



Drive multi-combination vehicle

Unit Code: TLIC4006

L E A R N E R G U I D E

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Welcome to Shift Training Multi - Combination Course

The information contained within this booklet has been designed to give you the necessary skills and knowledge when operating a Multi – Combination vehicle, it is based on the National unit of competency TLIC4006.

Please read through this booklet, as it will help with your training.

Your training is broken up into two parts:

1. Theory Study - We suggest a minimum of six hours home study.
2. Theory session - In class session with trainer for 2 hours.
3. Theory assessment - Up to 2 ½ hours.
4. Practical Training - Varied hours depending on experience and package chosen.
5. Practical Assessment - Minimum of 2 hours required.

Both the theory and the practical assessments must be completed, and you **must** have achieved a **competent on the day** for your practical assessment to receive a Statement of Attainment.

If you have deemed **not yet competent** on the theory or practical assessment/s you will need to re book for a re assessment on another day. **There is an additional cost for a re assessment of the practical assessment.** Contact the office or check out our website for current pricing.

Ensure you have read and completed where necessary:

- Language, Literacy and Numeracy test
- Multi – Combination Enrolment Form
- Student Handbook
- Multi – Combination Course Learner Guide (this booklet)

A Message from Your Trainer / Assessor During Your Practical Assessment

- You will be notified prior to the assessment commencement.
- The assessment is designed to evaluate your ability to drive safely and correctly in different driving situations, which may include a variety of speed zones.
- I will be asking you to undertake a series of driving tasks throughout the assessment.
- You will be given clear directions in ample time.
- If I don't give you any specific directions, please just follow the road and be directed by road signs, signals and road markings.
- Please make any lane changes that are necessary to follow my directions.
- At no time during the assessment will I ask you to perform any driving tasks that are illegal.
- Once the assessment has commenced, I am unable to answer any questions that may influence your driving performance.
- If you have a mobile phone, ensure that it is switched off during the assessment.
- Please understand that during your assessment your trainer / assessor will need to video you undertaking a variety of tasks which will then be used as evidence of your competency.

MC Upgrade Pathway

Current HR Licence	Upgrading to (minimum hours – Theory + Practical)	
	MC (A, B)	MC Open
HR (A)	13 hours Auto, Synchro	17 hours Road Ranger
HR (B)	13 hours Auto, Synchro	17 hours Road Ranger
HR (O) – must do 1-hour R/R assessment to assess current competency if using Auto or Synchro for assessment		13 hours Auto, Synchro, R/R
Current HC Licence	Upgrading to (minimum hours – Theory + Practical)	
	MC (B)	MC Open
HC (A)	13 hours Auto, Synchro	17 hours Road Ranger
HC (B)	13 hours Auto, Synchro	17 hours Road Ranger
HC (O) – must do 1-hour R/R assessment to assess current competency if using Auto or Synchro for assessment		13 hours Auto, Synchro, R/R
Current MC Licence	Upgrading to (minimum hours – Theory + Practical)	
	MC Open	
MC (A), (B)		10 hours Road Ranger
MC (A), (B), (O) – Assessment Only or Re -Assessment		6 hours Auto, Synchro, R/R
<ul style="list-style-type: none"> • Student must attend theory training and complete the knowledge test prior to the practical training and assessment. • All Open class licence holders must complete a competency assessment in R/R prior to the practical MC • Upgrading from A or B condition licence the assessment must be taken in a Road Ranger if an open MC is desired. • Hours are minimum and used as a guide only, student may complete in more or less time depending on industry experience – extra hours may be required for competency at an additional cost. Minimum 4-hour session. 		

Pre-Operation Checks

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.

Is your vehicle roadworthy?

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 a un roadworthy 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.

These inspections should be conducted prior to shift start (no matter what the time of day) and always following the manufacturer's recommendations.

Use the company pre – start inspection checklist as provided. If your company do not have a prestart checklist or do not use them, you should inform the company of the responsibility in Chain of Responsibility to ensure that all vehicles under their control are safe and in a roadworthy condition.

Sample prestart checklists from NHVR over the page.



Heavy Vehicle Inspection Checklist

This checklist has been provided as a guide to the types of information that may need to be collected, or components that need to be inspected, during a vehicle inspection. This checklist is not a reason for rejection.

