$10 including GST

heavy vehicle driver's handbook

Government of South Australia
Department of Planning, Transport and Infrastructure

For further information visit **www.mylicence.sa.gov.au**
Department of Planning, Transport and Infrastructure

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heavy vehicle driver's handbook

The information contained within this handbook has been prepared to help you become better informed about laws that apply to drivers of heavy vehicles[1]. It should not be taken as a precise interpretation of the law. It does not set out to be complete or a substitute for the legislation made by parliament. Recent changes in laws may not be reflected in this publication.

Information on South Australian legislation may be obtained from **www.legislation.sa.gov.au**

Other publications relevant to heavy vehicle drivers produced by the department include:

- The Driver's Handbook
- Trainee guide for Light and Medium Rigid vehicles (LR & MR) Competency Based Training and Assessment
- Trainee guide for Heavy Rigid (HR) and Heavy Combination (HC) Competency Based Training and Assessment
- Trainee guide for the Multi-Combination course Competency Based Training and Assessment

1 **A heavy vehicle is a vehicle with a Gross Vehicle Mass (GVM) over 4.5 tonnes and includes buses over 4.5 tonnes.**

contents

contents

how to use this handbook 1

This handbook is divided into sections to make it easy to find what you need to know to operate a heavy vehicle safely on the road. At the end of each section is a summary of the information.

You will need to refer to this handbook in conjunction with The Driver's Handbook if you are taking a driving test to get your heavy vehicle driver's licence, or if you are undertaking a Heavy Vehicle Competency Based Training and Assessment (HVCBT&A) course. It is also helpful for experienced drivers who want to check current rules and practice. To find information on a specific topic, go to the Index at the back of the handbook where subjects are listed with page numbers. You will also find a glossary of terms in the back to explain the meaning of words used in the heavy vehicle industry.

What's in this guide?

SECTION 2: LICENCES

This section explains the licensing system for drivers of heavy vehicles including the skills and qualifications you need to drive a particular vehicle.

SECTION 3: DRIVER MANAGEMENT

This section explains the need for heavy vehicle drivers to be aware of their fitness, and their responsibilities, in particular the laws on alcohol, drugs, fatigue, record keeping and seatbelts.

SECTION 4: SAFE DRIVING

This section explains important low risk driving behaviours such as observation, speed management, road positioning and crash avoidance space.

SECTION 5: HEAVY VEHICLE ROAD RULES

This section explains the road rules that govern heavy vehicles and road users.

SECTION 6: KNOWING THE VEHICLE

This section explains the requirements for keeping your vehicle roadworthy covering most vehicle components and functions such as checking, testing, maintenance and inspections.

CHECKLIST ICON ☑

Checklists are provided to guide you through procedures and general checks. This icon will help you locate them.

SECTION 7: VEHICLE DIMENSIONS AND LOADING

This section explains the dimensions of vehicles and allowable loads; ways to secure and distribute loads, types of loads such as dangerous goods and vehicle types including B-doubles and road trains.

SECTION 8: PENALTIES

This section explains the penalties for traffic offences and offences directly related to driving heavy vehicles.

SECTION 9: INDUSTRY GLOSSARY

This setion provides a list of industry terms and their meaning.

SECTION 10: INDEX

SECTION 11: USEFUL CONTACTS

licences

2

As a driver who holds a heavy vehicle licence, you have additional obligations and responsibilities to the people you share the road with.

A heavy vehicle driver's licence carries special responsibilities. Like your private car driver's licence, it is a 'contract' or agreement between you as a driver and the rest of society. You must also meet certain conditions and rules that apply only to drivers of heavy vehicles. This handbook contains information that will guide you towards the skills and knowledge you need to hold a heavy vehicle driver's licence.

For more information on your car driver's licence, refer to The Driver's Handbook.

WAYS TO GET A HEAVY VEHICLE DRIVER LICENCE

- Undertake a Heavy Vehicle Competency Based Training and Assessment (HVCBT&A) course with an authorised examiner.
- Undertake a Vehicle On Road Test (VORT) with an authorised examiner.

Both the CBT&A and the VORT test are conducted in loaded vehicles.

The CBT&A Multi-Combination (MC) course and Heavy Combination (HC) Training in-Lieu of Experience courses (TiLE) are only run by the Department of Planning, Transport and Infrastructure (DPTI) approved RTO's and authorised examiners. All other heavy vehicle licence classes are gained by either the CBT&A course or the VORT and undertaken with an authorised examiner.

For more information on both these licence schemes, see pages 21 and 22 in this section.

For more information on the TiLE course see page 17.

MEDICAL ASSESSMENT

South Australia adopts the national medical standards for private and commercial drivers contained in the Assessing Fitness to Drive, Commercial and Private Vehicle Drivers booklet, published by AUSTROADS.

If you are applying for or hold a Light Rigid (LR) licence you must meet the private medical standards.

If you are applying for or hold a Medium Rigid (MR) or higher class of licence you must meet the commercial medical standards.

If your existing medical condition changes, or you get a medical condition that may affect your driving, you must contact the Department of Planning, Transport and Infrastructure.

PROOF OF IDENTITY AND SOUTH AUSTRALIAN RESIDENTIAL ADDRESS

You may need to provide evidence of your identity and South Australian residential address when you apply for a heavy vehicle driver's licence.

For more information about evidence of identity documents, visit www.sa.gov.au

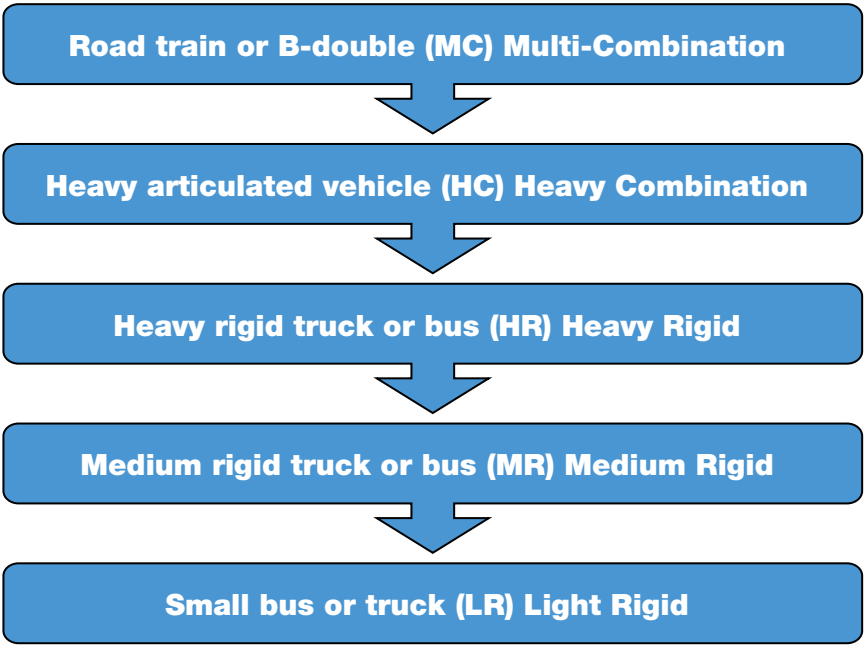
Licence classes

The following diagram shows the classes of heavy vehicle licences.

You may drive any class of vehicle appearing below your licence category on the diagram.

At the highest level is an MC licence which allows you to drive all classes of vehicles except motorcycles (gear box restrictions may apply e.g. automatic or synchromesh).

LICENCE CLASSES

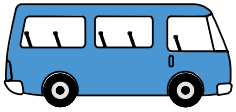


Full details of licence classes are available on www.sa.gov.au

Driving characteristics of heavy vehicles differ from vehicle to vehicle (eg gearbox, brakes, handing characteristics etc). Even though you have a heavy vehicle drivers licence of the appropriate class, you should ensure you are trained and competent in the vehicle you are about to drive.

LR (LIGHT RIGID LICENCE)

THE VEHICLE YOU WANT TO DRIVE



Rigid
Yes

Number of passengers including the driver
Can seat more than 12 adults including the driver (bus).

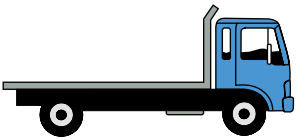
GVM
GVM over 4.5 t but not greater than 8 t. Any towed trailer must not weigh greater than 9 t GVM subject to combination limits under the regulations.

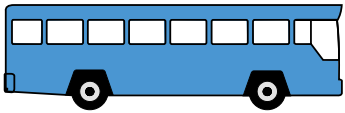
WHAT YOU NEED TO GET THIS LICENCE

- Have held a class C licence, for one year or more.
- Either pass a VORT or undertake the Heavy Vehicle CBT&A course.

MR (MEDIUM RIGID LICENCE)

THE VEHICLE YOU WANT TO DRIVE (Note the number of axles)





Rigid
Yes

Number of axles
2

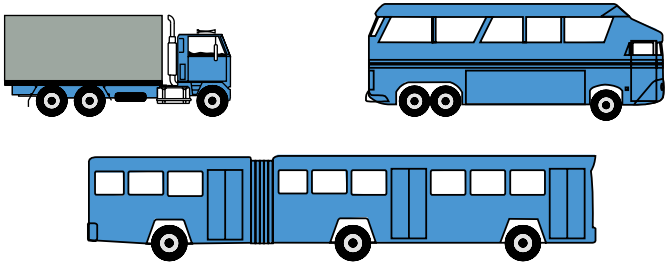
GVM
GVM greater than 8 t. Any towed trailer must not weigh greater than 9 t GVM subject to combination limits under the regulations. A special purpose vehicle the GVM not greater than 15 t.

WHAT YOU NEED TO GET THIS LICENCE

- Have held a class C licence, for one year or more.
- Either pass a VORT or undertake the Heavy Vehicle CBT&A course.

HR (HEAVY RIGID LICENCE)

THE VEHICLE YOU WANT TO DRIVE (Note the number of axles)



Rigid
Yes **Note:** Bendi-buses (or articulated buses) are treated as rigid vehicles.

Number of axles
3 or more

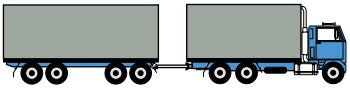
GVM
GVM greater than 8 t GVM buses greater than 8 t (including an articulated bus) Any towed trailer must not weigh greater than 9 t GVM subject to combination limits under the regulations.

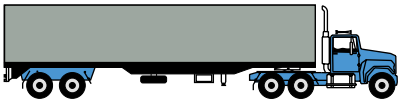
WHAT YOU NEED TO GET THIS LICENCE

- Have held a class C licence for two years or more, or a class LR or MR for one year or more.
- Either pass a VORT or undertake the Heavy Vehicle CBT&A course.

HC (HEAVY COMBINATION LICENCE)

THE VEHICLE YOU WANT TO DRIVE (Note the number of axles)





Articulated vehicle or Heavy Rigid vehicle trailer combination including unladen dolly
Yes

Number of axles
3 or more

GVM
Any towed trailer with GVM of more than 9 t.

WHAT YOU NEED TO GET THIS LICENCE

- Have held a class MR or HR licence for one year or more.
- Either pass a VORT or undertake the Heavy Vehicle CBT&A course.
- Or complete a TiLE course.

To be eligible for the TiLE course:

- you must have held a class C license for at least two years; and
- pass a knowledge test for TiLE course.

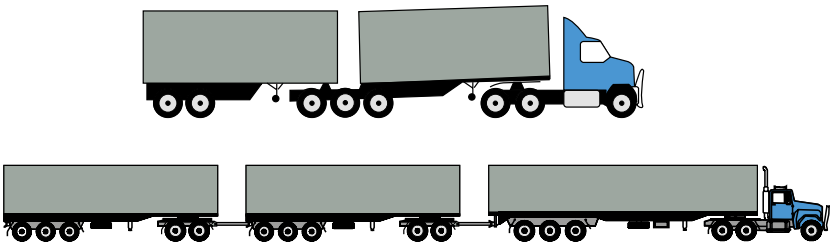
TRAINING-in-LIEU OF EXPERIENCE (TiLE)

TiLE is a fast track method that enables the holder of an unrestricted car licence (class C) with two years driving experience to fast track the process to become a HC licence holder. As a qualifying car licence holder you must in order:

1. pass a two day theory course run by an approved Registered Training Organisation.
2. obtain a HC learners permit from Service SA.
3. undertake your practical training with an approved authorised examiner for TiLE via the CBT&A method.

MC (MULTI-COMBINATION LICENCE)

THE VEHICLE YOU WANT TO DRIVE



Road train or B-Double

Yes

Any motor vehicle or combination of motor vehicles except a motor bike or motor trike (includes B Doubles and Road Trains)

WHAT YOU NEED TO GET THIS LICENCE

- You must be at least 20 years of age.
- Have held a class HR or HC licence for one year or more.
- Pass a knowledge test.
- Undertake and satisfactorily complete Heavy Vehicle CBT&A course. Applicants holding a class HR licence are required to pass all class HC licence assessment competencies before undergoing MC training.

MEDICAL EXAMINATIONS

Commercial drivers accredited under Basic Fatigue Management (BFM) and Advanced Fatigue Management (AFM) have additional medical requirements (see BFM and AFM in chapter 3).

In South Australia, BFM and or AFM nominated drivers are required to be certified as being fit to drive a heavy vehicle by a medical practitioner in accordance with the resource, *Assessing Fitness to Drive for Commercial and Private Vehicle Drivers - March 2012* published by Austroads and the National Transport Commission.

For licence class MC, a medical is required as a minimum:

- once every three years if you are 49 and under; or
- yearly for drivers over 50.

Employed drivers must provide their medical certificate or a copy to their employer. Self employed drivers must retain their medical certificate with their medical records.

If operating a road train on a route between Port Augusta West on National Highway 1 and northern Adelaide, you must carry your current and valid medical certificate or a legible copy that has been issued in accordance with a medical examination for commercial drivers as described above.

Learning to drive

You do not need to get a learners permit, if you are learning to drive:

- a heavy vehicle in the next licence class in the national hierarchy of national licence classes e.g. you have a Medium Rigid licence and you want to learn to drive a Heavy Rigid vehicle, or
- you meet any other pre-requisites of that class of licence e.g. for a Light Rigid you must have held your car class licence for at least one year.

You must be accompanied and supervised by a qualified supervising driver:

- who holds the class of licence for the heavy vehicle you want to drive, or a higher class; and
- has held an unrestricted licence for two years or more.

You may also need a National Driver Work Diary (see **section 3 Driver Management**, page 39).

If you want to upgrade your driver's licence you need to either pass a VORT or undertake the heavy vehicle CBT&A course.

DRIVING TESTS

The test vehicle must be currently registered (NOT under the Federal Interstate Registration Scheme (FIRS)) and be roadworthy.

Driving tests can be undertaken in most vehicles of the licence class you are applying for.

All heavy vehicles, except buses, presented for the heavy vehicle driving test must be loaded to at least 75 per cent of the maximum mass allowable for the vehicle to be driven on public roads. This is at least 75 per cent of the 'legal mass limit'.

If you obtain your licence in a vehicle fitted with an automatic or synchromesh gear box you will be restricted to driving these types of vehicles.

To have the condition removed you have to pass a driving test in a vehicle fitted with a non-synchromesh gear box.

Information on which vehicles can be used for testing is available on our website in the trainee guides for heavy vehicles available at www.sa.gov.au.

HEAVY VEHICLE COMPETENCY BASED TRAINING AND ASSESSMENT

Heavy vehicle CBT&A is a progressive assessment system culminating in a final assessment drive that brings together the competencies of the course. Your training and assessment will be conducted by an authorised examiner in accordance with a predefined Competency Based Training course.

Learners are trained and assessed for each task in the Training Guide to the documented standard.

There are a minimum of 30 task assessments plus final review for a heavy vehicle CBT&A course.

The training allows you to learn at your own pace without a “test” deadline.

There is no pass or fail when each task is assessed. If you are unsuccessful in an assessment task you will be retrained and reassessed for that task.

Your authorised examiner records your performance in a Trainee Guide (log book) and once you have successfully completed all the required criteria and completed a final assessment drive you are issued a Certificate of Competency and can apply to upgrade your licence.

If you have chosen to obtain your licence via a CBT&A you will have to find a suitably qualified authorised examiner for the class of licence you are seeking.

Your authorised examiner will book your final assessment drive.

Except for a Multi-Combination (MC) you are not compelled to complete a heavy vehicle CBT&A course. You may:

- Opt to undertake a VORT at any time with a different authorised examiner.
- Change authorised examiner at anytime during the CBT&A course. The new authorised examiner will be required to confirm you can perform the tasks signed off by the previous authorised examiner.

For more information call 13 10 84 or visit www.sa.gov.au/heavyvehicles.

You must hold a current South Australian driver’s licence to be eligible for Heavy Vehicle CBT&A course.

The most common method for obtaining a heavy vehicle licence in South Australia is via the Heavy Vehicle CBT&A with an approved Registered Training Organisation.

VEHICLE ON ROAD TESTS

The Vehicle on Road Test (VORT) will test your skills and knowledge as a safe and competent driver.

Note:

A VORT is not available for a Multi-Combination (MC) licence. All MC licences must be obtained via a CBT&A.

A VORT is either a pass or a fail and is an objective testing system based on your correct responses to road and traffic conditions.

The test is conducted on an authorised test route and will require you to demonstrate skills and knowledge in most of the driving skills in the CBT&A course. For example; defensive driving, gear changing, driving straight ahead at controlled and uncontrolled intersections, changing lanes, hills and open road driving and reversing exercises.

A heavy vehicle VORT will take between 45 minutes to an hour and 15 minutes depending on the conditions and vehicle.

To prepare for a VORT you may:

- train with a Qualified Supervising Driver who has a class of licence appropriate to the class of licence you are seeking; and/or
- train with a licensed Motor Driving Instructor.

When you are ready to take a VORT, you must engage an authorised examiner who will book the test.

You are not permitted to undertake a VORT with any authorised examiner who has contributed to your training.

MANOEUVRES

The driving test assesses your ability to drive safely and competently. During the test you will be required to perform certain manoeuvres.

For further information on manoeuvres for a particular class of licence, refer to the trainee guide for that class of licence:

- Trainee guide for Light and Medium Rigid vehicles (LR & MR) Competency Based Training and Assessments
- Trainee guide for Heavy Rigid (HR) and Heavy Combination (HC) Competency Base Training and Assessment
- Trainee guide for the Multi-Combination course Competency Based Training and Assessment

These guides are available on the website www.sa.gov.au/heavyvehicles.

GOVERNMENT AUDITING

A government officer may be present during a VORT or a CBT&A last training session to audit the testing process.

BRIBING PEOPLE IS AGAINST THE LAW

It is illegal to offer, request or accept gifts, rewards, money or other favours in order to get a licence without passing the required tests. Penalties are severe and include fines and imprisonment. All cases of corruption will be reported and investigated, and strong action will be taken against those involved.

If you know or believe that someone has, or is about to get a licence by offering or responding to a request for a bribe - or if you suspect or know of any other corruption or misconduct involving an authorised examiner, a Department of Planning Transport and Infrastructure employee or a Service SA representative, call Service SA on 13 10 84 (free call) or the Office for Public Integrity (OPI) on 1300 782 489 or 08 207 1777.

If you are a public officer, you must also report conduct of this nature to the OPI.

Under the Directions and Guidelines published by the Independent Commissioner Against Corruption (ICAC), all public officers have an obligation to report to the OPI any conduct they reasonably suspect amounts to corruption or serious of systemic misconduct or maladministration.

Failure to make such a report could be misconduct.

