorative as night time sleep and must be considered. 	<p>Heavy vehicle operators – does my business:</p> <ul style="list-style-type: none"> have adequate flexibility in its work systems and processes to respond to busy times and/or unexpected delays? consider how work systems such as work flexibility could be implemented? consider how controls and procedures to assist staff performing hazardous work during high fatigue periods could be implemented? monitor records such as logbooks, driver diaries, pay slips and output from electronic monitoring devices and other records to confirm that drivers are compliant with regulatory limits? maintain an awareness of drivers having other employment responsibilities such as a second job? <p>Employee drivers, or owner/drivers – do I:</p> <ul style="list-style-type: none"> take active steps to assess my fatigue levels and respond accordingly? <p>Consignors, consignees or loaders – does my business:</p> <ul style="list-style-type: none"> check its work systems to ensure that drivers are compliant with regulatory limits?

Examples of Fatigue Risk Factors	Why is this factor a fatigue risk?	Questions that should be considered by parties to assist when determining what specific controls are appropriate and when/how should they be implemented
High level of exertion	<ul style="list-style-type: none"> • Work that is mentally and/or physically demanding can contribute to fatigue • Fatigue can be exacerbated if work completed at circadian low points (e.g. midnight to 6 am). 	<p>Heavy vehicle operators – does my business:</p> <ul style="list-style-type: none"> • design and redesign work practices so that levels of physical and/or mental exhaustion are taken into account? <p>Employee drivers, or owner/drivers – do I:</p> <ul style="list-style-type: none"> • understand that high levels of exertion can exacerbate fatigue and make the necessary allowances? • ensure I use my rest times to recuperate as much as possible? <p>Consignors, consignees or loaders – does my business:</p> <ul style="list-style-type: none"> • check its work systems to ensure that they minimise the amount of highly mental and/or physical work that is undertaken by drivers? • communicate to drivers and operators before the task is undertaken of the likely demands involved?
Time of the day when the work is being performed	<ul style="list-style-type: none"> • Work performed at circadian low points (e.g. midnight to 6 am) can result in fatigue. 	<p>Heavy vehicle operators – does my business:</p> <ul style="list-style-type: none"> • design schedules to be as flexible as possible? • provide adequate opportunities to recover from night-time work? <p>Employee drivers, or owner/drivers – do I:</p> <ul style="list-style-type: none"> • understand that working at different times of the day and night can exacerbate fatigue levels? • take adequate steps to minimise these risks? <p>Consignors, consignees or loaders – does my business:</p> <ul style="list-style-type: none"> • provide systems that promote effective and efficient queuing and loading/unloading of heavy vehicles? • provide rest facilities for drivers?
Delays loading or unloading at consignors and consignees	<ul style="list-style-type: none"> • Delays can extend the length of shifts and can be physically and/or mentally exhausting which can contribute to sleep debt and fatigue. 	<p>Heavy vehicle operators – does my business:</p> <ul style="list-style-type: none"> • promote flexibility in its work systems to be able to reschedule pick up and delivery times where possible? • promote flexibility in its work systems to be able to replace a fatigued driver prior to driving hours being in excess of regulations, where possible? • promote a work system to allow drivers to report delays and incidents that in turn allows the investigation of fatigue problems? • consider how contractual obligations with consignors and consignees and other influencing parties could be utilised to encourage effective and efficient loading and unloading practices? <p>Employee drivers, or owner/drivers – do I:</p> <ul style="list-style-type: none"> • have the ability to amend schedules? • communicate with 'base' to amend schedules? • balance longer working time with longer breaks or a longer sleep in the subsequent period? • record delays and all fatigue-related problems so they can be addressed?

Examples of Fatigue Risk Factors	Why is this factor a fatigue risk?	Questions that should be considered by parties to assist when determining what specific controls are appropriate and when/how should they be implemented
		<p>Consignors, consignees or loaders – does my business:</p> <ul style="list-style-type: none"> • promote flexibility in its work systems to be able to reschedule pick up and delivery times and/or have greater loading and unloading capacity during busy times or following general delays? • promote a work system to allow all in the supply chain to report incidents? • promote a work system to allow the reporting and investigation of fatigue problems? • promote a work system to allow the implementation, monitoring and review of effective fatigue-management practices and policies?
<p>Poor roster design and scheduling</p>	<ul style="list-style-type: none"> • Rosters and schedules that do not allow for rest and recovery between and during shifts can contribute to fatigue • Swapping from day to night shifts and vice versa without adequate transition assistance can contribute to fatigue • Drivers may feel fatigued during the latter half of their working week (or working period) • Drivers may feel fatigued at the start of a working week (or working period). 	<p>Heavy vehicle operators – does my business:</p> <ul style="list-style-type: none"> • assess fitness for duty of drivers? • take into account the effect of likely non-driving activities (e.g. bus driver attending to passenger needs) and delays when calculating maximum work hours permitted? • take into account drivers' commuting hours as a factor that may contribute to fatigue levels? • plan trips to allow as much sleep at night when operational requirements permit this? • consult with individual drivers where work will require regular and significant changes to work periods? • build in time to assist drivers adjust when returning from a break or from day to night (or night to day) driving where possible? • schedule trips to allow for appropriate rest breaks? • schedule trips allowing also for the impact of likely delays? • have contingencies in place? <p>Employee drivers, or owner/drivers – do I:</p> <ul style="list-style-type: none"> • report any fatigue problems within or between schedules so they can be fixed? • maintain logbooks, driver diaries or other paperwork required for fatigue purposes? • provide input to improve schedules and rosters? • advise when not fit for work? • advise any conditions that may affect my ability to perform tasks legally and safely? <p>Consignors, consignees or loaders – does my business:</p> <ul style="list-style-type: none"> • check contracts to ensure no undue pressure? • seek other forms of assurance that systems are not placing undue demands on parties? • audit its processes regularly to ensure safe work systems? • manage the flow-on effects to operators and drivers if changes to work systems occur? • when awarding work, consider factors other than financial?