Vehicle Identification	
<input type="checkbox"/> Registration Number	<input type="checkbox"/> VIN/Chassis Number
<input type="checkbox"/> Compliance Plate	<input type="checkbox"/> Seating Capacity
<input type="checkbox"/> Make/Model	<input type="checkbox"/> Body Type
<input type="checkbox"/> Main Body Colour	<input type="checkbox"/> Engine Number
<input type="checkbox"/> Cylinders	<input type="checkbox"/> Odometer Reading (where fitted)
Brakes	
<input type="checkbox"/> Brake Components	<input type="checkbox"/> Air/Vacuum System (including trailer breakaway protection)
<input type="checkbox"/> Service Brake	<input type="checkbox"/> Park Brake
Couplings	
<input type="checkbox"/> Fifth Wheel/Ballrace	<input type="checkbox"/> Pin Couplings/Pintle Hooks
<input type="checkbox"/> Towbar	<input type="checkbox"/> Towing Attachments
<input type="checkbox"/> Safety Chains/Cable Attachments	
Steering and Suspension	
<input type="checkbox"/> Steering Wheel	<input type="checkbox"/> Free Play
<input type="checkbox"/> Arms/Linkages/Components	<input type="checkbox"/> Steering Box/Pump
<input type="checkbox"/> Shock Absorbers	<input type="checkbox"/> Air Bag/Spring/Coil
Wheels, Tyres and Hubs	
<input type="checkbox"/> Wheels/Rims	<input type="checkbox"/> Wheel Nuts/Fasteners
<input type="checkbox"/> Tyres	<input type="checkbox"/> Hubs
<input type="checkbox"/> Wheel Bearings	
Structure and Body Condition	
<input type="checkbox"/> Body Panels/Fittings	<input type="checkbox"/> Body and Mounting
<input type="checkbox"/> Mudguards	<input type="checkbox"/> Mudflaps
<input type="checkbox"/> Rear marking plates (as per VSB12)	<input type="checkbox"/> Cabin/Body Condition
<input type="checkbox"/> Number Plates	<input type="checkbox"/> Front Underrun Protection
<input type="checkbox"/> Electrical Equipment	<input type="checkbox"/> Horn
<input type="checkbox"/> Chassis	

Heavy Vehicle Inspection Checklist (cont.)

Seats and Seatbelts	
<input type="checkbox"/> Seats	<input type="checkbox"/> Seatbelts
<input type="checkbox"/> Child Restraint Anchorages	
Lights and Reflectors	
<input type="checkbox"/> Headlights (high/low beam)	<input type="checkbox"/> Fog Lights
<input type="checkbox"/> Front Position Light	<input type="checkbox"/> Daytime Running Lights
<input type="checkbox"/> Direction Indicator Lights	<input type="checkbox"/> Clearance/End Outline Marker Lights (front/rear)
<input type="checkbox"/> Reflectors (front/side/rear)	<input type="checkbox"/> Brake Lights
<input type="checkbox"/> Tail Lights	<input type="checkbox"/> Reversing Lights
<input type="checkbox"/> Number Plate Light	<input type="checkbox"/> Side Marker Lights
Mirrors	
<input type="checkbox"/> Rear View Mirror(s)	
Windscreen and Windows	
<input type="checkbox"/> Glazing	<input type="checkbox"/> Wipers/Demisters/Washers
<input type="checkbox"/> Windows	
Engine, Driveline and Exhaust	
<input type="checkbox"/> Exhaust System	<input type="checkbox"/> Noise Emissions
<input type="checkbox"/> Engine/Driveline	<input type="checkbox"/> Gearbox/Differential/Power Steering
<input type="checkbox"/> Fuel Tank	<input type="checkbox"/> Oil Leaks
LPG and NG Vehicles	
<input type="checkbox"/> LPG/NG Compliance Plate	<input type="checkbox"/> LPG/NG Number Plate Labels
<input type="checkbox"/> Container	
Buses	
<input type="checkbox"/> Fire Extinguisher	<input type="checkbox"/> School Bus Warning System (if required)
<input type="checkbox"/> Entrances/Exits	<input type="checkbox"/> Emergency Exits/Signs
<input type="checkbox"/> Doors/Steps	<input type="checkbox"/> Guard Rails
Motorhomes, Caravans and Campervans	
<input type="checkbox"/> Fire Extinguisher	<input type="checkbox"/> Sleeping Berths
<input type="checkbox"/> Cooking Facilities	<input type="checkbox"/> Doors
<input type="checkbox"/> Toilets/Urinals>Showers/Sinks	<input type="checkbox"/> Ventilation
<input type="checkbox"/> Electrical/Gas Certification	

Heavy Trailer Inspection Checklist

This checklist has been provided as a guide to the types of information that may need to be collected, or components that need to be inspected, during a vehicle inspection. This checklist is not a reason for rejection.