COMPLAINTS AGAINST MOTOR DRIVING INSTRUCTORS AND AUTHORISED EXAMINERS

If you are undertaking training for your heavy vehicle licence and you have a compliant involving the standard of training assessment of tasks, CBT&A or the VORT, you may make a complaint in writing by addressing correspondence to:

The Registrar of Motor Vehicles
Department of Planning, Transport and Infrastructure

GPO BOX 1533
Adelaide SA 5001

or www.dpti.sa.gov.au/contact_us

If your complaint is about the business practice or service provided by an authorised examiner your complaint may be directed to Consumer and Business Services.

For issues regarding discrimination, contact the Office of the Commissioner for Equal Opportunity or the Australian Human Rights Commission.

For complaints of a criminal nature, such as fraud, assault or sexual harassment, the complaint should be reported to the South Australia Police.

2 licences

WHAT YOU SHOULD KNOW ABOUT LICENCES

After reading this section, you should know:

- which vehicle type you are eligible to apply for on your current licence
- what you must do to upgrade your driver's licence
- alternate ways of obtaining a heavy vehicle licence.

NOTES

Driving a heavy vehicle can be demanding. It is important to abide by the driver fatigue laws and regulations and generally take care of your health, in the interest of public safety and your own wellbeing.

A heavy vehicle driver spends a lot of time on the road. The work is demanding and you are responsible for heavy loads, dangerous goods and passengers. It is very important that you are in good health for your own safety and that of the public.

HEALTH OF HEAVY VEHICLE DRIVERS

The most important ways to stay healthy and keep on top of your job are:

- get enough sleep
- eat a well-balanced diet
- exercise regularly
- try to relieve stress.

ENOUGH SLEEP

The need for sleep varies among individuals with some people needing more sleep than others. Make sure that you get most of your sleep at night time - it is better than daytime sleep. Regular night sleep of about seven to eight hours is one of the best ways to manage driver fatigue.

See the following pages in this section on managing driver fatigue and for information on the legal minimum work and rest time.

DIET AND EXERCISE

To stay fit and healthy for your job your weight needs to be within an acceptable range. Eating the right foods and taking regular exercise is the only answer. Ask your GP for advice or check these websites for information: www.ntc.gov.au and www.austroads.com.au.

TRY TO RELIEVE STRESS

Stress affects your driving. If you are having problems at home or at work, your GP can advise you on where to go for help.

Driver fatigue

Driver fatigue is one of the contributing factors in serious crashes involving heavy vehicles.

As a heavy vehicle driver, you need to understand what causes fatigue and how to pick up on the early warning signs so that you can do something about it before it affects your driving.

Fatigue is caused by a number of factors, including:

sleep factors

- getting less sleep than you need
- getting less sleep than you need over a number of days
- trying to sleep during the day

time of day factors

- working when you should normally be asleep
- working in the early hours of the morning
- working in the early afternoon after a heavy lunch
- sleeping during the day when you would normally be awake

work factors

- long driving hours
- night time driving
- irregular hours and early starting times
- tight scheduling
- insufficient time to recover from previous work
- doing non-driving physical work such as loading and unloading
- poor driving conditions such as hot or wet weather
- monotonous driving

physical factors

- poor health and fitness
- emotional issues
- medical sleep problems.

SIGNS OF DRIVER FATIGUE

Driver fatigue severely impairs your concentration and judgment; it slows your reaction time. Watch for these early warning signs of driver fatigue:

- yawning
- poor concentration
- tired or sore eyes
- restlessness
- drowsiness
- slow reactions
- boredom
- feeling irritable
- making fewer and larger steering corrections
- missing road signs and taking wrong turns
- having difficulty staying in the lane
- microsleeps - when you ‘nod off’ for a short time.

TIPS ON MANAGING DRIVER FATIGUE

- Resting and sleeping are the two most important ways to combat fatigue. Have a good night's sleep before you start your trip, and even have an afternoon nap before starting back on a night shift. You can also take rests early on in the trip before you start feeling fatigued.
- Plan your trip ahead of time to allow for rest breaks.
- Plan your rest breaks before you start feeling fatigued, or plan where to stop if you do start to feel fatigued. If you can, plan rest breaks for when your body clock will tell you to be asleep (i.e. afternoon, night/early morning) because that is when you are most likely to become fatigued.
- Try and have a regular sleep and waking schedule on every day of the week.
- Be aware of the causes and effects of fatigue and recognise the early warning signs. Make sure you stop and rest as soon as possible when you realise you are becoming fatigued. Do not try and push on, especially in those 'body clock' danger times of night/early morning and afternoon.
- Have at least two nights of unrestricted sleep to repay 'sleep debt' to become completely refreshed.
- Look after your health and fitness with regular exercise and a healthy diet.
- Never drink alcohol before or during your trip.
- Never drive longer than the legal work and rest hours.
- Never agree to a roster that is longer than the legal work and rest hours.

ROADSIDE REST AREAS

Rest areas are available 24 hours a day all year round and are clearly signposted. Service centres, petrol stations, parks and country towns are other places you can stop and take a break from driving.

More information is available on rest areas at www.sa.gov.au

HEAVY VEHICLE DRIVER FATIGUE

The Heavy Vehicle National Law (SA) and the Heavy Vehicle (Fatigue Management) National Regulation contain provisions relating to the management of heavy vehicle driver fatigue. The legislation applies to drivers of fatigue regulated heavy vehicles and to parties in the supply chain whose activities influence the conduct of heavy vehicle drivers in such a way as to affect the driver's fatigue. The National Regulation sets the maximum hours of work and minimum rest periods for drivers of 'fatigue regulated heavy vehicles'.

A fatigue regulated heavy vehicle is a:

- motor vehicle with a Gross Vehicle Mass (GVM) of more than 12 t or a combination with a GVM of more than 12 t
- bus with a GVM of more than 4.5 t built or fitted to carry more than 12 adults (including the driver).

WORK

Work limits are like speed limits. They state the maximum time allowed in ideal conditions. That is, when drivers are well rested and alert. If you are likely to be fatigued for any reason you must not drive a fatigue-regulated heavy vehicle.

Work time is not just driving time.

Work refers to the time that the driver spends driving a fatigue-regulated heavy vehicle whether or not it is on a road and any other time spent on tasks related to the operation of the vehicle. Driving includes being in the driver's seat while the engine is running and instructing or supervising the driver of the vehicle. Work time also includes:

- loading and unloading the vehicle
- inspecting, servicing or repairing the vehicle
- inspecting or attending to the load on the vehicle
- attending to passengers of a bus
- cleaning or refuelling the vehicle
- performing marketing tasks in relation to the operation of the vehicle
- marketing tasks include arranging for the transport of passengers or goods as well as canvassing for orders for the transport of passengers or goods
- recording information.

Work time is a maximum period so is always rounded upwards e.g. a period less than 15 minutes is counted as 15 minutes work, a period more than 15 minutes up to 30 minutes is counted as 30 minutes work etc.

REST

All other time is counted as rest. The rest requirement is a minimum period. If you feel fatigued, you will need more rest. When you feel tired, stop, take a break or have a sleep. Rest is always rounded downwards e.g. a period less than 15 minutes does not count towards rest, while a period of 15 minutes but less than 30 minutes is counted as 15 minutes rest etc.

CHAIN OF RESPONSIBILITY

The Heavy Vehicle National Law (SA) requires all parties in the supply chain to take all reasonable steps to prevent fatigue of heavy vehicle drivers.

For example, this means that:

- drivers must stop the vehicle if feeling tired or fatigued
- operators and schedulers must plan when drivers can take a rest
- loading managers must take steps to ensure queuing is managed properly
- contracts must not be prepared that require drivers to break the law.

Parties in the supply chain include the:

- employer of the driver of the vehicle
- prime contractor of the driver
- operator of the vehicle
- scheduler of goods or passengers for transport by the vehicle, and the scheduler of its driver
- consignor of goods for transport by the vehicle
- consignee of goods for transport by the vehicle
- loading manager of goods for transport by the vehicle
- loader of goods on to the vehicle
- unloader of goods from the vehicle.

Your vehicle is your workplace

Any vehicle used by employees in the course of their employment is defined as their workplace, including heavy trucks or buses.

WORK AND REST OPTIONS

Under the Heavy Vehicle (Fatigue Management) National Regulation, industry has a choice of operating under three fatigue management schemes. Each option allows increasing levels of flexibility which are offset by managing risks through accreditation schemes.

The tables that follow set the maximum work and minimum rest requirements provided in the National Regulation.

In a period referred to in column one, a driver must not work for more than the period referred to in column two. A driver must also have a total rest time for a period of no less than the time referred to in column three.

STANDARD HOURS

The Standard Hours option is aimed at regular scheduled operations with a lower fatigue risk with up to 12 hours work in a 24 hour period.

TABLE 1 Standard Hours
Solo Drivers of a Fatigue-Regulated Heavy Vehicle

Total period In any period of...	**Maximum work time** A driver must not work for more than a total of...	**Minimum rest time** And must have at least...
5 hours and 30 minutes	5 hours and 15 minutes	15 continuous minutes rest
8 hours	7 hours and 30 minutes	30 minutes rest, in blocks of 15 continuous minutes
11 hours	10 hours	60 minutes rest, in blocks of 15 continuous minutes
24 hours	12 hours	7 continuous hours stationary rest[1]
7 days (168 hours)	72 hours	24 continuous hours of stationary rest
14 days (336 hours)	144 hours	4 night rests (includes 2 consecutive nights rests[2])

1 Stationary rest is rest time that a driver spends out of a heavy vehicle or in an approved sleeper berth of a stationary fatigue-regulated heavy vehicle.

2 A night's rest break means 7 continuous hours stationary rest time taken between 10 pm and 8 am or 24 continuous hours stationary rest.

TABLE 2 Standard Hours Fatigue Management Solo Driver of Buses

Total period In any period of...	**Maximum work time** A driver must not work for more than a total of...	**Minimum rest time** And must have at least...
5 hours and 30 minutes	5 hours and 15 minutes	15 continuous minutes rest
8 hours	7 hours and 30 minutes	30 minutes rest, in blocks of 15 continuous minutes
11 hours	10 hours	60 minutes rest, in blocks of 15 continuous minutes
24 hours	12 hours	7 continuous hours stationary rest[1]
7 days (168 hours)		6 x night rest breaks[2]
28 days (672 hours)	288 hours	4 x 24 continuous hours stationary rest

1 Stationary rest is rest time that a driver spends out of a heavy vehicle or in an approved sleeper berth of a stationary fatigue-regulated heavy vehicle.

2 A night's rest break means 7 continuous hours stationary rest time taken between 10 pm and 8 am or 24 continuous hours stationary rest.

TABLE 3 Standard Hours Fatigue Management Two-Up Drivers of a Fatigue-Regulated Heavy Vehicle

Total period In any period of...	**Maximum work time** A driver must not work for more than a total of...	**Minimum rest time** And must have at least...
5 hours and 30 minutes	5 hours and 15 minutes	15 continuous minutes rest
8 hours	7 hours and 30 minutes	30 minutes rest, in blocks of 15 continuous minutes
11 hours	10 hours	60 minutes rest, in blocks of 15 continuous minutes
24 hours	12 hours	5 continuous hours stationary[1] rest or 5 continuous hours rest time in an approved sleeper berth while the vehicle is moving
52 hours		10 continuous hours stationary rest
7 days (168 hours)	60 hours	24 hours continuous stationary rest time and 24 hours stationary rest time in blocks of at least 7 continuous hours stationary
14 days (336 hours)	120 hours	4 night rests (includes 2 consecutive nights rest[2])

1 Stationary rest is rest time that a driver spends out of a heavy vehicle or in an approved sleeper berth of a stationary fatigue-regulated heavy vehicle.

2 A night's rest break means 7 continuous hours stationary rest time taken between 10 pm and 8 am or 24 continuous hours stationary rest.

BASIC FATIGUE MANAGEMENT (BFM)

BFM gives accredited operators greater flexibility in managing driver work and rest times, providing the risks of working long and night hours are managed. Before a driver can work BFM they must have been inducted into their operator's BFM system and meet the requirements relating to drivers under accreditation.

The 36 hour rule manages the risk of working long hours in combination with night work. A driver can only work up to 36 'long and night' hours in any seven day period.

TABLE 4 Basic Fatigue Management
Solo Drivers of a Fatigue-Regulated Heavy Vehicle

Total period In any period of...	**Maximum work time** A driver must not work for more than a total of...	**Minimum rest time** And must have at least...
6 hours and 15 minutes	6 hours	15 continuous minutes rest
9 hours	8 hours and 30 minutes	30 minutes rest, in blocks of 15 continuous minutes
12 hours	11 hours	60 minutes rest, in blocks of 15 continuous minutes
24 hours	14 hours	7 continuous hours stationary[2] rest
7 days (168 hours)	36 hours long/night[1]	
14 days (336 hours)	144 hours	2 x 24 continuous hours stationary rest. First 24 hours rest must be taken after no more than 84 hours work and 4 night rest breaks[3] off (including 2 consecutive)

1. Long/night hours means any work time in excess of 12 hours in any 24 hour period or between 12 midnight and 6am.
2. Stationary rest break is rest time that a driver spends out of a heavy vehicle or in an approved sleeper berth of a stationary fatigue-regulated heavy vehicle.
3. A night's rest break means 7 continuous hours stationary rest time taken between 10 pm and 8 am or 24 continuous hours stationary rest.

TABLE 5 Basic Fatigue Management
Two-Up Drivers of a Fatigue-Regulated Heavy Vehicle

Total period In any period of...	**Maximum work time** A driver must not work for more than a total of...	**Minimum rest time** And must have at least...
24 hours	14 hours	
82 hours	No limit has been set	10 continuous hours stationary[1] rest time
7 days (168 hours)	70 hours	24 hours continuous stationary rest time and 24 hours stationary rest time in blocks of at least 7 continuous hours
14 days (336 hours)	140 hours	4 x 7 continuous hours night rest breaks[2]

1 **Stationary rest is rest time a driver spends out of a heavy vehicle or in an approved sleeper berth of a stationary fatigue- regulated heavy vehicle.**

2 **A night's rest break means 7 continuous hours stationary rest time taken between 10 pm and 8 am or 24 continuous hours stationary rest.**

ADVANCED FATIGUE MANAGEMENT (AFM)

AFM hours are more flexible and less prescriptive than either Standard Hours or BFM hours. Drivers may work AFM hours when they have been inducted into their operator's AFM fatigue management system and meet the requirements relating to drivers under accreditation. Operators must specify the normal operating limits under which their drivers will usually work.

TABLE 6 Advanced Fatigue Management Outer Limits

Total period In any period of...	**Maximum work time** A driver must not work for more than a total of...	**Minimum rest time** And must have at least...
24 hours	15.5 hours work time	7 continuous hours stationary[1] rest time or if in a two-up driving arrangement, 7 continuous hours of stationary rest time or rest time in an approved sleeper berth while the vehicle is moving.
14 days (336 hours)	154 hours work time	30 continuous hours stationary rest time that includes the periods 12 am to 6 am on a day and 12 am to 6 am on the following day, using the time zone of the driver's base.
28 days (672 hours)	288 hours work time	

1 Stationary rest is rest time that a driver spends out of a heavy vehicle or in an approved sleeper berth of a stationary regulated heavy vehicle.

NATIONAL DRIVER WORK DIARY

Drivers of fatigue regulated heavy vehicles that are required to carry and fill in a work diary must record their work and rest times.

Drivers must record information such as whether they are working under Standard Hours, BFM hours or AFM hours and when they change from the work to rest option in their work diary.

The new work diary is available from Service SA customer service centres.

COMPLETING YOUR WORK DIARY

You must record all work and rest time in your work diary unless you are within 100 km of your home base or you are operating under an exemption. These records must be completed for the whole trip. The work diary must show:

- your name
- driver's licence number
- accreditation number (recorded in work diary if applicable)
- fatigue management option under which you are operating
- date and day of week
- time zone (driver base).

You must also record:

- work and rest hours
- number plate (record at start and end of day and vehicle change)
- odometer reading (record at start and end of day and at each work and rest change if the odometer reading changes and if there is a vehicle change)
- name of location at each work and rest change (rest area, truck stop, suburb or town)
- total number of hours of each activity at the end of the day
- when the page is completed, sign the daily sheet to certify that the entries are correct.

More information about the National Driver Work Diary and how to correctly fill it in is available at www.nhvr.gov.au.

If you are a two-up driver or become a two-up driver, you must record the:

- other driver's name
- other driver's licence number and State or Territory where issued
- security or identifying number of the other driver's work diary.

You must use the work diary pages in strict order from start to finish. You must be able to produce your last 28 days driving records and give your record keeper the duplicate copies of your work diary within 21 days. If you have more than one employer in a single day, you must also give the other record keeper a copy of your work diary page. Record keepers must keep copies of work and rest records for a period of three years.

LOOKING AFTER YOUR WORK DIARY

The work diary is issued to you personally and it is an offence to:

- let anyone else use or borrow it
- have more than one work diary containing pages which have not been used or cancelled
- remove the application page or any original pages
- alter, deface or destroy any page
- make any false entries.

Carry and complete your work diary at all times. You must be able to produce your driving record for the last 28 days.

DRIVER BASE

The driver base is the place from where the driver normally does the work.

Alcohol, drugs and heavy vehicle drivers

It is illegal to drive while under the influence of alcohol or drugs, including some over-the-counter and prescription medicines.

EFFECTS OF ALCOHOL ON DRIVING

Alcohol is a depressant and reduces your ability to drive safely because it:

- slows brain functions so that you can't respond to situations, make decisions or react quickly
- reduces your ability to judge speed and distance
- gives you false confidence that leads to taking risks
- makes it hard to do more than one thing at a time
- affects your sense of balance and coordination
- makes you sleepy.

GETTING BACK TO ZERO TAKES TIME

After a night of heavy drinking, it can take more than 18 hours for your blood alcohol concentration (BAC) level to get back to zero. Many people are booked for drink driving the day after.

WHAT DOES NOT SOBER YOU UP

- A cup of black coffee
- A cold shower
- Fresh air
- Mints or chewing gum
- Milk
- A short nap
- Vomiting

These things have no effect on your blood alcohol level. Once you have had a drink, you just have to wait it out.

Your BAC must be zero when you drive a:

- heavy vehicle with a GVM exceeding 15 t
- prime over with an unladen mass exceeding 4 t
- public passenger vehicle such as a bus or a coach
- vehicle which carries a dangerous load.

Even one drink can put you over the legal limit.

You need to take into account any drinks you have had.

It takes the body an hour or more to get rid of the alcohol from one standard drink.

DRUGS AND HEAVY VEHICLE DRIVERS

A drug is any chemical substance that alters the normal way that your body or mind works. Drugs not only affect your physical skills such as reaction times, coordination and vehicle control but also affect your mood, perception, information processing and risk-taking behaviour. That is why drugs can make your driving worse and greatly increase your chance of having a crash.

How a drug will affect you depends on:

- the drug itself - type, amount, purity and method of use
- your weight, body size and health
- other drugs you have taken, and the setting such as surroundings and work situation.

Whatever drug is used, it is important that you know how it affects you, the harm it can do and what it does to your body.

Generally heavy vehicle drivers who do take drugs take two types - stimulants to try and stay awake and depressants to try and go to sleep.

A good sleep is the only way to prevent or cure fatigue. Taking drugs to keep awake can make fatigue worse when the effect of the drug wears off.

STIMULANTS

Stimulants (uppers) speed up messages between the brain and the body. They include medicines with mild stimulants like pseudoephedrine and illegal drugs like speed.