Examples of Fatigue Risk Factors	Why is this factor a fatigue risk?	Questions that should be considered by parties to assist when determining what specific controls are appropriate and when/how should they be implemented
Poor work environment	<ul style="list-style-type: none"> Excessive vibration, noise, climate/temperature, etc. can contribute to mental and/or physical exertion that can contribute to fatigue Work premises – poor layout and condition Poor ergonomics and poor facilities can contribute to mental and/or physical exertion that can contribute to fatigue. 	<p>Heavy vehicle operators – does my business:</p> <ul style="list-style-type: none"> provide amenities to assist drivers take high-quality rest (possibly including lunch rooms, sleeping accommodation, sleeper cabs, etc.) that are appropriate to the operation? monitor the quality of amenities? maintain vehicles to meet roadworthiness standards and fatigue-related standards (e.g. ADR 42 on sleeper berths and 42.18 on ventilation)? consider cabin comfort, including vibration characteristics, particularly of vehicles used in long-haul operations? make scheduling allowances for adverse weather and road conditions (e.g. heat, snow, roads under repair, etc.)? <p>Employee driver, or owner/driver – do I:</p> <ul style="list-style-type: none"> advise managers where the work premises may be poor in terms of encouraging high-quality rest? keep the cab well-ventilated and at a comfortable temperature? adhere to equipment maintenance schedules? report equipment faults? undertake timely and accurate pre-trip, during trip and post-trip inspections? <p>Consignor, consignee or loader – does my business:</p> <ul style="list-style-type: none"> provide amenities to assist drivers take high-quality rest? monitor the quality of amenities? design loading/unloading and queuing areas and monitor practices to minimise working hours as much as reasonably practicable? accommodation for full vehicle combinations i.e. B-double, B-triple, etc.? provide a working environment that will not exacerbate a driver's fatigue levels? <p>Other parties/governments – do we:</p> <ul style="list-style-type: none"> provide appropriately maintained roads, rest areas and traffic systems? provide amenities to assist drivers take appropriate rest? monitor the quality of amenities?

Examples of Fatigue Risk Factors	Why is this factor a fatigue risk?	Questions that should be considered by parties to assist when determining what specific controls are appropriate and when/how should they be implemented
Inadequate/Poor human factors	<ul style="list-style-type: none"> Capability, skill, experience, age, physical fitness and health status all influence a driver's ability to manage his or her own fatigue 	<p>Heavy vehicle operators – does my business:</p> <ul style="list-style-type: none"> encourage regular medical assessments? assist drivers undertake their medical assessments when required and are the driver's medical certificates current? assess the ability of drivers to safely perform the tasks requested of them? <p>Employee driver, or owner/driver – do I:</p> <ul style="list-style-type: none"> disclose any matter that may affect my fitness for duty? take active steps to ensure that I am fit for duty? (see Part One) <p>Consignor, consignee or loader – does my business:</p> <ul style="list-style-type: none"> observe the wellbeing of drivers and actively intervene if behaviour and appearance of the driver is not normal?





Common terms used in these Guidelines

Minimum continuous break in a 24 hour period for a solo driver	<i>7 hours in the Standard Hours option, 7 hour continuous break or 8 hours in 2 parts (is limited) in the Basic Fatigue Management option, 6 hour continuous break or 8 hours in 2 parts (subject to conditions).</i>
Night sleep	<i>At least seven hours continuous rest between 10pm and 8am.</i>
Shift	<i>The period of driving and work time between two periods of continuous sleep opportunity. A shift is deemed to have started at the end of the last continuous sleep opportunity and finishes at the beginning of the next continuous sleep opportunity.</i>
Short rest break	<i>Any rest break that is 15 minutes or more in duration, but less than seven hours. Means time at work provided for rest and meals after a continuous period of active work and does not include non-driving work time or time not working. Short rest is recorded in minimum 15 minute periods (i.e. any non-work less than 15 minutes does not count towards rest, any period of non-work of 15 minutes but less than 30 minutes is counted as 15 minutes rest etc.).</i>
Night work	<i>Any driving or work undertaken between midnight and 6 am.</i>
Hazard	<i>A source or situation with a potential to cause injury, illness or disease.</i>
Hazard identification	<i>Process of recognising that a hazard exists.</i>
Risk	<i>The likelihood of an injury, illness or disease occurring and the severity of any injury, illness or disease that results from exposure to a hazard.</i>
Risk assessment	<i>Process of working out how big a risk is present and what risk factors are causing the problem.</i>
Risk control	<i>The process of applying appropriate prevention measures to eliminate or minimise any risks.</i>
Circadian rhythm	<i>Circadian rhythms or the body clock regulates physiological and behavioural functions on a 24 hour basis. Sleep and wakefulness are programmed and sleepiness is greatest between midnight to 6 a.m. and to a lesser extent between 2-4 p.m.</i>
ADR	<i>Australian Design Rules.</i>
Fatigue	<i>Fatigue can be described as a progressive loss of alertness that ultimately ends in sleep</i>
Sleep debt	<i>Failure to have a normal sleep results in sleep debt that accumulates and can only be paid back by undisturbed, restorative sleep.</i>
Schedule	<i>The pattern of driving and work covering one or more trips. For operators with rostered drivers a schedule might operate over a week or a month. For less regular or predictable situations a schedule may refer to a single trip.</i>



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