THE EFFECT OF STIMULANTS ON DRIVING

Stimulants do not increase your driving ability or coordination, however, they can:

- give you a false sense of confidence
- increase your risk taking behaviour
- distort your visual perceptions making it difficult to judge distances
- make you feel exhausted because you cannot sleep which will affect your reflexes and your concentration
- increase your risk of having a crash.

As the effects of stimulants begin to wear off, you may experience a level of fatigue that is worse than when you first took the drug.

The long-term health effects of taking stimulants include:

- anxiety
- chronic sleep problems
- compulsive repetition of actions
- depression
- extreme mood swings
- high blood pressure
- heart failure
- impotence
- irritability
- panic attacks or seizures
- paranoia
- suspiciousness
- weight problems.

DEPRESSANTS

Depressants slow your reflexes, impair your balance and coordination, affect your vision and perception of time and space, your memory and your ability to think logically. The 'hangover' effects such as drowsiness and poor coordination can last for several hours after the initial effects, which can mean you are not able to drive safely.

Depressants greatly increase the risk of having a crash when you are driving because you can have:

- slower reaction time
- distorted perception of speed and distance
- impaired vision
- reduced ability to concentrate
- impaired coordination and decreased ability to coordinate the appropriate reaction when driving.

PRESCRIPTION DRUGS

Some prescription medications can affect your driving. Read the instructions on the packaging or consult your doctor or pharmacist to find out if the drugs you are taking would impair your driving ability.

DRUG TESTING

ROADSIDE DRUG TESTING

Police have powers to carry out random roadside drug testing on any driver, rider and supervising licence holder in SA.

DRIVING UNDER THE INFLUENCE OF DRUGS

If you or your manner of driving indicates that you are impaired by drugs or you are involved in or admitted to hospital as a result of a crash, then police can subject you to a drug test or take a blood sample. The sample will be analysed for drugs, including some prescription drugs that are known to impair driving.

The Department of Planning, Transport and Infrastructure website "Towards Zero Together" provides more details on the impacts of drug driving.
www.dpti.sa.gov.au/towardszerotogether

Seatbelts

It is important for truck and bus drivers to wear a seatbelt. Compulsory seatbelt laws apply to heavy vehicle drivers.

Wearing a seatbelt doubles your chances of surviving a serious crash.

Any driver or passenger must wear a seatbelt properly adjusted and securely fastened wherever there is one available. If there is an empty seat with a seatbelt, a passenger must move to that seat. The driver will not be penalised if there is no seatbelt and the vehicle has been manufactured before the requirement for seatbelts commenced.

Vehicles that have been modified by the installation of non-original seats (eg driver's suspension seat) must have suitable seatbelts in order for those vehicles to comply with mandatory equipment requirements and provide the driver with a suitable level of comfort.

It is an offence to remove a fitted seatbelt from a vehicle. If you remove it you may be breached for not wearing it as well as for removing it.

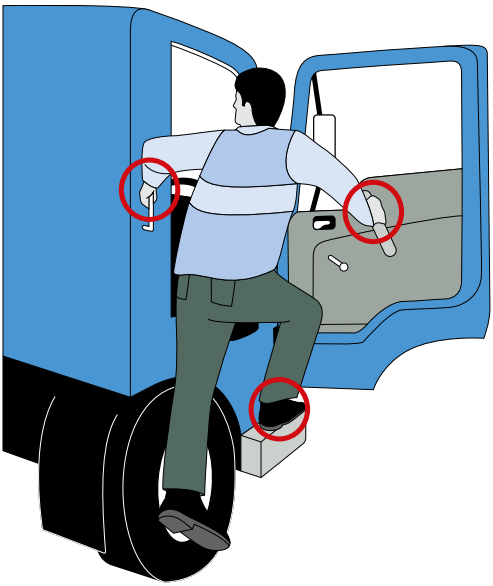
THE DRIVER IS RESPONSIBLE

Drivers are responsible for all passengers, particularly children, being properly restrained in a seatbelt or approved child restraint where seat belts are fitted. There are fines and demerit points for a driver who is not wearing a seatbelt and who fails to ensure that passengers use seatbelts.

Passengers aged 16 years and over who do not use an available seatbelt will also be individually fined.

Entering and exiting a vehicle

There is a procedure for safely entering and exiting a heavy vehicle.



To enter the vehicle the driver must check for traffic before moving out from the line of the vehicle and again before opening the door. When entering the vehicle the driver must use available steps and grab handles to climb into the vehicle, maintaining three points of contact at all times.

To exit the vehicle the driver must check again for traffic before opening the door. When exiting the vehicle the driver must exit facing the vehicle using available steps and grabs (not jumping) while maintaining three points of contact.

Bus drivers also need to be aware of this procedure.

3 driver management

WHAT YOU SHOULD KNOW ABOUT DRIVER MANAGEMENT

After reading this section, you should know:

- how often to take a break when driving
- the warning signs of fatigue
- the blood alcohol level for drivers of trucks and buses
- standard allowable driving hours for the type of vehicle you intend to drive
- drugs and their effects
- law relating to seatbelts.

NOTES

Low risk driving

As a heavy vehicle driver you should display 'low risk' driving at all times. Only drive when you are alert, respect other road users and know how to control your vehicle.

Driving is never risk free, but you should aim to drive 'low risk'. A low risk driver has good observation, speed management and road positioning skills.

OBSERVATION

The key to good observation is scanning.

SPEED MANAGEMENT

Drive at a speed that is within the speed limit and that will allow you to react and completely stop within the distance you can see is clear. When you see potential hazards, slow down and prepare to stop. If you cannot see at least five seconds ahead you should slow down. Slow down on wet, icy or gravel roads where it will take longer for your vehicle to stop.

ROAD POSITIONING

Position your vehicle to maximise the distance from hazards (this is also referred to as buffering). For example, moving left at the crest of a hill to create space from oncoming vehicles, or maintaining a safety margin from parked vehicles to avoid doors opening and pedestrian movement.

CRASH AVOIDANCE SPACE

A low risk driver maintains crash avoidance space completely around the vehicle. The crash avoidance space is managed by adjusting the vehicle's speed and road position.

To determine the crash avoidance space to the front of the vehicle you need to take into account two key factors - reaction time and response time.

Reaction time is the time the driver needs to:

- see the information
- perceive what it means
- decide on a response
- instigate that response.

A heavy vehicle driver who is fit, concentrating, alert, and not affected by alcohol, drugs, fatigue or a distraction, will still require about 1½ seconds to react.

Response time is the time required to take action. Generally a minimum of three seconds is needed to respond. In many situations braking may be the only possible response. Swerving is rarely appropriate and can result in a more severe crash, for example, a head-on collision.

A total of at least four seconds crash avoidance space is needed to react and respond to a situation in front of you. You may need even longer in poor conditions such as rain or darkness.

The four-second gap can be used when following another vehicle or if there is potential for something to move into your crash avoidance space.

FOLLOWING ANOTHER VEHICLE

Four-second crash avoidance space. To calculate a four-second crash avoidance space when following another vehicle, use this basic technique: as the rear of the vehicle in front of you passes a stationary object at the side of the road such as a power pole, tree or sign, start a four-second count 'one thousand and one, one thousand and two, one thousand and three, one thousand and four'.

If your vehicle passes the object you picked before you finish the four-second count, you are following too closely. Your crash avoidance space is not large enough. Slow down, and repeat the count again until the four-second crash avoidance space is achieved.

In poor driving conditions, such as rain, night or gravel roads, it may be necessary to increase your crash avoidance space to five or more seconds.

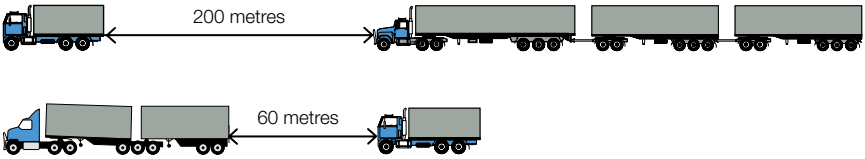
POTENTIAL FOR SOMETHING TO MOVE INTO THE CRASH AVOIDANCE SPACE

The four-second gap can also be used for situations where there is potential for something to move into the crash avoidance space, for example, a car in an adjacent street could fail to give way and pull out. Low risk drivers experienced in maintaining a four-second following distance are able to mentally judge a four-second crash avoidance space in front of their vehicle. If there is potential for a hazard to enter this crash avoidance space, reduce your speed and create a buffer. It is necessary to maintain the crash avoidance space for all potentially hazardous situations, including blind corners and crests.

Many of the crashes that occur each day could be avoided if drivers actively maintained their crash avoidance space.

LEGAL MINIMUM DISTANCES BETWEEN LARGE VEHICLES

A road train that is travelling behind a long vehicle (a vehicle 7.5 m or longer) must maintain a minimum following distance of 200 m. All other long vehicles travelling behind another long vehicle must maintain a minimum following distance of 60 m. This minimum following distance requirement does not apply on multilane roads, in built up areas or when overtaking.



By law large vehicles must maintain the minimum or greater following distance.

If another law prescribes a different minimum following distance the driver of a road train or other long vehicle must comply with that requirement.

DRIVING IN WET CONDITIONS

Wet roads reduce tyre grip and can result in loss of control.

You should drive at a speed that allows you to brake gradually and stop within the distance you can see. The safe speed for your vehicle and its load may be much lower than the posted speed limit.

To avoid skidding, slow down when approaching corners and select an appropriate gear to maintain vehicle control without the need for braking.

INTERSECTIONS

At intersections you may have to swing wide to make a left turn. At marked intersections:

- position your vehicle so that any vehicles behind cannot pass on your left
- position yourself to get the best view possible of the road you are turning into.

Bus and truck drivers need to start a left turn further into the intersection than a car so that the back wheels do not run over the kerb.

CROSSING OR ENTERING TRAFFIC

You must choose a suitably large gap in the traffic to get across an intersection, enter a new street or merge with traffic.

Consider the size and weight of your vehicle when crossing or entering intersections, changing lanes, and making other manoeuvres. Also remember that a loaded vehicle will accelerate slower than an empty one.

Before moving from a stationary position at the side of the road or a median strip parking area, you must signal for at least five seconds, check mirrors and blind spots.

TURNING

Trucks and buses need more space to turn wide or cut into traffic, so allow enough space on either side of your vehicle to avoid sideswiping other road users or objects.

TURNING RIGHT FROM A ONE WAY STREET

A vehicle (or vehicle and trailer) that is 7.5 m or longer and has a DO NOT OVERTAKE TURNING VEHICLE sign displayed on the back, can turn right from the lane on the immediate left of the far right lane.

Plan your turn early so that you are in the correct part of the intersection and you have time to signal. Avoid turning too soon because the side of your vehicle may hit vehicles on your right as the back of your vehicle cuts in to the turn.

In a road with two right turn lanes, always use the turning lane on the far left.

A vehicle of 7.5 m or longer may display the words DO NOT OVERTAKE TURNING VEHICLE on one of the rear marking plates.

DO NOT OVERTAKE TURNING VEHICLE

If your vehicle (or vehicle and trailer) is less than 7.5 m long, you must not display this sign on the back, and you must turn within the lanes marked on the road at all times.

REVERSING

When reversing a heavy vehicle, you should:

- activate hazard warning lights before starting to reverse
- avoid unnecessary reversing - plan ahead to use the shortest possible reversing distance
- use a helper to guide you whenever possible - you should be able to see the guide who should have a clear view of where your vehicle is going
- get out and have a look if you are not sure what is behind you
- always reverse your vehicle into position in a driveway or loading dock.

Although you may need to hold up traffic while you reverse, it is much safer to drive forward into traffic as you leave.

OVERTAKING

There are special problems associated with overtaking while driving a heavy vehicle.

It is very important to watch for small vehicles such as motorcycles. Before pulling out, check your mirrors and glance down to check for vehicles below your cabin. Air movement caused by a large vehicle travelling fast can force a small vehicle off the road, or draw it into the side of a larger vehicle.

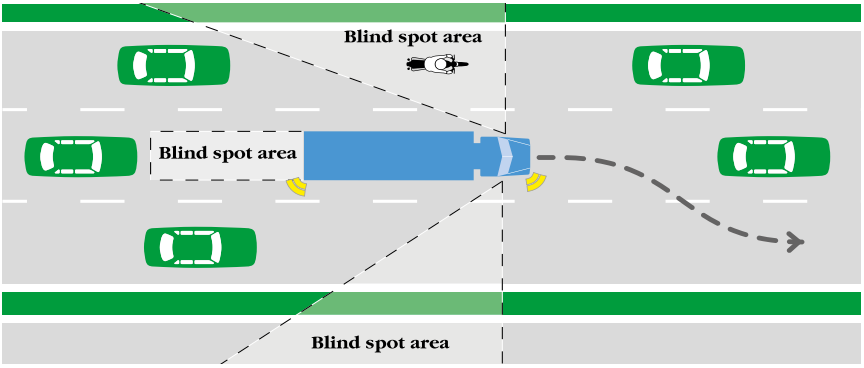
BEING OVERTAKEN

If it is safe, move into the left lane to allow faster moving traffic to overtake.

It is illegal and dangerous to direct following vehicles to overtake, using your hand or the indicator. You may be encouraging an inexperienced driver to attempt an unsafe move.

LANE CHANGING

It is very important to check that the road is clear when you want to change lanes, or when lanes merge. You also need to check before leaving the kerb and before turning. You must look in the appropriate mirrors and do blind spot head checks before making any of these moves. In a heavy vehicle it is also essential to check down the side door in the cabin.



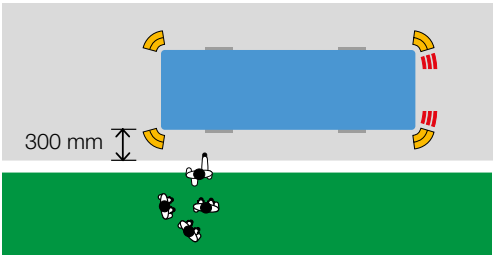
Before pulling out check mirrors, signal and check blind spot below cabin.

BUSES

STOPPING AT A BUS STOP

Bus drivers should pull up so the entrance and exit doors are within 300 mm of the kerb at a bus stop.

- Signal your intention
- Stop the bus smoothly
- Stop parallel with the kerb
- Stop the bus without hitting the kerb
- Apply the bus stop brake. If the bus does not have a bus stop brake then you must apply the normal parking brake
- Indicate for at least five seconds before pulling out of a bus stop



Stop within 300 mm of the kerb.

VEHICLE CONTROLS

SPRING BRAKES OR 'MAXI-BRAKES'

Most fully air-braked vehicles on the road are equipped with spring-loaded parking brakes. These brakes rely on air pressure to hold them in the OFF position. See 'Brake Failure' information next page.

TRAILER BRAKE

Some vehicles are fitted with a hand operated trailer brake. This is a separate valve operated by hand which applies the trailer brake independently of the footbrake. Trailer brakes may be used for coupling and uncoupling.Trailer brakes must not be used for normal braking as they will wear, overheat or burn out, and lose their effectiveness completely. A trailer with ineffective brakes attached to a towing vehicle with effective brakes can cause it to jack-knife or rollover if it brakes heavily.

A trailer hand brake may be applied if necessary to prevent the vehicle from rolling backwards and to avoid transmission shock load when moving off on a hill. Trailer brakes are not parking brakes and should not be used as such.

CONTROLLING SPEED

- Brake early and gradually.
- Where possible, brake when your vehicle is driving in a straight line.
- Allow for the weight of the load - a loaded vehicle takes far more braking effort to slow down than an unloaded one.
- Brake according to the road surface - allow more braking distance if the road is gravel, steep or slippery.
- Ease off the brakes as the vehicle slows down.
- Always test the brakes immediately after driving through deep water as wet brakes do not perform well.

The primary brake (footbrake) should be used under all normal conditions.

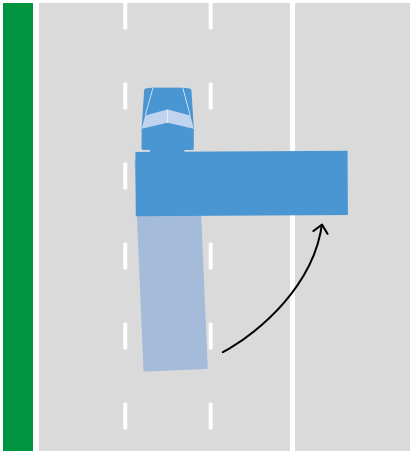
BRAKE FAILURE

Brakes kept in good condition rarely fail. Most brake failures occur because of:

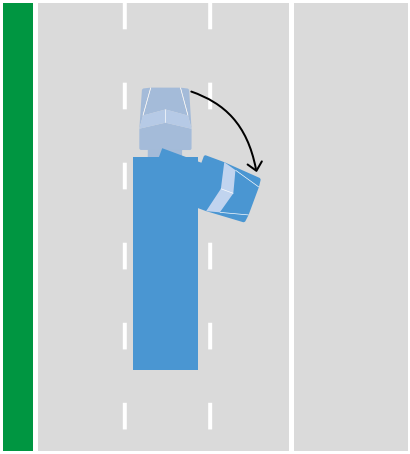
- loss of air pressure
- loss of hydraulic pressure
- overheating of brake shoes and pads from overuse
- brake fade (boiling of hydraulic fluid) on long hills
  - bad driving practice
- poorly maintained brakes.

JACK-KNIFE AND TRAILER SWING

You can reduce the chances of jack-knife or trailer swing by making sure that all brakes and tyres are in good condition and that the load is evenly distributed between axle groups. You should be especially careful in wet weather.



Trailer swing is where the trailer slides dangerously.



A jack-knife is where the trailer and prime mover lock against each other.

STOPPING AND ACCELERATING AT LEVEL CROSSINGS

It takes heavy vehicles and buses longer to clear a level crossing than other vehicles so make sure you allow extra time to clear the tracks safely.

There may not be enough room on the other side of the crossing to stop without your vehicle hanging over the tracks. Know the length of your vehicle and always check ahead before crossing so you can assess the situation. Never cross unless your vehicle can clear the tracks completely.

LOSS OF PRESSURE IN AIR BRAKES

Whenever you drive, make sure there is enough air pressure for at least five brake applications. Air brakes can fail because of a leak in the air lines or over-use. **Stop immediately** if the low air pressure warning device comes on.

Most vehicles fitted with full air system brakes are usually fitted with spring parking brakes, also known as maxi-brakes, where air pressure is required to keep them off.

On some older vehicles the spring brakes may come on when the air pressure is very low. You should monitor the air pressure gauges often as low air pressure can happen anytime. When the gauge shows low air pressure, release the brakes at least twice, so you can move the vehicle to a safe area.

LOSS OF HYDRAULIC BRAKES

What to do if your hydraulic brakes fail:

- change gears down
- pump the brakes - sometimes pumping them can partially restore hydraulic brakes
- use the emergency parking brake.

Basic driving techniques

GEAR SHIFTING

Using the gearbox properly on a truck not only means being able to change smoothly but knowing the right gear to change to and exactly when to do it.

Changing gears is one of the fundamental skills every truck driver must demonstrate. Correct gear selection is necessary for trouble free and efficient operation of a truck and is also essential before commencing a long descent. Selecting the correct gear before a descent comes with practice and is an essential skill of a heavy vehicle driver.

HILLS

You can go down a hill a thousand times too slow, but you'll only go down once too fast

If you lose control of your truck or bus on a steep road the result could be deadly, you could kill or cause serious injuries to yourself or others.

BEFORE GOING DOWN A HILL

Reduce speed and select the correct gear before beginning the descent (for more information see page 60, 61 and 69). It is very important to select a gear low enough to maintain control of the vehicle.

If you try to gear down but you miss the gear, stop the vehicle with the brakes immediately, then select the correct gear. Attempting to coast while you struggle with the gears is very dangerous. Do not try to change gears while going downhill as you can lose control of the vehicle.

BRAKING GOING DOWN HILLS

Brake failure can be prevented by good driving techniques.

If you use the brakes to slow a vehicle travelling downhill it can cause overheating. This leads to brake fade, or brake burn-out in which the brake linings completely lose their grip and are no longer effective.

GOING DOWN HILLS

- Select a gear low enough to slow down the vehicle without the constant use of brakes.
- If you miss the gear when trying to gear down, stop the vehicle with the brakes immediately, then select the correct gear. It is very dangerous to coast while you struggle with the gears.
- Use auxiliary brakes to help control the vehicle speed. For more information on auxiliary brakes see page 79.
- Reserve your primary brakes for coping with emergencies in traffic conditions or sharp corners.
- If you need to use your brakes try to brake on straight sections of road where possible as this reduces the chance of skidding.
- Avoid fanning (repeatedly applying and releasing) the brakes as this leads to an increase in brake temperature and failure due to brake burn out. In air brake systems, fanning wastes compressed air, reducing the reserve available for an emergency.

You must select a low gear before commencing steep descents. Truck and bus drivers must obey **"trucks and buses use low gear"** signs by selecting a gear low enough to limit the speed of the vehicle without the need for the use of the primary brake (footbrake).

SAFETY RAMPS

If your truck or bus has lost its brakes or gained excessive speed on a steep descent it is unlikely that you will regain control of your vehicle.

Don't wait until it is too late, if you are at risk of losing control and a safety ramp is available you must use the safety ramp.

Safety ramps are constructed on hill descents to provide drivers who have lost control of their truck or bus an opportunity to slow and stop their vehicle safely away from other vehicles on the road.

The result of not using a safety ramp when it is needed is likely to involve serious consequences for the driver, the vehicle and other road users.

The main stopping force in a safety ramp is the drag caused as the vehicle sinks gently into a bed of gravel.

The effect on the driver is actually less than emergency braking, so the stopping force of the gravel should not result in injury to the driver and it is unlikely to cause damage to the vehicle.

A well restrained load should not move when in the safety ramp.

In South Australia safety ramps are located on the South Eastern Freeway descent (2),the Southern Expressway descent (1) and the old Eagle on the Hill descent.

Currently all safety ramps in South Australia are aggregate. This means they use a gravel bed to slow an out of control truck.

Using a safety ramp is not difficult. When entering a safety ramp:

- align the truck with the ramp and enter as close to the centre of the gravel bed as possible
- maintain the wheels in a straight line.

You don't have to drive to the end of the safety ramp, stop when you can.

When using a safety ramp:

- do not try to turn out of the safety ramp as this could cause the truck and trailer to jack-knife
- do not try to drive the vehicle out, this may cause damage to your vehicle. The removal of a vehicle from a safety ramp requires the use of tow trucks
- exit the vehicle and remain aware of traffic flow and avoid going to the road edge
- use the emergency phone or call 1800 018 313 direct. The Department of Planning Transport and Infrastructure will aid in organising the timely removal of your vehicle.

GOING UP HILLS

- Shift down early to prevent engine 'lugging'. Lugging is shuddering or excessive vibration in the engine.
- Use engine torque (the turning force available at the crankshaft) efficiently.
- Do not let engine revs fall below the maximum torque speed.
- Shifting down two or more gears at once may be necessary when going up a steep hill.

BEFORE ENTERING A SHARP CURVE

Reduce speed and select the correct gear before you enter the curve. The gear you select should have the engine revs near the maximum torque level as specified by the engine manufacturer, allowing you to accelerate smoothly out of the turn.

SLOWING AND STOPPING

When slowing or stopping a heavy vehicle it is best to use your primary brake and gears as required. However, when driving down a steep hill it may be necessary to remain in a low gear to control the vehicle's speed.

Never drive out of gear. This is extremely dangerous and can lead to loss of vehicle control and overheated brakes.

Animals and vehicles

A driver or passenger must not lead an animal while the vehicle is moving, this includes by tethering.

Animals that are being transported in the cabin should be seated or secured in appropriate areas. Drivers must not drive with an animal in the driver's lap.

Fires

To minimise the risk of fire:

- make regular checks of the vehicle during your trip
- follow recommended vehicle operating rules. See **section 7 Vehicle dimensions and loading**
- check the instruments and mirrors as part of your regular scanning routine.

If there is a fire in your vehicle:

- stop it well away from anything else which may burn
- notify emergency services (dial 000)
- use the correct fire extinguisher
- if the trailer is on fire, and it is safe to do so, uncouple the prime mover and move it away
- if the engine is on fire, try not to open the bonnet any more than necessary. Spray the fire extinguisher through louvres, or from the underside of the vehicle
- where the load is on fire in a van or box trailer, open the doors slowly and only far enough to let you use the extinguisher properly.

4 safe driving

WHAT YOU SHOULD KNOW ABOUT SAFE DRIVING

After reading this section, you should know:

- how to calculate a four-second crash avoidance space (following distance)
- how to control your speed going down hills
- what to do in case of brake failure
- the reasons for jack-knife and trailer swing
- how animals should be transported.

NOTES

heavy vehicle road rules

As a heavy vehicle driver it's your responsibility to know the road rules that apply to all vehicles, especially heavy vehicles.

SPEED LIMITS

In South Australia the maximum speed limit for a vehicle that exceeds a GVM of over 12 t or a bus GVM over 5 t is 100 km/h unless lower limits apply e.g. road trains.

For certain road conditions (e.g. sharp bend, steep descent, winding road), special speed limit signs may be posted for trucks, road trains and buses. You must not drive at a speed greater than the speed shown on the sign.

SPEED LIMITERS

Speed limiters are devices that limit a vehicle's maximum speed. If your vehicle falls into one of the following groups, it must be speed limited to 100 km/h.

A heavy vehicle or bus manufactured on or after 1 January 1987, being either a:

- truck having a GVM exceeding 15 t
- bus used to provide a public passenger service and with a GVM exceeding 14.5 t.

A heavy vehicle or bus manufactured on or after 1 July 1991 being either a:

- truck having a GVM exceeding 12 t
- bus with a GVM exceeding 5 t.

SPEEDING COMPLIANCE

The speeding compliance provisions of the Heavy Vehicle National Law (SA) places duties on parties in the supply chain to take all reasonable steps to ensure that their business activities, schedules or arrangements do not cause heavy vehicle drivers to exceed an acceptable speed limit.

These requirements complement existing chain of responsibility provisions for mass, load restraint, vehicle dimension and fatigue management, and apply to heavy vehicles with a gross vehicle mass of more than 4.5 t.

PARTIES IN THE CHAIN OF RESPONSIBILITY

There is a specific duty on off road parties to take all reasonable steps to ensure that their actions do not cause drivers to exceed speed limits. The parties in the chain include:

- employers
- prime contractors
- operators
- schedulers
- loading managers
- consignors
- consignees.

It is the performance of any of these functions that determines whether a person falls into one of the above categories rather than their job title or description.

In addition, a person may be a party in the chain in more than one capacity.

Intelligence Access Programs are not compulsory in South Australia

Vehicle owners and transport operators are accountable if they schedule journeys that require drivers to exceed speed limits or driving hours.

HEAVY VEHICLE DRIVERS

Drivers of heavy vehicles are required to obey the speed limits. Penalties on drivers failing to comply with speed limits include demerit points, licence suspension, cancellation or disqualification and fines.

GENERAL ACCESS VEHICLES

General Access Vehicles are heavy vehicles that comply with mass and dimension requirements and do not require a notice or permit to operate on the road network. These vehicles have general access to the road network unless the road is sign-posted otherwise. For more information refer to the publication Mass and Dimension Limits for General Access Heavy Vehicles Operating in South Australia www.sa.gov.au.

There are substantial fines and other penalties for owners and drivers who exceed the legal mass and dimension limits.

RESTRICTED AREAS FOR ROAD TRAINS AND B-DOUBLES

Road trains and B-doubles are Restricted Access Vehicles (RAV). RAV may only travel on defined networks. All approved routes and networks (maps or lists) are published on the website www.dpti.sa.gov.au/ravnet.

Road trains are authorised to operate as a RAV under the National Class 2 Heavy. **Vehicle Road Train Authorisation (Notice) 2014 (No.3).**

A road train must have this sign fitted to the front and rear.

B-doubles are authorised to operate as a RAV under the National Class 2 Heavy. **Vehicle B-Double Authorisation (Notice) 2014 (No.2).**

If a road or route is not listed in the Notice you can apply for access to the National Heavy Vehicle Regulator at www.nhvr.gov.au.

This sign must be fitted to the rear of vehicle combinations longer than 22 m.

B-doubles carry a greater payload than a single articulated vehicle and handle differently.

HEIGHT AND LENGTH LIMITS

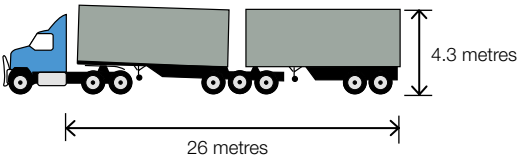
Heavy vehicle combinations are usually limited to a maximum overall length of 19 m. B-doubles that meet specified conditions can travel at up to 26 m in length. Other combinations such as road trains can operate in approved areas at greater lengths provided they meet specified conditions.

Generally heavy vehicles are limited to a maximum height of 4.3 m. Travel at up to 4.6 m high is permitted under various 4.6 m High Vehicle Notices which can be found at www.nhvr.gov.au.

Determining whether any particular route is approved for 4.6 m high vehicles must be done by reference to the appropriate 4.6 m High Vehicle Notices (South Australia and National) and the Restricted Access Vehicles (RAV) maps available on the website www.dpti.sa.gov.au/ravnet.

The RAV maps are marked with the approved 4.6 m routes.

Permits are also available to allow over height vehicles, subject to any required route assessments and specific conditions, to travel on specified roads in South Australia.



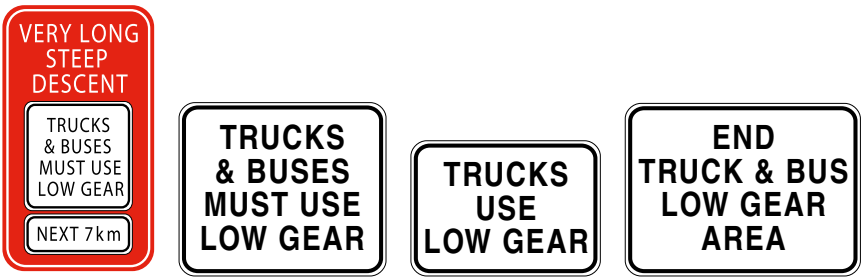
DRIVING DOWN HILLS

AUSTRALIAN ROAD RULE 108

Because of the gradient and length of some descents, truck and bus drivers must limit their speed to avoid brake fade/loss and to maintain control of their vehicle.

Australian Road Rule 108 means that when you are driving a truck or a bus on a road with the sign “trucks and buses must use low gear”, you must drive in a gear that is low enough to limit the speed of your vehicle without using the primary (foot) brake. Heavy penalties apply for breaching Australian Road Rule 108.

Look out for the warning signs that alert you to steep descents such as on the South Eastern Freeway approaching Adelaide.



As soon as you see the ‘trucks & buses must use low gear’ sign, you must start slowing down and switching to a low gear. This means you will be using the right gear before starting to descend, and will not need to use the primary brake when driving down the hill.

Australian Road Rule 108 applies despite other signed speed limits for the descent. You should always drive down hills at a safe speed appropriate for your vehicle and load. This may be below the signed speed limit for the descent.

Every vehicle is different. You should never operate a truck or bus without knowing how its braking systems work.

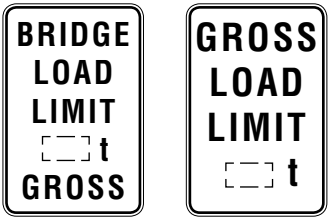
SOUTH EASTERN FREEWAY APPROACH TO ADELAIDE

The South Eastern Freeway is one of the most difficult and challenging routes into Adelaide. It's a long steep descent that ends at a major intersection. Drivers should make themselves aware of the nature of the descent particularly if it is their first time on this route. Because of this, in addition to Australian Road Rule 108, there are extra speed and lane restrictions that apply to trucks and buses that you should be aware of before making a decent into Adelaide. These include:

- heavy vehicles must be in low gear and speeds must not exceed 60 kilometres per hour (your safe maximum speed may be lower depending on your vehicle and load)
- all trucks and buses must use the left lane between Crafers and the Measdays Bridge exit
- trucks and buses may overtake on the South Eastern Freeway descent, (except between the Crafers Interchange and Measdays Bridge) but during the overtaking manoeuvre they must be in low gear and speeds must not exceed 60 kilometres per hour.

LOAD LIMIT SIGN

You must not drive past a BRIDGE LOAD LIMIT (GROSS MASS) sign or GROSS LOAD LIMIT sign if the total of the gross mass (in tonnes) of your vehicle, and any vehicle connected to it, is more than the gross mass indicated on the sign.



NO TRUCKS SIGN

Drivers of long or heavy vehicles, except buses, must not drive past a NO TRUCK sign unless the vehicle is equal to or less than the mass or length specified on the sign.

When the sign does not provide detailed information, no truck (i.e. GVM greater than 4.5 t) is permitted to drive past the sign, unless the drivers' destination lies beyond the sign and it is the only route.

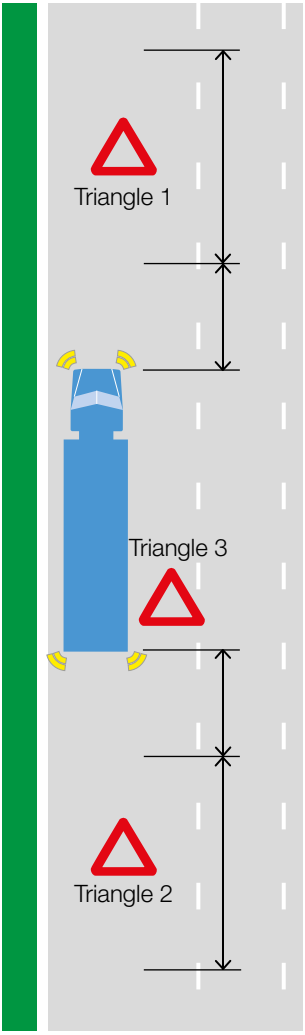
WHERE HEAVY VEHICLES CAN STAND OR PARK

Heavy vehicles (GVM of more than 4.5 t) or long vehicles (7.5 m long or longer) must not stop on a length of road outside a built up area, except on the shoulder of the road. In a built up area they must not stop on a length of road for longer than one hour (buses excepted). For more information on where vehicles can stand or park, refer to the The Driver's Handbook.

WARNING TRIANGLES

A vehicle or a vehicle and trailer with a GVM of more than 12 t, must carry three portable warning triangles for use if the vehicle stops, breaks down or the load being carried by the vehicle falls onto the road. At a place where:

- the speed limit is 80 km/h or more and the vehicle is not visible for 300 m in all directions, the driver must put warning:
  - triangle one between 200 - 250 m from the front of the vehicle or fallen load
  - triangle two between 200 - 250 m from the rear of the vehicle or fallen load, and
  - triangle three at the side of the vehicle, or fallen load, sufficient to warn other road users of the vehicle or fallen load, or
- the speed limit is less than 80 km/h and the vehicle is not visible for 200 m in all directions, the driver must put warning:
  - triangle one between 50 - 150 m from the front of the vehicle or fallen load
  - triangle two between 50 - 150 m from the rear of the vehicle or fallen load, and
  - triangle three at the side of the vehicle, or fallen load, sufficient to warn other road users of the vehicle or fallen load.



Requirements for placement warning triangles.

TRUCK AND BUS LANES

TRUCK LANES

Truck lanes are marked by the following sign. Trucks more than 4.5 t GVM must use these lanes.

BUS AND BUS ONLY LANES

Bus and bus only lanes are marked by the following signs, or by lane markings. A driver (except the driver of a public bus) must not drive in a bus lane. A public bus is a bus engaged in regular passenger services under the *Passenger Transport Act 1994*.

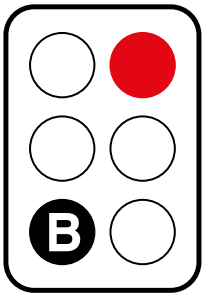
PRIORITY FOR BUSES

Other vehicle drivers should give way to a bus in front of them displaying the give way sign in a built-up area when the bus is about to enter or proceed in the lane or line of traffic.

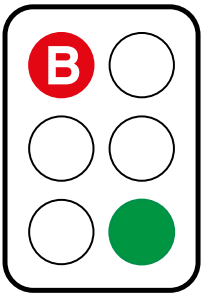
Bus drivers are still required to obey the road rules when entering the traffic.

BUS (B) SIGNALS

B signals separate buses and other vehicles at intersections with traffic lights. **B** signals are attached to the traffic lights and show a white **B** on a black background. Shortly before the usual traffic signals change to green the **B** signal lights up white. Buses may proceed in any direction unless signs or markings indicate otherwise.



White B means buses only go.



Red B means buses stay.

Green means other vehicles go.

5 heavy vehicle road rules

WHAT YOU SHOULD KNOW ABOUT HEAVY VEHICLE ROAD RULES

After reading this section, you should know:

- speed limits that apply to heavy vehicles
- Australian Road Rule 108, driving down hills
- restrictions that apply to heavy vehicles
- restricted access vehicles.

NOTES

knowing the vehicle

6

Heavy vehicles come in a variety of configurations. It's your responsibility to know your vehicle. Regular checks and services are required by law to minimise the risk of breakdown and ensure your vehicle is roadworthy.

ROADWORTHINESS

The driver and the owner/operator are responsible for a vehicle's roadworthiness. A roadworthy vehicle is a safe one that offers advantages to the driver and operator as well as other road users. Drivers, operators or a person who permits an unroadworthy heavy vehicle to be used can be heavily fined.

It is very important to check your vehicle is roadworthy. Pre-departure checks can save time and expense later on and reduce the chance of a crash resulting from mechanical failure.

To make sure that your vehicle remains roadworthy, you should carry out daily pre-departure checks and more 'in depth' weekly inspections.

Refer to the checklists in this section as a guide. This icon ☑ will help you locate them.

BODY/CABIN CONDITION

All door latches or hinges must be secure and working well. The cabin must be sealed from engine and fuel areas.

BRAKES

AIR BRAKE OPERATION

Most heavy vehicles have full air brakes. It is important that brakes are properly adjusted and well maintained.

When you apply the primary brake pedal you are opening a valve that allows pressurised air to flow to the brake chambers at each wheel. Braking effectiveness depends on how far you depress the pedal, unlike a car where the braking effectiveness depends on how hard you depress the pedal.

It is very important to check your brakes properly and regularly, and to refer to the manufacturer's manual.

To minimise risk of brake failure you should check manual and automatic slack adjusters daily, during your pre-trip inspection.

Use the following procedures for checking your brakes as a guide only and get a professional to service your brakes often.

☑ INSPECTION OF HYDRAULIC BRAKES

STEP 1: External check

1. Check for line damage and leaks.
2. Check wheel backing plates and brake hoses for any signs of leaks or damage, such as chafed hoses or pipes.
3. Check around the master cylinder and hydraulic oil reservoir for leaks. Also check that the reservoir is full.

STEP 2: System check

1. Check the feel of the brake pedal when you apply the foot brake. If the pedal sinks down further than usual or if it feels spongy, there may be a leak or air in the system.
2. Keep full pressure on the pedal - it should continue to be hard. If the pedal starts to sink, there may be a leak in the system.
3. Vacuum brakes - check booster retention with full vacuum and the engine off. When you apply the pedal it should stay down without resistance. The vacuum must be available soon after the engine is started with low vacuum available after 30 seconds and normal working vacuum after 60 seconds.
4. Check that the vehicle does not pull to one side when you brake.

☑ INSPECTION OF AIR BRAKES

STEP 1: Secure the vehicle

1. Put on the parking brake.
2. Switch off the engine.
3. Where manual valves are fitted to air tanks, drain daily.

It is illegal to discharge fluid on the ground as it can be washed down drains and is an environmental hazard.

STEP 2: Drain all air tanks

On vehicles with a dual circuit braking system, drain one system first. Check to make sure that only one gauge indicates no pressure, then drain the other system. If both gauges show no pressure after draining one system, do not use the vehicle before your brakes have been checked by a professional.

STEP 3: Refill the system

1. Start engine and run at fast idle - do not race the engine.
2. Check that:
   - any low air pressure warning signals (if fitted) are operating as a result of having no air in the system
   - the low air pressure warning signals (if fitted) operate at about 410 kPa
   - the time it takes for air pressure to build up from 0 to 80 per cent of maximum pressure limit (refer to manufacturer's specification) is not longer than five minutes.
3. Allow maximum pressure to build up and turn off engine.

STEP 4: System check

1. Chock the wheels and release the park brake.
2. Apply the foot brake fully and check the drop in air pressure on the gauge. The drop in pressure per minute should not exceed the following:
   - truck 20 kPa
   - truck and trailer 30 kPa.

3. Apply the foot brake another four times, holding it down on the fourth application. The pressure should not have fallen by more than half normal system operating pressure. If it has, do not use the vehicle before your brake system has been checked by a professional.
4. Recharge air system.

Step 5: Trailer check

1. Turn the engine off.
2. Disconnect the air hoses between the hauling unit and trailer (articulated vehicles and truck/trailer combinations). The trailer brakes must automatically come on and remain on for at least 15 minutes. This is to check if the breakaway system is operational.
3. Check the tractor protection system of the hauling unit after air has stopped being released from the hauling unit trailer air line fittings. If these fittings contain self-sealing devices, hold them open until no more air is released.
4. Check that:
   - air pressure is in excess of 300 kPa
   - primary brakes still work
   - spring brakes (if fitted) have not come on.

STEP 6: External check

1. Re-connect air hoses.
2. Apply the park brake.
3. Walk around the vehicle and listen carefully for air leaks. Be conscious that air discharge from air suspensions may occur during settling period.

STEP 7: Final check

1. Start the engine to recharge the air system.
2. Release and re-apply the park brake and walk around the vehicle again and listen carefully for air leaks.

These 'general checks' do not replace the need for thorough inspections of the systems.

ANTI-LOCK BRAKING SYSTEMS (ABS)

Maximum braking occurs when the wheels are just on the point of locking. However, if a wheel does lock and skidding occurs, braking is not effective and you may lose control of the vehicle.

Many trucks have an Anti-lock Breaking System (ABS), which is designed to stop wheel lock up and improve steering under heavy braking.

For best results when using an ABS equipped vehicle in an emergency situation, press the brake pedal down fully and allow the ABS to regulate braking for you. This allows you to have full steering control at the same time as maximum braking.

If the ABS fails in an emergency situation, the system reverts to its non-ABS state or normal brake operation. In this event, depress the brake pedal until the wheels are just on the point of locking (but not locked), this will maximise braking and assist you in maintaining steering control. This method of emergency braking also applies to vehicles without ABS.

PARKING BRAKE

When applied a parking brake must:

- be capable of holding the vehicle stationary on any slope up to a gradient of at least 15 degrees
- prevent it from moving under light throttle
- function by mechanical means such as springs.

ENGINE/EXHAUST BRAKES OR SPEED RETARDERS (AUXILIARY BRAKE)

These devices may be fitted to medium and large vehicles to supplement the vehicle's primary brake system. They will not stop the vehicle completely but may help to slow it down. They are not considered primary brakes as they act on the engine or drive train.

Three most common types are:

- exhaust brake
- engine brake
- electric, magnetic or hydraulic retarder.

Applying these brakes may cause a lightly loaded vehicle to skid or jack-knife on slippery roads.

The safe operation of your vehicle is your first priority so you should use your auxiliary brakes as required, however you should be aware your auxiliary brakes are generally noisier than the primary brake. If it is safe to do so try to avoid disturbing residents and reduce brake noise in built up areas by limiting the use of auxiliary brakes.

COUPLINGS

Prime mover/semi-trailers – Turntable mountings and other tow couplings must be secure and comply with Australian Standards for installation.

Other vehicles – All towbar, coupling and drawbar components must be in good working condition. Steps on performing uncoupling and coupling are covered at the end of this section (page 91 - 93).

DRIVING CONTROLS

All controls should function correctly and be regularly checked and maintained.

ELECTRICAL SYSTEM

Electrical wiring and connections, both inside and outside the vehicle, must be secure, damage-free and not exposed to excessive heat.

ENGINE

When running above idle speed, the engine must not discharge excessive crankcase fumes.

EXHAUST SYSTEM

The exhaust system must not have leaks due to damage, looseness or poor maintenance.

The exhaust system must not be too noisy.

SMOKE FROM ENGINES

Excessive smoke from vehicles is illegal, unpleasant and at times dangerous.

It can also lead to expensive engine repairs and time off the road.

Blue smoke normally indicates engine wear or damage. Black and grey smoke results from incomplete combustion and may be caused by a number of factors. These examples can usually be fixed during routine maintenance:

- blocked air filter
- obstruction of fuel filters or water traps with dirt, grit or fuel wax
- incorrect fuel pumps timing
- engine speed too high
- incorrect valve or tappet adjustment
- poor cylinder compression indicating leakage past valves or piston rings
- excessive back-pressure in exhaust system
- injectors misfiring or leaking
- faulty turbo chargers where fitted
- poor driving techniques.

NOISE POLLUTION

Noise can affect your physical health, cause nervous stress and annoy others. It adds to fatigue, lowers productivity and can also increase the risk of heart disease.

TYPES OF NOISE POLLUTION

- In heavy traffic flow each vehicle contributes to the general roar. Trucks contribute about half the noise energy from traffic - even though they are less than 10 per cent of vehicles on the road.
- There is also noise pollution from excessively noisy individual vehicles - these contribute more than their fair share to general traffic noise.

NOISY VEHICLES

Excessive noise can come from:

- deterioration of the exhaust system from corrosion
- fitting an unsuitable muffler
- engine modifications such as raising the maximum governed speed
- removing sound absorbent materials
- using the exhaust brake or a noisy retarder unnecessarily in built up areas
- body noise on hitting bumps in the road.

WHAT YOU CAN DO TO REDUCE NOISE

- Fit a good exhaust system.
- Beware of ‘cheapies’ -they can wear out faster and may not have a warranty. A noisy muffler does not mean higher performance or better fuel consumption. Tests conducted have shown that in many cases noisy systems were no better for backpressure or fuel consumption.
- Buy quality replacement mufflers. The manufacturer’s recommended part is usually the best for all-round performance as well as noise control.

GET YOUR TRUCK OR BUS TESTED FOR NOISE

Ask the muffler fitter to check that your new muffler has a low noise level. The legal noise limits vary according to GVM, manufacture date, type of engine and whether the exhaust pipe is vertical or horizontal.

FUEL SYSTEM

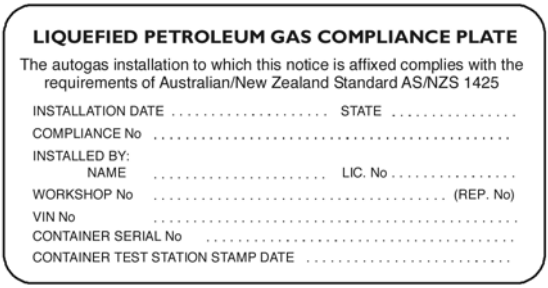
The fuel tank and lines must be secure and not leak. The fuel tank cap must be properly fitted.

LPG fuelled vehicles must be fitted with an AUTOGAS plate near the LPG fuel tank and display the appropriate plates or stickers on the front and rear number plates.

Compressed Natural Gas (CNG) is an alternative fuel commonly used in South Australia in buses. CNG vehicle must display the appropriate plates or stickers, be fitted with a compliance plate and a refuelling information plate near the filler connection. CNG cylinders need to be periodically inspected.

CNG retro reflective identification labels must be circular with a diameter of at least 35 mm and have CNG in capitals at least 10 mm high.

LPG retro reflective identification labels must be at least 25 mm high, 25 mm wide and have LPG in capitals at least 10 mm high.



LIQUEFIED PETROLEUM GAS COMPLIANCE PLATE

The autogas installation to which this notice is affixed complies with the requirements of Australian/New Zealand Standard AS/NZS 1425

INSTALLATION DATE ..... STATE .....
COMPLIANCE No .....
INSTALLED BY:
NAME ..... LIC. No .....
WORKSHOP No ..... (REP. No)
VIN No .....
CONTAINER SERIAL No .....
CONTAINER TEST STATION STAMP DATE .....

Example of a LPG compliance plate.

GEARBOXES

Heavy vehicles greater than 4.5 t GVM must use low gear on roads where a sign displays TRUCKS & BUSES MUST USE LOW GEAR. The gear chosen by the driver must be able to control the speed of the vehicle without use of the brakes.

Note: *As outlined in section 5 this is law and penalties apply for non-compliance (Australian Road Rule 108)*

There are three types of gear boxes.

NON-SYNCHROMESH GEAR BOX OR CRASH BOX

In this type of gear box, the matching of engine and road speeds depends entirely on your judgement and skill as there are no synchronisers in the gear box to help you. Double-declutching is essential while you are learning to use this type of gear box. A non-synchromesh gear box may commonly be known as a crash or constant mesh gear box.

SYNCHROMESH GEAR BOX

This type of gear box works in much the same manner as those in most modern cars. They are easy to use, as the synchronising of the gears is done by the gear box. Be aware that damage can be caused by forcing gear changes before the engine and road speeds are matched.

AUTOMATIC GEAR BOX

These work in much the same manner as in modern automatic cars.

DOUBLE-DECLUTCHING

Double-declutching is a method of changing gears that enables the driver to match the gears to the engine revs and road speed. Double declutching involves depressing the clutch pedal, shifting the gear lever to neutral, releasing the clutch pedal to match engine revs, depressing the clutch pedal and engaging the next gear.

LIGHTS AND INDICATORS

All lights and reflectors must work properly and their lenses must not be damaged. All rearward facing lights except reversing and indicator lights must be red.

WARNING LIGHTS

Parking brake and brake failure warning lights, where fitted, must work.

FLASHING LIGHTS

Flashing warning lights must be visible in normal daylight from a distance of 200 m to drivers approaching from any direction. A flashing light can be distracting to the driver so it must not be directly visible from the normal driving position of the vehicle to which it is fitted.

An amber/yellow flashing light warns road users of an obstruction to the free flow of traffic and can be used by over dimensional vehicles, public utility vehicles, tow trucks and motor breakdown service trucks.

A red and blue flashing light warns road users of the presence of an emergency service vehicle associated with a risk-to-life situation.

Red and blue flashing lights can only be fitted to police vehicles, ambulances, South Australian Metropolitan Fire Brigade, Country Fire Service and State Emergency Services (SES) vehicles.

A magenta/crimson flashing light warns road users of the presence of an enforcement vehicle.

REAR MARKING PLATES

All motor vehicles with a GVM exceeding 12 t and trailers with a GTM over 10 t must be fitted with retroreflective marking plates at the rear of the vehicle. Smaller trucks may have rear marking plates fitted too.

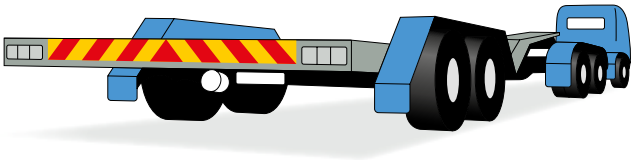
Prime mover and semi-trailer combinations must display rear marking plates at the rear of the semi-trailer.

Rear marking plates may also display DO NOT OVERTAKE TURNING VEHICLE in black letters 50 mm high as shown if the vehicle exceeds 7.5 m in length (see page 53 for details). Only use plates with approved retroreflective material. Do not modify or use alternative plates except those described previously.

Keep the plates clean and in good condition. Plates must not be covered or obscured by any vehicle equipment or load.

Rear marking plate rules do not apply to buses used only in urban areas.

The marking plate shown below may be an acceptable alternative if the first option is not practicable, provided it meets specific dimensions and locations. For further information refer to Standards Bulletin VBS 12 South Australia Road Traffic (Vehicle Standards) Rules 1999.



Typical fitting of alternative style class 2 plate (type 1).

RUST AND CORROSION

Any structure including chassis and frames must not have advanced rust - that is rust which would cause the metal to collapse in a crash. Any panel separating the driver or passenger from fuel or engine fumes must not have advanced rust.

SEATS AND SEATBELTS

Seat frames or mountings must be structurally sound with all seatbelts undamaged and working properly.

STEERING

The steering wheel must be undamaged and firmly attached to the steering column. All steering components must be secure, undamaged and not have excessive free play.

STRUCTURE

Any structure including chassis and frames must not be distorted, cracked or damaged.

SUSPENSION

Suspension springs must not sag or be modified and all suspension components must be aligned and undamaged.

WHEELS AND TYRES

All wheels must be properly attached to the vehicle with the right number and type of nuts and studs and wheel rims must not be cracked or bent.

All tyres must have at least 1.5 mm tread depth over 75 per cent of tyre surfaces which normally contact the road. All tyres must have correct air pressure. Manufacturer's recommendations are a good guide.

Regrooved tyres are acceptable provided such tyres (or retreads) are marked by their manufacturers as being suitable for regrooving. This only applies to heavy vehicles. Regrooved tyres must be retreaded to meet the requirements of an appropriate version of Australian Standards AS 1973.

WINDSCREEN AND WINDOWS

The windscreen directly in front of the driver or in the path of the windscreen wipers must not be cracked, scored or chipped.

Wiper blades, windscreen washers and demisters must be fitted and work well.

Pre-departure checks

All drivers are legally responsible for the safety and roadworthiness of the vehicles they drive. Before driving any vehicle you must ensure it is safe and roadworthy.

PRE-DEPARTURE SAFETY CHECKS

It is very important to check your vehicle before you drive, particularly items that have been reported defective. These checks can save time and expense later on, reducing the chance of component failure and subsequent loss of vehicle control, which may result in an accident.

These inspections should be conducted prior to shift start (regardless of the time of day) and always following the manufacturer's recommendations. The areas you need to cover, but not limited to, are listed in this section.

ENGINE COMPARTMENT

- Engine oil level ☐
- Engine coolant level ☐
- Clutch fluid level ☐
- Power steering fluid level ☐
- Screen washer fluid level ☐
- Ancillary drive belts ☐

ELECTRICAL

- Headlights: high and low beam ☐
- Driving and fog lights ☐
- Park lights ☐
- Indicators: left and right ☐
- Clearance lights ☐
- Tail lights and plate light ☐
- Brake lights ☐
- Hazard lights ☐
- School warning lights (buses) ☐

VEHICLE POSTURE, LEAKS AND LOAD

- Vehicle posture
- Fluid leaks
- Load properly secured (trucks)

COUPLING

- Air hoses and cables
- Security

VEHICLE BODY

- Body damage
- Mud flap(s) and guards-front and rear
- Cabin entry grab handles
- Door operation and locks
- Windows - operation and damage
- Bus rear window - emergency exit
- Cargo and luggage doors (if available)
- Mirror(s) - lens and security
- Plates and signs
- Fuel tanks
- Air tanks
- Toolbox(es)
- Other

BRAKES

- Foot and hand controls correctly adjusted and not worn
- Hydraulic brakes
- Brake fluid reservoirs must be full
- Hoses, pipes and cylinders leak free

Rigid pipes bracketed, free of rust and have grommets when passing through chassis frames . . . . . ☐

Air brakes . . . . . ☐

Compressors, drive belts, exhausters and reservoirs securely mounted and undamaged. . . . . ☐

Brake air lines, hoses, valve drain cocks and plugs secure, functional and leak-free. . . . . ☐

WHEELS AND TYRES

Rims (dents in flanges, loose lugs and nuts, rust trails, cracks in rim assembly) . . . . . ☐

Tyres (tread min legal depth of 1.5 mm) . . . . . ☐

Tyre inflation correct . . . . . ☐

Tyre cuts, damage, dual tyres touching, rocks lodged between duals. . . . . ☐

Spare wheel(s)/tyre(s) . . . . . ☐

GENERALLY

Registration label(s) current and attached . . . . . ☐

Windscreen wipers . . . . . ☐

Warning triangles . . . . . ☐

Fire extinguishers . . . . . ☐

Other . . . . . ☐

DEALING WITH PROBLEMS

If the vehicle you are driving has a maintenance or mechanical problem, you must make a written report on a form supplied by the owner.

Keep a record of all repairs and check that the fault has been fixed. Take it back to the repairer if the problem persists.

DEFECT REPORTING

If the vehicle you are driving has a maintenance or mechanical problem, inform the owner of all symptoms in a written report.

Uncoupling and coupling

Uncoupling and coupling a prime mover and semitrailer is a task which can lead to serious accidents, injury and vehicle damage. Follow these steps to perform the task correctly.

Note:

The procedure could change depending on the vehicles equipment or the actual vehicle configuration. The main emphasis must be placed on safety

☑ **UNCOUPLING A PRIME MOVER FROM TRAILER (HEAVY COMBINATION)**

- Check trailer is positioned on firm level ground.
- Apply the park brakes on the prime mover.
- Switch off emergency shut off valve. (if applicable)
- Chock the trailer wheels. (if applicable)
- Disconnect airlines and electrical lead.
- Lower landing gear and support as required.
- Release turntable jaws from the Kingpin.
- Raise the trailer until significant weight is raised off the suspension (approximately 40 turns in low gear). Drive the prime mover slowly forward until the two units are separated.

National Heavy Vehicle Regulator Safety and Compliance Alert

If you operate a dog trailer, pig trailer or road train dolly fitted with a drawbar, tow eye and auto couplings you're advised to inspect the coupling systems to ensure their integrity, with a particular focus on the tow eye fitment.

For more infornation visit **www.nhvr.gov.au**

COUPLING A PRIME MOVER TO A TRAILER (HEAVY COMBINATION)

- Align prime mover and trailer turntable to be within 30 cm of trailer skid plate.
- Check turntable jaws are open and aligned with the Kingpin.
- Check height of trailer skid plate.
- Return to cab and reverse the prime mover until the turntable is under the skid plate and stop before coupling.
- Raise landing legs clear of ground by approx. 1 cm.
- Connect the trailer by reversing the prime mover.
- Check trailer and prime mover security by applying the **tug test**. Switch on all lights before exiting cab.
- Visual inspection of the turntable to ensure safe coupling.
- Connect brake air-lines and electrical lead.
- Raise landing gear to full extent, and secure handle.
- Remove wheel chocks where applicable.
- Check operation of all lights and indicators on trailer and prime mover.
- Return to cab and charge trailer brake air system.
- Apply trailer brakes, release parking brake and perform a secondary **tug test**.

☑ UNCOUPLING A TRAILER FROM HEAVY RIGID VEHICLE

- Position the vehicle with the trailer aligned on firm level ground.
- Apply the park brake.
- Chock and secure the trailer wheels. (if applicable)
- Ensure the drawbar support leg is in place.
- Disconnect the supply of air to the trailer.
- Ensure brake air service is turned off and air lines disconnected, also 'safety chains', 'electrical line' and any 'auxiliary air line' (tailgate) is isolated and disconnected.
- Release the locking mechanism.
- Release the towing pin.
- Drive the vehicle slowly until the two units are separated.

☑ COUPLE TRAILER TO HEAVY RIGID VEHICLE

- Align the towing vehicle to the trailer.
- Align the towing vehicle coupling to the trailer Drawbar coupling
- Ensure towing vehicle coupling is unlocked.
- Ensure the drawbar is at the correct height.
- Reverse towing vehicle and complete the coupling.
- Apply the park brake.
- Perform visual checks to ensure that the coupling is secure and locked.
- Connect air lines, electrical lead and safety chains.
- Check that all the lights are operating.
- Secure the drawbar support leg.
- Check trailer and towing vehicle security by applying the **tug test**.

WHAT YOU SHOULD KNOW ABOUT MAINTENANCE

After reading this section, you should know:

- how to conduct a pre-departure check
- what to do should you become aware of a mechanical or maintenance problem
- how to inspect and check brakes and air pressure
- how to couple and uncouple a trailer.

NOTES

It is the responsibility of the driver and all parties in the chain of responsibility to ensure the vehicle does not exceed dimension or mass limits and that the load is appropriately restrained.

A load on a heavy vehicle must not be placed in a way that makes the vehicle unstable or unsafe and must be secured so it is unlikely to fall or dislodge. Refer to the ***Load Restraint Guide*** for detailed information, available through the National Transport Commission website www.ntc.gov.au/Media/Reports.

LOAD SHIFT

When moving, a vehicle's load can shift from forces caused by changes of speed, braking, accelerating, cornering, travelling over uneven road surfaces, and slopes. Load shift needs to be managed to prevent danger to any person or damage to any property.

HOW TO CARRY A LOAD SAFELY

To carry a load safely and prevent danger to any person, or damage any property you must:

- choose a suitable vehicle
- position the load correctly
- use suitable and adequate restraint equipment
- use appropriate driving methods.

VEHICLE DIMENSIONS

There may be access restrictions that may apply to your vehicle depending on the dimensions of your vehicle.

Certain types of commercial vehicles, and vehicles carrying specified commodities, may operate to a maximum 4.6 m high. These vehicles are only permitted on specified routes and are subject to conditions contained in the relevant gazette and associated code of practice or permit.

Information on gazettes can be found on the website www.sa.gov.au/heavyvehicles. Information on restricted access vehicle routes is available on the website www.dpti.sa.gov.au/ravnet.

MAXIMUM HEIGHTS

- Double deck bus 4.4 m
- Livestock vehicles have a height of 4.6 m
- All other vehicles 4.3 m

MAXIMUM WIDTHS

The maximum width limit for all vehicles is 2.5 m. When you measure the width do not include external rear vision mirrors, signalling devices and tyre pressure monitors.

For more information on maximum axle loads, including maximum allowable axle weights with ‘super single’ (wide profile) tyres, refer to the website www.sa.gov.au/heavyvehicles.

The right vehicle

To carry a load safely you must make sure the size of the load space and the condition of the platform are suitable for the job you want to do.

Vehicles carrying:

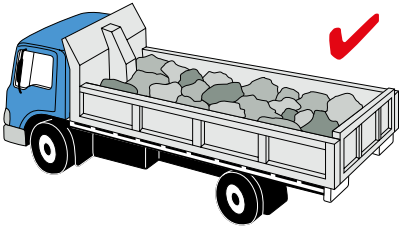
- long loads should be long enough to avoid excessive overhang and ensure good weight distribution for vehicle stability
- liquids and loose bulk material must be designed to completely contain the load and to minimise the effect of load movement.

To carry a load safely you must make sure the size of the load space and the condition of the platform are suitable for the job you want to do.

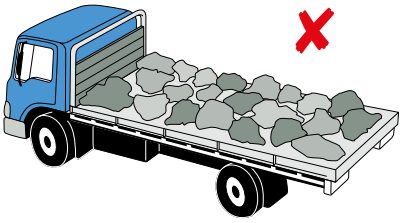
If your heavy vehicle and/or load exceed the requirements of the relevant Notice an access permit will be required. Contact the National Heavy Vehicle Regulator on 1300MYNHVR (1300 696 487) or info@nhvr.gov.au

CONTAINED LOADS

Tipper bodies are best to contain loose loads such as bush rock, sand, gravel etc. The most suitable vehicles for these loads have solid sides and tailgates such as tippers. The solid sides prevent the load from spilling. Sheets or tarpaulins should be used to cover loose loads to prevent them from being blown out of the truck. Liquid loads or 'fine powder loads' such as cement powder, flour etc are best contained in tankers.



A correctly contained loose load.

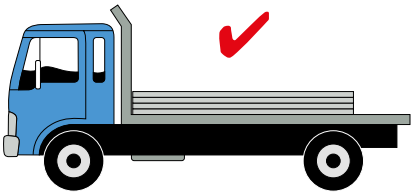


Loose loads need to be safely restrained as shown on the left.

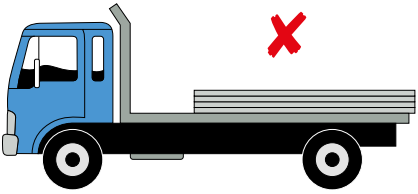
HEAVY LOADS

A long, heavy load can also make your vehicle difficult to handle. You can overcome this by using the right vehicle for the job.

An incorrectly loaded heavy load can take weight from the front wheels and make steering difficult. On rough roads, the truck may pivot on its rear wheels, lifting the front wheels entirely off the road.



The load weight is well positioned and evenly distributed.

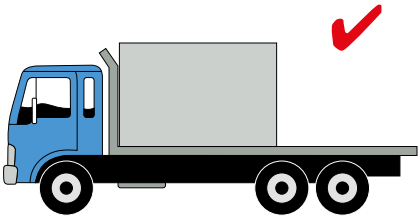


The load is dangerously positioned.

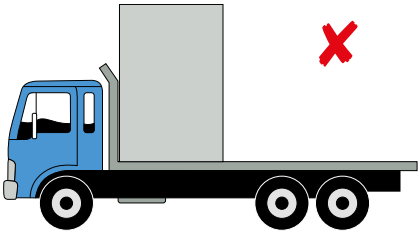
HIGH LOADS

These are loads with a high centre of gravity. It may even tip over when cornering. High loads should be carried on vehicles with a low platform whenever possible such as a drop frame trailer or low loader.

The overall height of a loaded vehicle must be checked to make sure that it clears any overhead bridge or other obstruction on your route. It must not exceed 4.3 m in height unless you are carrying the relevant gazette notice and complying with the code of practice or have a special permit.



The load weight is well positioned and evenly distributed.



The load is dangerously positioned with the centre of gravity too high.

TANKERS

Bulk liquid loads should be carried in tankers. Tankers have the same weight distribution problems as other loads as well as the special problems of a fluid load.

The tank is divided into compartments which are filled separately. Be aware that difficulties can be caused by the partial filling of compartments. A part-filled compartment allows the liquid to move from side to side (cornering) and rear to front (braking). The shift of the cargo's centre of gravity is a safety concern because it makes the vehicle easier to rollover. Try to empty one compartment completely before you start to empty another one.

Always empty the centre compartments first and work outwards to keep weight evenly balanced over the front and rear axles of the vehicle.

There is still some space left when the compartment registers full - this reduces spillage and allows for expansion of the fluid.

This small space also allows the fluid to move but much less than if the compartment has been partly emptied. Even minor movements are sometimes enough to make your vehicle unstable and perhaps cause a rollover.

Avoid swerving and slow down before any curve or corner.

CLEARANCE SIGNS AND LOW CLEARANCE SIGNS

You must always obey **clearance** and **low clearance** signs.

You should ensure that you know the total height of your vehicle and its load before driving it on a road. You must also obey clearance signs and low clearance signs that impose restrictions on the height of vehicles that can travel near, under or through an asset e.g. under a bridge, overpass or through a tunnel.

You should also ensure that prior to any journey you plan your trip to identify any restrictions that may affect your proposed route.

If your vehicle exceeds 4.3 m in height you must either ensure that the vehicle meets the requirements for travel under a relevant gazette and associated code of practice or obtain a permit. Information can be found on the website www.sa.gov.au/heavyvehicles.

Loading

Restrictions on the mass and loading of vehicles and vehicle combinations have been set by the Heavy Vehicle (Mass, Dimension and Loading) National Regulation and apply to any vehicle with a GVM of more than 4.5 t or any vehicle combination with a GCM of more than 4.5 t.

The limits on the mass or weight of your vehicle (including the load) are set to increase safety and reduce wear on roads and bridges. Vehicle manufacturers set gross mass (GVM/GCM) limits for each vehicle model.

A vehicle must not be operated at a mass limit that will exceed the:

- manufacturer's GVM/GCM
- manufacturer's individual component rating (i.e. axles, springs, tyres etc)
- statutory mass limits or overall axle spacings.

It is the operator's responsibility to make sure these limits are not exceeded.

Part of your vehicle registration fee covers the cost of road wear and maintenance. National charges are calculated using the vehicle type, the GVM on the compliance plate, number of axles and the nominated configuration (usage) of the vehicle. The penalty for overloading a vehicle may exceed $2200 for an individual and $11,000 for a corporation.

THE COST OF OVERLOADING

Millions of dollars are spent every year to repair damaged roads and bridges. This is not covered by registration fees or overloading fines as they only cover a small part of this cost.

Even a little overloading causes a lot of damage to roads and bridges, which everyone must pay for. It is very important for the future of South Australian roads and the heavy vehicle industry that you do not overload your vehicle.

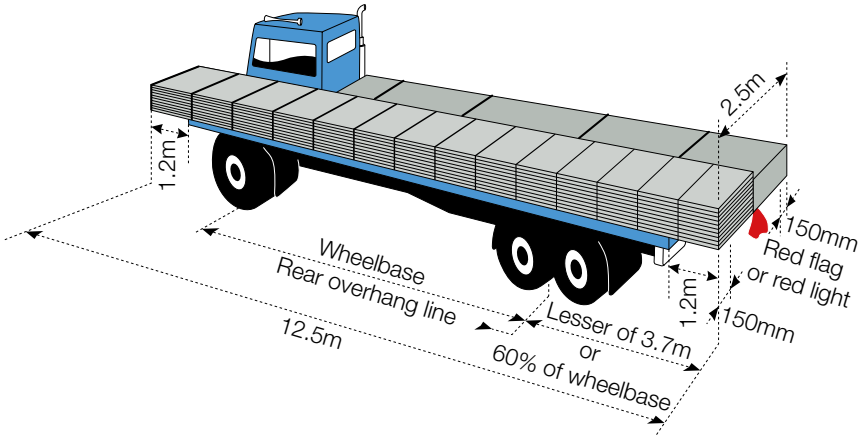
PROJECTING LOADS

This information applies to vehicles with a GVM over 4.5 t.

A load on a vehicle must not project more than 1.2 m in front of the vehicle, or more than 150 mm from the side of a vehicle. The vehicle width, including the load, must not be greater than 2.5 m.

A warning signal must be attached to the rear of the load in daytime if it:

- projects more than 1.2 m behind the vehicle
- overhangs the rear of the vehicle so that the end of the load cannot be seen easily from behind
- is on a pole type trailer.



This diagram shows the allowable projected load limits.

The warning signal must be a brightly coloured red, red and yellow or yellow flag or a piece of rigid yellow material with each side at least 300 mm long. At night-time the warning signal must be a red light which can be seen for 200 m.

For side projection (width of vehicle over 2.5 m) four brightly coloured red, red and yellow or yellow flags with each side at least 450 mm long must be attached at the front and rear of both sides of the vehicle.

Loads not easily seen can require additional warning measures e.g. projecting loads less than 500 mm thick from top to bottom.

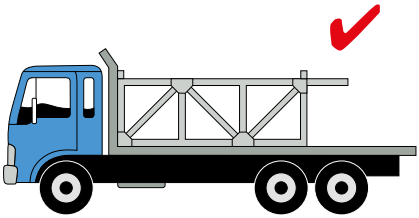
A load on a vehicle must not project in a way that is dangerous to any person or likely to cause property damage, even if all dimension and warning requirements are met.

For vehicles over 4.5 t GVM, the rear overhang, including the load, must not exceed 60 per cent of the vehicle's wheelbase or 3.7 m, whichever is less.

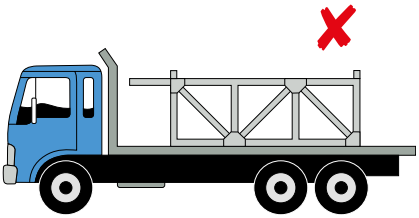
If the size of the vehicle, or vehicle with load, is more than the allowable length, you must get a permit from the National Heavy Vehicle Regulator. The maximum allowable length for a rigid vehicle including any overhanging load front or rear is 12.5 m. The maximum allowable length for an articulated or heavy trailer combination vehicle, including any overhanging load, is 19 m. See Vehicle dimensions and axle loads in this section (see page 96, 97, 100).

DANGEROUS PROJECTIONS

A load with any potentially dangerous projection should be placed to minimise risk to the driver or any other person, should the load shift during braking or a collision.



The potentially dangerous projection is correctly positioned to minimise the risk of load shift.



The load is incorrectly positioned and projections are potentially dangerous in the event of load shift.

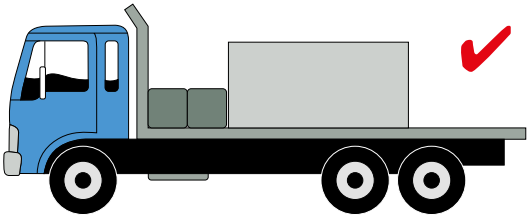
Security of the load on trucks must meet performance standards as set out in the Load Restraint Guide available from Service SA for a fee and online (free) from the National Transport Commission.

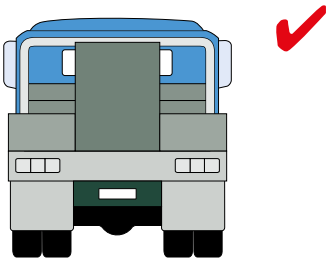
LOAD DISTRIBUTION AND ARRANGEMENT

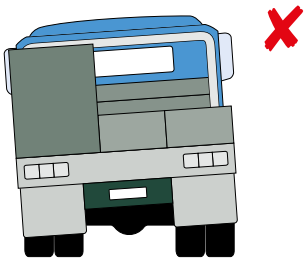
An overloaded vehicle is unsafe to drive, inefficient to operate and damages the road.

Poor load distribution can cause:

- loss of steering
- loss of traction under power
- wheel lock-up under braking resulting in a jackknife or trailer swing
- vehicle roll-over on a roundabout or when changing lanes.







The weight of the load needs to be evenly distributed.

It is very important to have even distribution of maximum permitted weight because:

- maximum permitted axle loads will not be exceeded
- driving control is improved through the wheels
- the chassis frame will not be damaged by twisting or bending.

POSITIONING THE LOAD

For stability, the load should be spread close to the centre line of the vehicle. You should stack the heavier things at the bottom. Loading a heavy item on one side may result in twisting and stress on the chassis frame, or overloading of axle housings, wheel bearings and tyres. This could be bad enough to:

- allow the brakes to lock on the wheels on the lighter side
- cause flat spots on the tyres
- skid on a wet surface.

Problems may occur in a rigid vehicle, when a very heavy small load is placed against the headboard. This could cause:

- the chassis frame to bend, perhaps permanently
- overloading in the front tyres
- irregular tyre wear or even a blowout.

Avoid these problems by placing any small heavy load just ahead of the rear axle.

If you need to place a load back from the headboard to distribute weight, the load should be blocked so that it cannot move forward. Unless it is blocked, even the heaviest load will move forward if you stop suddenly.

SECURING THE LOAD

The following information is a guide only. Detailed information on securing your load is available in the Load Restraint Guide.

The way your vehicle is loaded is very important for your safety and for the safety of others. You are legally responsible for your load and any damage or injury it may cause.

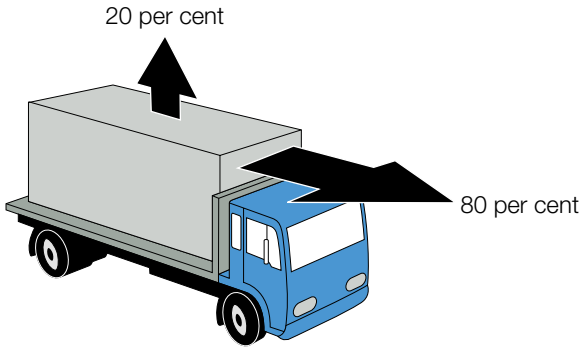
Driving over bumps in the road, around curves and corners, and accelerating and braking can cause your load to move. The force of an impact can move a load that is unstable or not properly secured and you can lose control of your vehicle.

The weight of your load should also be evenly distributed so you can control your vehicle properly.

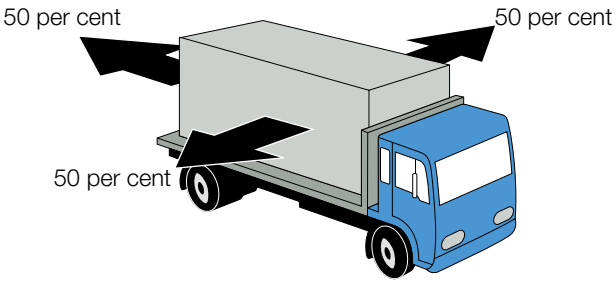
Load restraints

A load restraint system on a vehicle should be capable of restraining the following percentages of the weight of the load from shifting:

- 20 per cent upward
- 80 per cent forward
- 50 per cent rearward
- 50 per cent sideways.



20 per cent upwards and 80 per cent forward.



50 per cent rearward and sideways.

Loads must be secured to prevent:

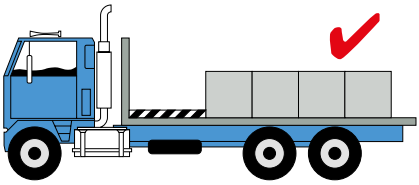
- any part of the load hanging over or sticking out of the vehicle in a way which could hurt someone, damage property or cause a hazard to other road users
- any part of the load being dislodged or falling out of the vehicle.

It is against the law to drive a vehicle where the load is not secured. You can stop your load from moving by:

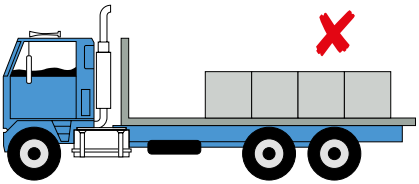
- lashings secured to the vehicle chassis, including:
  - cross bearers
  - outriggers
  - tie rails and similar arrangements
- blocking arrangements such as:
  - load racks
  - headboards
  - bulkheads
  - stakes in pockets
  - transverse beams
  - shoring bars
  - chocks, tonnage, etc
- containing the load by using a truck with solid sides and tailgate, a tanker or a shipping container
- covering loose loads such as sand or gravel with sheets or tarpaulins.

BLOCKING

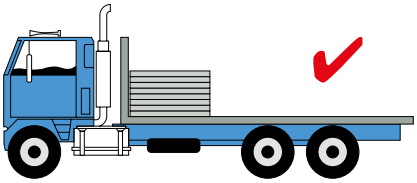
The most important part of the blocking is the headboard or bulkhead. It is best to put most loads right against the headboard to prevent the load acting like a battering ram if it moves forward. If other restraints fail in a sudden stop, the load might break the headboard. This could damage the cabin and leave you severely injured.



The headboard and extra blocking can be used to stop load shift.



The load is not secured and could shift.



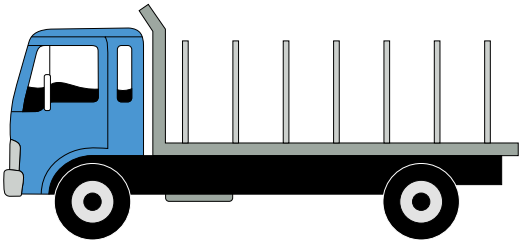
The load is correctly blocked against the headboard.

Many vehicles carry loads that could crush the driver's cab if the load shifted forward under sudden braking. If you carry loads such as coils, sheet steel, steel pipes, structural steel and timber, you should have a solidly constructed bulkhead instead of a normal headboard.

When carrying a load of metal bars, it is particularly important to ensure that all bars are secured and unable to move out of the stack. An unsecured bar that moves has the potential to go through the bulkhead.

STAKES IN POCKETS

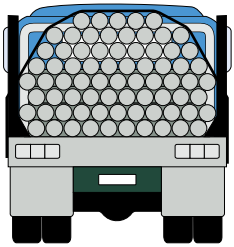
These or stanchions may be used in conjunction with lashings to prevent long rigid loads such as pipes, logs etc from moving sideways.



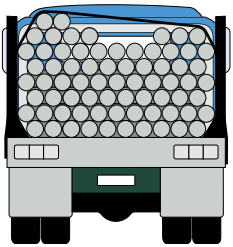
Stakes or stanchions should be used to prevent sideways movement.

CROWNED LOADS

It is important that long rigid loads such as pipes, logs etc be crowned to ensure the load is lashed securely without 'gaps'. Gaps in the load may allow it to move and cause the lashings to become loose.



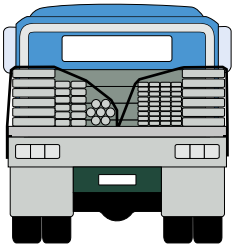
To restrain movement in loads such as pipes, they need to be crowned and have no gaps.



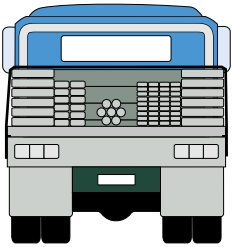
The gaps in this load can cause potentially dangerous load shift.

DIVIDED CROWNED LOADS

In some cases it may be necessary to divide the load into two or more stacks to crown it effectively. This can be achieved by attaching the lashings along the middle of the deck.



A load that is divided to minimise the chance of movement.



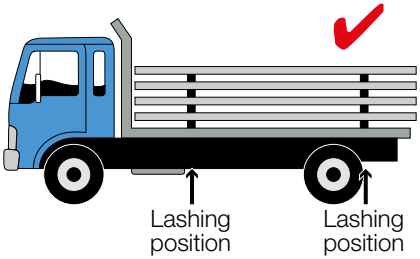
A load with substantial gaps that would allow potentially dangerous movement.

DUNNAGE

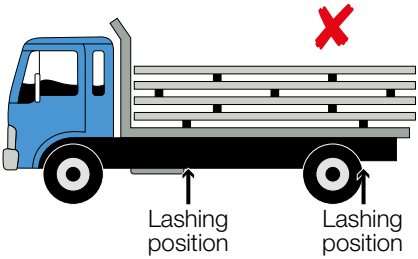
This is packing placed under or between parts of the load. It is used to allow loading and unloading with forklifts or lifting slings. It is usually made of rectangular or square hardwood or softwood and must be strong enough to support the weight of the load placed upon it.

A load with multiple layers or rows must have all dunnage placed directly above the bottom dunnage. Tie-down lashings must only be placed at these positions along the load to ensure that the lashings do not loosen or over tighten if the vehicle chassis flexes.

Long rigid loads such as large diameter steel pipes must be supported in two positions to allow the vehicle to flex. Additional dunnage (and lashings) will need to be used along the lengths of more flexible loads such as plastic pipes etc.



Dunnage needs to be vertically aligned to minimise movement when under lashings.

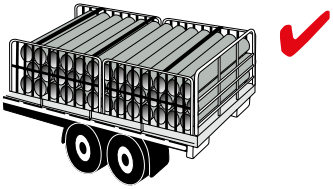


The dunnage is placed irregularly and could loosen or over tighten lashings when the vehicle is operating.

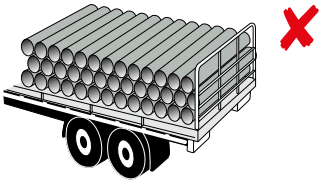
GATES/FENCING

A load can also be secured with side gates, tailgates and other blocks. The side gates have to be strong enough not to be forced out by the weight of the load. Other blocks should be secured and braced. You should close and lock the tailgate of your vehicle unless the load is too long. Never carry any separate part of the load on the tailgate.

Where small pipes or logs are carried, suitable side gates or other containment methods should be used to prevent sideways movement.



A load secured from sideways movement by gates and fencing.

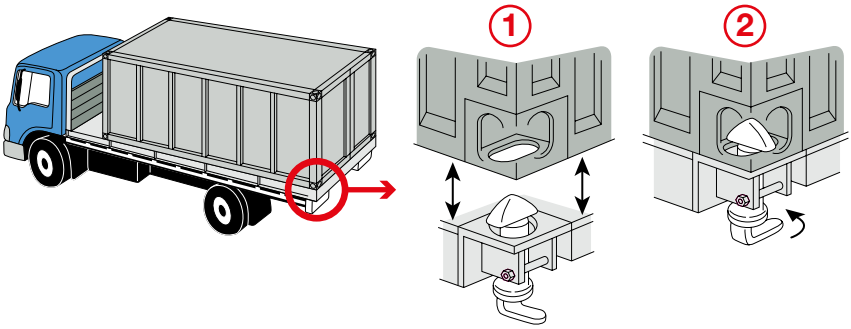


A load not secured from sideways movement.

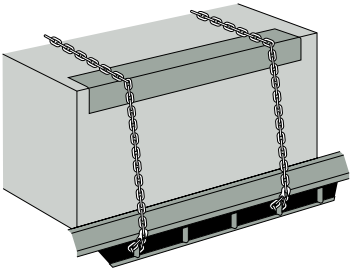
CONTAINERS

Vehicles used to carry containers must be equipped with special devices known as ‘twist locks’. Containers have special corner-pieces which fit into the twist locks on the vehicle. They can then be locked into place. Sometimes frames with twist-locks can be attached to the vehicle. These frames need to be securely bolted to the chassis.

A container is not properly secured unless the twist-locks are used. This applies whether the container is full or empty. A vehicle without twist locks should not be used to carry containers. Decommissioned containers (those not carrying a load) can be chained to a vehicle for transport.



A twist lock used to secure a container.

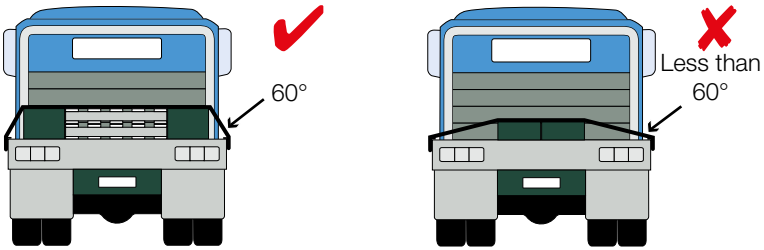


A correctly lashed and fastened load.

LASHINGS

These and other fastening devices such as dogchains, cables, clamps and load binders must be in good condition. A chain is not good enough if even one link is deeply gouged, pitted or worn. Make sure the lashings are tight enough to stop any movement. Make sure the type of lashing you use is strong enough to fasten in place.

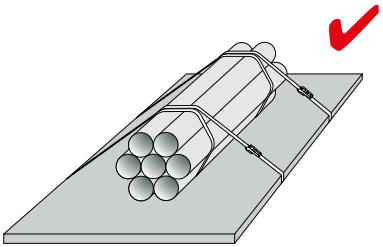
The lashings should be protected from any sharp edges on the load or on the vehicle. When using more than one lashing, secure them separately so if one line fails the others will hold.



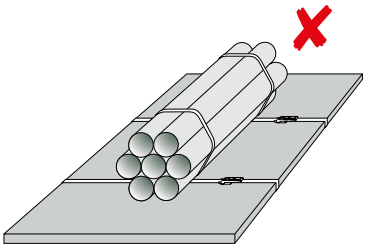
The greater the angle of the lashing to the load the greater the lashing tension will be. Angles less than 30° are not recommended.

BELLY WRAPPING

Belly wrapping may be used to prevent large diameter pipes or bars from rolling. When belly wrapping, the lashings must be looped over the top of the load to provide tie-down. Lashings that are looped underneath a rounded load will not prevent the load from rolling.



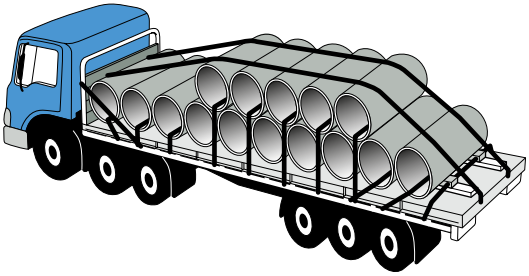
The lashings must be looped over the top to prevent rolling.



The load could roll dangerously.

LARGE PIPE LOADS

When placed across the vehicle, all upper layer pipes in the load should be individually tied down so that all pipes in the load are positively clamped to prevent sideways movement.

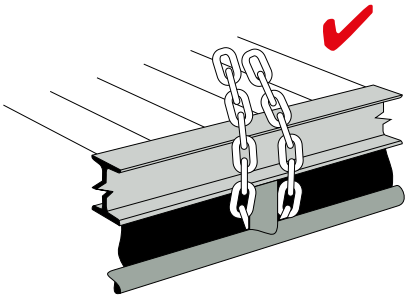


All pipes need to be clamped to prevent sideways movement.

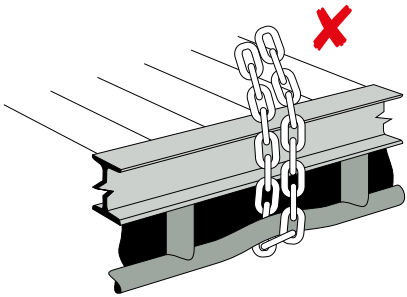
LOAD ANCHORAGE POINTS

You cannot rely on traditional rope hooks or rings to hold anything other than light loads.

Vehicles should have load anchorage points fixed to the vehicle so that the main chassis frame takes the force of the load.



The chassis frame should be used as an anchorage point.



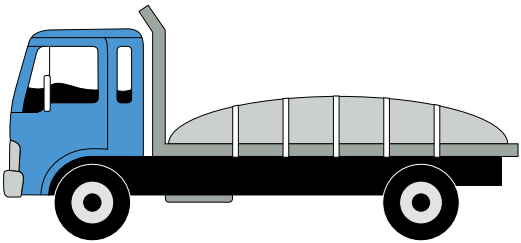
You should not rely on non-anchorage points to take anything other than light loads.

FRICTION

Friction cannot stop your load from moving but it can be a great help. To make the best use of friction, the base of the load and the platform should be kept clean, dry and free from grease. A slippery platform surface is always dangerous.

SHEETS AND TARPAULINS

Except in the case of very light bulk loads, sheets and tarpaulins are not strong enough to hold down loads, they only protect the load from the weather. Sand, gravel, etc. should always be covered.



Secured sheets and tarpaulins can be used to protect loads from the weather.

Dangerous goods

Information on the transport of dangerous or explosive goods can be found in the following publications:

- *The Australian Code for the Transport of Dangerous Goods by Road and Rail* version 7.3 (ADG Code) available from the National Transport Commission website at www.ntc.gov.au

☑ **IN THE EVENT OF A CRASH YOU MUST:**

1. call the police or fire brigade on 000
2. not touch spilled chemicals and avoid breathing fumes and dust
3. wash off any chemicals with plenty of water if you are splashed
4. keep people away from the crash site
5. show the transport documents and emergency procedure guide to the police or fire brigade when they arrive.

If you are carrying a load that includes any amount of dangerous goods in a receptacle (where the receptacle can hold more than 500L or 500kg of dangerous goods), it is a requirement that:

- The you have a current Dangerous Goods Driver's licence issued by SafeWork SA or an interstate Competent Authority
- The vehicle is licenced by SafeWork SA, or an interstate Competent Authority, to carry a load of dangerous goods of the required Class or Division
- A Dangerous Goods Vehicle licence label, issued by SafeWork SA is attached to the vehicle in a conspicuous position.

For details on dangerous goods licences, refer to SafeWork SA www.safework.sa.gov.au or contact the SafeWork SA Office 1300 365 255.

RISKS

Many vehicles carry dangerous loads including substances which are flammable, toxic, infectious, radioactive or corrosive.

A crash, leakage or fire involving a vehicle carrying dangerous goods could cause extensive damage, death or serious injury to many people.

Vehicles carrying flammable loads may be required to be fitted with a switch that isolates the battery and so reduces the risk of fire. Dependant on the nature and size of the load, the vehicle may also be required to have a vehicle monitoring system as part of its transport security management plan. For further details contact SafeWork SA on 1300 365 255 or visit www.safework.sa.gov.au.

In the event of a leakage or accident follow the procedure outlined on your emergency procedure guide. The procedure varies for different materials so make sure you carry the right card.

SafeWork SA can provide you with professional, technical and scientific information and advice. Call 1300 365 255.

☑ CHECKLIST FOR DANGEROUS GOODS:

Transport documentation, Emergency Information

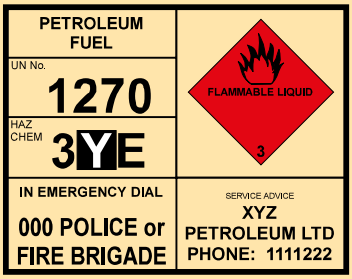
Make sure you have dangerous goods transport documents that comply with Chapters 11.1 (transport documentation) and 11.2 (emergency information) of the Australian Code for the Transport of Dangerous Goods by Road & Rail (the ADG Code) accessible on line at the National Transport Commission website www.ntc.gov.au.

Placard requirements

Placardable unit is a vehicle carrying a load of dangerous goods that requires a label or Emergency Information Panel (placard) to provide a warning that the contents of the load are dangerous goods and present risks. A vehicle carrying a placard load of dangerous goods requires:

- A Class/Division label (diamond) displayed to the front of the vehicle or
- An Emergency Information Panel (EIP) displayed at the rear of the vehicle, tank or container and each side of the trailer or rigid vehicle for transport units.

Refer to Chapters 5.2 and 5.3 of the AGD Code for more information.



An example of a petrol fuel Emergency Information Panel

Carry appropriate emergency information

You must keep the Emergency Procedures Guide, a 'product' card which gives a guide to the emergency procedures that apply to the particular hazardous substance which you are carrying, together with the Vehicle Fire Card, on or near the inside of either cabin door. You are permitted to carry the Initial Emergency Response Guide instead of carrying both the product card and vehicle fire card as the guide provides similar information to the cards. The guide book and cards are published by Standards Australia.

Tank inspections

Inspect the tank or other containers before and after loading and frequently throughout the journey.

Hatch inspections

Inspect the hatches of the tanker and make sure the seals are in good condition. Make sure that all filling points are closed. If they are not, the tank could leak in a rollover. The vapour from an open filling point could impair your driving.

Safety and emergency equipment

Dangerous goods safety and emergency equipment that must be carried on the vehicle includes:

- Appropriate fire extinguishers for the vehicle and Classes and/or Divisions of dangerous goods being transported
- Three double-sided reflector signals, clean and in good condition, that comply with the requirements of Australian Standard 3790
- Items appropriate to the Classes and/or Divisions being transported are listed in Table 12.2 of the ADG Code.

Safety and emergency equipment must be carried in a readily accessible position in the vehicle. Respiratory equipment required for escape purposes must be kept in the cabin.

Heavy vehicle road access

Restricted Access Vehicles (RAVs) are vehicles which, laden or unladen, exceed the general access dimensions defined in the Heavy Vehicle (Mass, Dimension and Loading) National Regulation.

If RAVs exceed the dimensions for general access the RAV may be eligible to operate under a notice applicable to that vehicle. Notices provide for greater dimension/mass limits with additional considerations and route restrictions.

Notices are published on the National Heavy Vehicle Regulator website and can be accessed at www.nhvr.gov.au. RAVs with dimensions or mass over the limits stated in the relevant notice may still be eligible to obtain access to specified South Australian roads through a specific permit. Additional information on the operation of heavy vehicles in South Australia can be found at www.sa.gov.au, www.dpti.sa.gov.au/onroad, or www.dpti.sa.gov.au/ravnet.

For more information on heavy vehicle access contact the Special Permits Unit on 1300 656 371 or the National Heavy Vehicle Regulator on 1300 MYNHVR (1300 696478) or info@nhvr.gov.au.

7 vehicle dimensions and loading

WHAT YOU SHOULD KNOW ABOUT HEAVY VEHICLE DIMENSIONS AND LOADING

After reading this section, you should know:

- the maximum height and width for heavy vehicles
- how to distribute a load evenly and safely
- general restraint and loading requirements for different types of loads
- what you need to do if carrying dangerous goods.

NOTES

penalties

Under South Australian laws, you can be penalised for traffic offences.

Traffic offences

Penalties for breaking the traffic laws include fines, disqualification from holding or applying for a licence, licence cancellation, refusal or suspension. For a very serious offence like drink driving, you may be fined, disqualified from driving or even go to prison.

DEMERIT POINTS

If you commit a traffic offence you may incur demerit points against your driver's licence.

Demerit points remain on your licence record for three years from the date of the offence.

DEMERITS WARNING NOTICE

If you accrue six or more demerit points, a warning notice is sent to you (unless you have an interstate address) warning that you are close to being disqualified from driving.

The warning notice shows the:

- offence details
- date the offence was committed
- number of demerit points for each offence.

LOSING YOUR LICENCE FOR DEMERIT POINTS

If you accumulate 12 or more demerit points in any three year period, you will be disqualified from holding or obtaining a driver's licence or permit. Each three year period is calculated based on the dates the offences were committed.

If you accumulate:

- 12 to 15 points you lose your right to drive for three months
- 16 to 20 points you lose your right to drive for four months
- more than 20 points you lose your right to drive for five months.

Demerit points are incurred whether the offence is committed in South Australia or interstate.

THE GOOD BEHAVIOUR OPTION

In lieu of serving the demerit point disqualification, you may be eligible to apply for a good behaviour option. Information on the good behaviour option is provided on the disqualification notice.

SPEEDING OFFENCES

Automatic licence suspension or disqualification periods apply to drivers who commit a serious speeding offence:

- driving more than 45 km/h above the speed limit - suspension or disqualification for six months. Police can suspend a licence at the roadside.

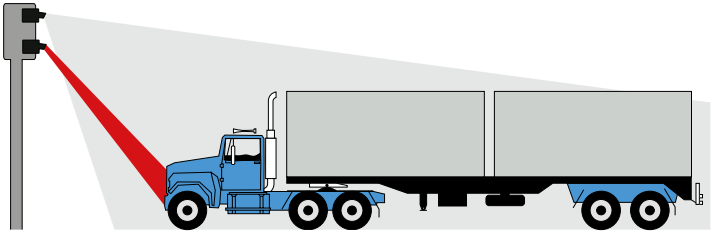
SPEED LIMITER OFFENCES

Specified heavy vehicles are required to be fitted with a speed limiter that limits the vehicle to a maximum speed of 100 km/h. A heavy vehicle fitted with a correctly operating speed limiter is ‘speed limiter compliant’. A heavy vehicle operator commits a speed limiter offence if a vehicle that is required to be fitted with a speed limiter is not speed limiter compliant and penalties apply.

SAFE-T-CAM

The Safe-T-Cam is an automated monitoring system designed to reduce the incidence of heavy vehicle speeding and driver fatigue. It can determine if a heavy vehicle has travelled at excessive average speed, or has travelled beyond prescribed driving hours, between two or more of the numerous Safe-T-Cam sites located throughout SA.

Safe-T-Cam forms part of a coordinated heavy vehicle enforcement program that consists of Department of Planning, Transport and Infrastructure inspectors, heavy vehicle checking stations, periodic vehicle inspections and police enforcement.



Safe-T-Cam monitors speed fatigue of heavy vehicle drivers.

HEAVY VEHICLE CHECKING STATIONS

Heavy vehicle checking stations are permanent Department of Planning, Transport and Infrastructure facilities, located along major transport routes, where heavy vehicles with a GVM of more than 4.5 t may be stopped and inspected to see that they meet safety and roadworthiness standards and that their drivers are complying with road transport laws.

ALCOHOL AND DRUG OFFENCES

It is against the law to drive while under the influence of alcohol and drugs, including some prescribed medicines.

DRIVING UNDER THE INFLUENCE

You do not have to be over the "legal" limit of the prescribed blood alcohol concentration for it to be an offence to drive. It is an offence to drive or attempt to put a motor vehicle in motion, while under the influence of alcohol (or drugs) as you will be unable to exercise effective control of the vehicle. This is known as driving under the influence (DUI) and it applies to driving under the influence of alcohol or drugs.

If you are found to be driving under the influence of drugs, for a first offence you may be fined up to $1600, or go to prison for up to 3 months and be automatically disqualified from driving for 12 months. Heavier penalties apply for second or subsequent offences.

It is against the law to drive with a presence of an illicit drug in your system. These drugs include THC (the active component of cannabis), methylamphetamine and ecstasy. For a first offence and conviction, you can be fined a maximum of $1300 and get an automatic disqualification of 3 months. Heavier penalties apply for second and subsequent convictions.

PRESCRIBED QUANTITY OF ALCOHOL OFFENCES

It is also an offence to drive with a blood alcohol concentration (BAC) over the legal limit:

Category 1 – less than .08 g of alcohol in 100 ml of blood.

Category 2 – less than .15 g but not less than .08 g of alcohol in 100 ml of blood.

Category 3 – .15 g or more grams of alcohol in 100 ml of blood.

As outlined in Section 3 your blood alcohol content must be zero when you drive a:

- heavy vehicle with a GVM exceeding 15 t
- prime mover with an unladen mass exceeding 4 t
- public passenger vehicle such as a bus or coach
- vehicle carrying a dangerous load.

Severe penalties apply to drivers who commit drink driving offences.

Penalties increase with each category of blood alcohol concentration and for repeat offending. At the upper level fines can reach up to $2,900, mandatory licence disqualification of not less than three years, demerit points, and even imprisonment in some cases.

Upon returning from a period of disqualification, drivers may be subject to a conditional licence or may even regress to a former licence stage.

ALCOHOL INTERLOCK

For serious drink driving offences, drivers face immediate loss of licence at the roadside and will be required to fit an alcohol interlock device for the same period as their licence disqualification before they can regain their full licence. An alcohol interlock device is fitted to a motor vehicle to monitor a driver's BAC preventing the vehicle from being started or operated if the driver's BAC exceeds a pre-set limit.

Defects and notices

Defect notices are issued by various authorised officers of the Department of Planning, Transport and Infrastructure and South Australia Police. There are two categories of defects - minor and major (which includes major grounded).

FORMAL WARNING

South Australia Police and Department of Planning, Transport and Infrastructure authorised officers may also issue formal warnings.

TYPE OF DEFECT

These are faults that are non-safety related and are relatively simple to repair. Owners should be advised that it is not necessary to return a Formal Warning for clearance. There is no inspection required for this notice.

HOW IT AFFECTS YOU

You may continue to use the vehicle but any necessary repairs or adjustments must be made by the time specified on the notice.

MINOR DEFECT

TYPE OF VEHICLE DEFECT

This includes faults in a vehicle's safety related systems that are not likely to cause the vehicle to become unsafe during the time specified on the notice. The vehicle may continue to be used until the expiry of time specified.

HOW IT AFFECTS YOU

Your vehicle may continue to be used up until the time specified on the notice of repair subject to any conditions on the notice. These categories of vehicle defects are of a more technical nature and require inspection and clearance of the vehicle defect notice by either a police officer, an authorised examiner at an authorised inspection station or an authorised officer of Department of Planning, Transport and Infrastructure. A yellow coloured defective vehicle label will be attached to the vehicle and a traffic infringement notice may be issued.

MAJOR DEFECT

TYPE OF VEHICLE DEFECT

'Major' category vehicle defects are serious defects in a vehicle's safety related systems that would constitute an imminent and serious safety risk.

The vehicle must not be used on a road after a notice is issued other than to move it directly to a stated location (for repair). A yellow coloured defective vehicle label will be attached to the vehicle and a traffic infringement notice may be issued.

HOW IT AFFECTS YOU

Once repairs are completed the vehicle is to be inspected by an authorised officer of the Department of Planning Transport and Infrastructure or an authorised examiner at an authorised inspection station for the vehicle defect notice to be cleared.

The police may choose to clear defects of a non-technical nature such as lights, tyres, horn or wipers that have been directed to police stations but they will not clear defect notices that have been directed to the Department of Planning, Transport and Infrastructure for a more detailed inspection.

It is against the law to drive or stand a defective vehicle on a public road or use a vehicle contrary to any conditions endorsed on the defect notice.

MAJOR DEFECT - GROUNDED

TYPE OF VEHICLE DEFECT

Vehicles with dangerous category defects must not be driven from the point of inspection unless the dangerous faults are repaired immediately or the vehicle is towed or carried to a place of repair.

HOW IT AFFECTS YOU

A yellow coloured defective vehicle label is attached to the vehicle. The issuing officer will explain the clearance procedures and where the vehicle may be inspected. In most cases the clearance procedures are the same as for major defects.

Owners of vehicles that are issued defect notices should keep the 'cleared' yellow copy of the vehicle defect notice as a record that the vehicle defect notice was cleared.

TRANSPORT SAFETY COMPLIANCE OFFICERS

The job of Transport Safety Compliance Officers (TSCO) is to ensure the safety of drivers and safe operation of heavy vehicles using South Australian roads. The officers enforce regulations for heavy vehicles, with special emphasis on:

- vehicle roadworthiness
- fatigue
- mass limit compliance
- load restraint
- dimension limits compliance
- registration and licensing matters
- route compliance.

Department of Planning Transport and Infrastructure TSCOs are easily recognised by their uniform and all inspectors carry identification cards that are produced on request.

Compliance and Enforcement

Each of the parties in the road transport supply chain must take all reasonable steps to ensure that the driver does not breach the road transport legislation. This is the chain of responsibility (CoR) under the Heavy Vehicle National Law (SA). CoR recognises that the actions, inactions and demands of off-road parties can influence the behaviour of a heavy vehicle driver on the road.

All parties in the supply chain - consignor/dispatcher, packer, loader, consignee/receiver, manager, as well as the driver and operator - must take positive steps to prevent a breach of the road transport mass, dimension and loading and fatigue laws and speeding compliance.

Under the law, all parties in the supply chain must ensure the delivery request does not require the driver to:

- drive on incorrect routes for the type of vehicle configuration
- transport goods that go beyond vehicle dimensions or mass limits
- inappropriately secure the load
- exceed the permitted number of driving hours
- fail to have minimum rest periods
- exceed the speed limits
- drive whilst fatigued
- drive whilst affected by drugs or alcohol.

Contracts that require a driver to break the law are illegal. If there is an offence committed by an operator or driver to which chain of responsibility applies, multiple parties in the supply chain may be prosecuted.

8 penalties

WHAT YOU SHOULD KNOW ABOUT PENALTIES

After reading this section, you should know:

- the demerit points limit for your class of licence
- why your licence may be suspended or cancelled
- types of defects and how you may be affected
- your obligations under the chain of responsibility.

NOTES

industry glossary

ABS

An abbreviation for anti-lock braking systems.

ADR

Australian Design Rule. A set of regulations governing vehicle design.

Aggregate mass

Maximum allowable loaded mass of a particular vehicle or combination comprising the GVM or GCM plus the overload tolerance applicable in a given state.

Aggregated trailer mass

The total mass of a trailer carrying the maximum load as specified by the trailer manufacturer. It includes the mass of the drawbar as well as the mass on the axles.

Air suspension

A suspension system in which the weight of the vehicle is supported by air bags containing compressed air and the axles are held in position longitudinally and laterally by bushed rods.

Air trip

An air-activated release catch on a tipper tailgate that is operated from the cabin.

Articulated vehicle

A vehicle with flexibly connected sections. Usually applied to a prime mover and semi-trailer as opposed to a truck and trailer and known as a combination vehicle.

Anchor point

Fitting or attachment on a vehicle or load to secure lashings.

Automatic tow coupling

The most common type of heavy trailer hitch in Australia and Europe.

Auxiliary Brakes (jake, exhaust, retarder brake)

Auxiliary brakes are found on medium to large heavy vehicles and act on the engine or drive train and will slow but not stop a vehicle.

Auxiliary gearbox

A secondary gearbox that may be located before or after the main gearbox to provide additional overdrive or reduction ratios.

Axle group

A group of axles (or a single axle) supporting one section of a vehicle.

A-Train

Usually refers to a prime mover and semi-trailer towing a trailer.

Baffles

Barriers fitted crosswise and lengthwise inside tanks to limit surging of fluids (or loads which behave like fluids) during acceleration, braking and cornering.

Baulking

A solid object, often a large piece of timber, placed against the load and fixed securely to the vehicle to prevent movement of the load.

B-Double

An articulated vehicle with a second semi-trailer attached to the rear of the first semi-trailer by means of a turntable.

9 industry glossary

Blocking

Material, usually timber, placed between the load and the vehicle structure, to prevent movement of the load.

Bolster

A piece of steel or heavy timber firmly attached to the vehicle (often bolted to the chassis) to support the load and/or prevent it from moving.

Bulker

A container fitted with loading hatches on the roof and discharge hatches on the doors and front wall.

Bulkhead

A term sometimes applied to the gate at the front of the tray body or flat top trailer which is built heavier than side gates.

Cab chassis

A truck with only the cab fitted.

Chassis

A vehicle frame.

Chocks

Wedge shaped blocks used to prevent movement of the load.

Clutch brake

A device actuated by the last inch of clutch pedal travel which brakes the spinning gears in the transmission.

Coaming

A frame boarder around the outside of a vehicle's loading deck.

Combination vehicle

A rigid truck (or bus) towing one or more trailers.

Contained load

A load prevented from dislodging from the vehicle by the vehicle structure, gates, sides, racks, headboards, stanchions or other parts of the load.

Container

A box used for transporting goods in bulk. Standard lengths are 20 and 40 feet.

Converter dolly

A unit designed to convert a semi-trailer to a dog trailer. A dolly can also be a device for spreading the weight of over-dimensional loads.

Corner protectors

Material used to protect lashings and the exposed edges of loads and vehicles, and to allow lashings to slide freely when being tensioned.

Cradle

A frame shaped to support a rounded object.

Crashbox (constant mesh)

A transmission in which the ratios were changed by sliding the various gears into and out of mesh with each other.

Cribbing

A method of supporting a load on a stable column of packing of uniform thickness, stacked in pairs, with alternate layers at 90 degrees to one another.

Cross-member

A support placed crosswise below the loading deck.

Deck

The load carrying platform.

Dog

A chain tensioner incorporating an over-centre locking action with a fixed or pivoting lever.

Dog trailer

A trailer with two axle groups, the front group being steered by the drawbar coupled to a towing vehicle.

Double trailer combination

Combination of a prime mover, semi-trailer and trailer.

Drawbar length

The distance from the line of the towing pivot to the centreline of the leading axle group of the trailer.

Drawbar stand

A leg that holds a trailer drawbar at coupling height to allow for easier hook-up.

Drive shaft

See 'Tail shaft'.

Driveline

The motor, clutch, gearbox, drive shafts, diff(s) and axle(s).

Drivetrain

As for Driveline but usually does not include the engine.

Dry freight container

A normal, fully enclosed container with doors at the back and occasionally on one side.

Dual wheels

A matched pair of wheels attached to each end of an axle.

Dunnage

Packing material (eg pieces of timber, plywood, mats) placed between the cargo and the truck platform, or between items of cargo to level the load and/or increase friction so the load is less likely to move during journey. It is also used to leave a gap between a load and the load deck, or different parts of the load, to enable forklifts tynes to be placed under for lifting.

Flat rack

A steel base for supporting loads fitted with receptacles for twist locks and provision for forklift operation.

Flat top

A truck, trailer or semi-trailer that has flat goods carrying area without sides.

Flush deck

A flat loading deck without a raised coaming.

Forward control vehicle

A truck with the cab mounted over the engine.

Gates

Permanent or removable vertical frames used at the front, side and rear of a vehicle's loading deck to contain its load. The front gate is usually called a loading rack or load rack.

9 industry glossary

Gross combination mass (GCM)

The loaded weight of an articulated vehicle or combination vehicle.

Gross road train mass (GRT M)

The loaded weight of a road train.

Gross trailer mass (GTM)

The mass on the axle(s) of a trailer when fully loaded.

Gross vehicle mass (GVM)

The loaded weight of a rigid vehicle.

Inter-axle differential

A differential that operates between two driven axles to allow one axle to turn at a slightly different speed to the other.

Inter-axle lock

Locks the inter-axle differential so drive is shared equally by both driven axles to reduce wheel spin and increase traction in slippery conditions.

Lashings

Fastening devices, chains, cables, ropes or webbing used to restrain loads.

Lashing capacity (LC)

The maximum force (in kilograms) that a lashing system is designed to sustain in use.

Load Binder

A device used for tensioning a lashing.

Load capacity

The difference between the GVM or GTM of a vehicle and its tare mass.

Load limit

The maximum load that may be carried in, or on any motor vehicle upon the road.

Load mat

A sheet of material used to increase friction and protect the load.

Pallet

A portable platform or tray onto which loads are placed for mechanical handling.

Pantechnicon

A vehicle with a body enclosed by solid rigid sides and roof.

Pawl

A lever or lock which protects reverse rotation on a winch.

Pockets

Housings or sots fixed to the vehicle to locate gates, stakes or loading pegs.

Prime mover

A short wheel base truck used to tow a semi-trailer.

Primary Brake (Service Brake)

The primary brake is the footbrake, or other brake, that is fitted to a truck or bus that is normally used to slow or stop the vehicle.

Qualified Supervising Driver

Defined in the *Motor Vehicles Act 1959* as a person who is an unconditional licence holder of the appropriate class who has held the licence for at least two years and the person is not subject to a good behaviour condition

Rear marker or reflector plates

Red and yellow plates which must be fitted to the rear of heavy vehicles to make them more visible when they are slow moving or parked.

Receptacle (dangerous goods)

For dangerous goods a receptacle is a containment vessels for receiving and holding substances or articles, including any means of closing. This includes vessels such as drums, IBCs, cylinders and tanks.

Road train

Either a truck hauling two or more trailers, or a prime mover and semi-trailer hauling one or more trailers (Note: this is not a B-double, which consists of a prime mover and two semitrailers).

Rope hooks

Attachments fixed to the surrounds of the loading deck for securing of tarpaulin and tie-down ropes.

Semi-trailer

A semi-trailer has one axle group at the rear and is designed so that the front is supported by the prime mover that tows it.

Special Purpose Vehicle

Motor vehicle or trailer, other than an agricultural vehicle or a tow truck, built for a purpose other than carrying goods: or a concrete pump or fire truck.

Speed limiter

An engine management device that limits the top speed of a truck without limiting engine revs or power in the lower gears.

Shackle

A metal coupling link closed by a bolt which can be used for attaching chain fittings.

Shoring bar

Adjustable metal beam used to restrain or segregate sections of load.

Sling

A length of hemp-core rope, webbing or steel-wire rope with eyes formed at each end.

Spreader

A transverse spar or frame used to support tarpaulins and side gates.

Stanchion

A large upright fixed to the side of a vehicle for sideways restraint.

Stillage

A metal structure for containing individual items of load.

Strut

A rigid member which can support loads in the direction of its length.

Synchromesh transmission

A transmission in which the speeds of the gears are matched or ‘synchronised’ by means of in-built synchronising clutches before they are meshed.

Tachograph

A trip recorder incorporating a clock, speedometer and often a rev counter that inscribes a record of a journey on circular paper graph.

Tachometer

An instrument for measuring engine revolutions.

Tare mass

The mass of a vehicle without its load.

Tarpaulin (tarp)

A waterproof sheet used to cover and protect goods from the weather.

Tie rail

A round rail which skirts the perimeter of the loading deck below the coaming rail.

Torque

The turning force or turning effort of a shaft. Engine torque is the turning force available at the crankshaft.

Trailer

A non-powered vehicle built to tow behind a motor vehicle.

Trailer coupling

The device that attaches a trailer to a towing vehicle.

Truck winch

A device used for tensioning a lashing which is normally placed under the coaming rail and may be fixed in position using the tie-rail or slide on a rack.

Twist lock

A locking device with a rotating head which normally engages a corner casting on the load.

Unladen mass

The mass of a motor vehicle without a load, but including all tools, fixed cranes, oil and fuel in the tanks. The unladen mass of an articulated vehicle is the unladen mass of the prime mover only.

Work diary

Driver's record of hours driven and rest periods taken.

Winch

A device for tensioning lashings via a rotating spool.

10 index

M

N

O

P

R

S

T

U

V

W

useful contacts

11

Dangerous Goods Transport - Safe Work SA

- **Help Centre**

  Phone: 1300 365 255
  www.safework.sa.gov.au

Buses & Coaches

- **Heavy Vehicle Inspection Station**

  Phone: 1300 882 248

Department of Planning, Transport and Infrastructure

Phone: 1300 TRANSPORT - 1300 872 677
www.dpti.sa.gov.au

Heavy Vehicle Customer Service

- **Heavy Vehicle Inspection availability and bookings**

  Kateena Street, Regency Park
  Phone: 1300 882 248
  On Line bookings: EzyReg

- **Safe T-Cam operations**

  Phone: 1300 660 279

- **Intelligent Access Program**

  Phone: 1300 334 640

- **Vehicle Standards**

  Phone: 1300 882 248

Approved Routes (Restricted Access Vehicles)

www.sa.gov.au/heavyvehicles

AVOID A DOWNHILL DISASTER

Trucks and buses must use low gear - not the foot brake – to stay in control down steep roads.

LOOK OUT FOR THESE SIGNS

Stay alert and obey the signs during steep descents.

Penalties apply

Government of South Australia
Department of Planning, Transport and Infrastructure