Vehicle Identification	
<input type="checkbox"/> Registration Number	<input type="checkbox"/> VIN/Chassis Number
<input type="checkbox"/> Compliance Plate	<input type="checkbox"/> ATM
<input type="checkbox"/> Make/Model	<input type="checkbox"/> Body Type
<input type="checkbox"/> Main Body Colour	
Brakes	
<input type="checkbox"/> Brake Components	<input type="checkbox"/> Breakaway Protection
<input type="checkbox"/> Service Brake	<input type="checkbox"/> Park Brake
<input type="checkbox"/> Brake Connections	
Couplings	
<input type="checkbox"/> Drawbar	<input type="checkbox"/> Towing Attachments
<input type="checkbox"/> Skid Plates	<input type="checkbox"/> Kingpin
<input type="checkbox"/> Safety Chains	
Steering and Suspension	
<input type="checkbox"/> Axles	<input type="checkbox"/> Springs/Air Bags
<input type="checkbox"/> Hangers	<input type="checkbox"/> Pins
<input type="checkbox"/> Bushes	<input type="checkbox"/> Shock Absorbers
Wheels, Tyres and Hubs	
<input type="checkbox"/> Wheels/Rims	<input type="checkbox"/> Wheel Nuts/Fasteners
<input type="checkbox"/> Tyres	<input type="checkbox"/> Hubs
<input type="checkbox"/> Wheel Bearings	
Structure and Body Condition	
<input type="checkbox"/> Mudguards	<input type="checkbox"/> Mudflaps
<input type="checkbox"/> Chassis/Sub-frame	<input type="checkbox"/> Number Plate
<input type="checkbox"/> Rear marking plates (as per VSB12)	<input type="checkbox"/> Tray/Body Condition (if applicable)
Lights and Reflectors	
<input type="checkbox"/> Brake Lights	<input type="checkbox"/> Direction Indicator Lights
<input type="checkbox"/> Tail Lights	<input type="checkbox"/> Reversing Lights (optional)
<input type="checkbox"/> Reflectors (front/side/rear)	<input type="checkbox"/> Front Position Light
<input type="checkbox"/> Number Plate Light	<input type="checkbox"/> Clearance/End Outline Marker Lights (front/rear)
<input type="checkbox"/> Side Marker Lights	

Entering, Exiting a Heavy Vehicle

For safety there is a procedure for 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.

The steering wheel is not considered a point of contact and should not be used under any circumstances.

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 out) while maintaining three points of contact.



Seatbelts

It is important for truck and bus drivers to wear a seatbelt. 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.

Compulsory seatbelt laws have been in place for heavy vehicle drivers since 1 February 2000.

Vehicles that have been modified by the installation of non-original seats (e.g. 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.

About the chain of responsibility

If you consign, pack, load or receive goods as part of your business, you could be held legally liable for breaches of the Heavy Vehicle National Law (HVNL) even though you have no direct role in driving or operating a heavy vehicle. In addition, corporate entities, directors, partners and managers are accountable for the actions of people under their control. This is the 'chain of responsibility' (CoR).

The aim of CoR is to make sure everyone in the supply chain shares equal responsibility for ensuring breaches of the HVNL do not occur. Under CoR laws if you exercise (or have the capability of exercising) control or influence over any transport task, you are part of the supply chain and therefore have a responsibility to ensure the HVNL is complied with.

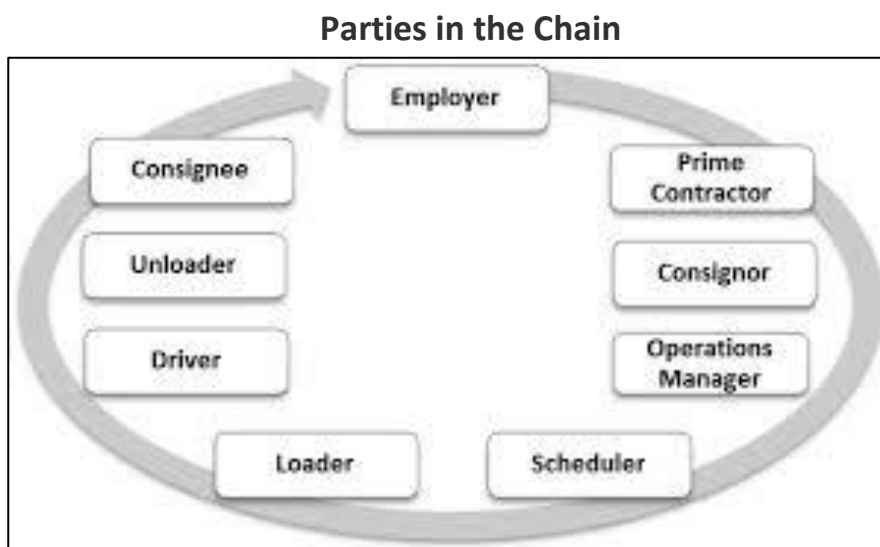
The law recognises that multiple parties may be responsible for offences committed by the drivers and operators of heavy vehicles. A person may be a party in the supply chain in more than one way. For example, they may have duties as the employer, the operator and the consigner of goods.

Legal liability applies to all parties for their actions or inactions.

Who are the parties in the supply chain?

Any person with an influence and/or control in the transport chain is a 'party' and includes, but is not limited to:

- corporations, partnerships, unincorporated associations or other bodies corporate
- employers and company directors
- exporters/importers
- primary producers
- drivers (including a bus driver and an owner-driver)
- prime contractors of drivers
- the operator of a vehicle
- schedulers of goods or passengers for transport in or on a vehicle, and the scheduler of its driver
- consignors/consignees/receivers of the goods for transport
- loaders/unloaders of goods
- loading managers (the person who supervises loading/unloading or manages the premises where this occurs).



When could CoR apply?

Some examples include:

- heavy vehicle driver breaches of fatigue management requirements or speed limits
- heavy vehicle driver breaches of mass, dimension, or loading requirements
- where any instructions, actions or demands parties in the supply chain causes or contributes to an offence under the HVNL. That includes anything done, or not done (directly or indirectly) that has an impact on compliance, for example:
- schedulers whose business practices place unrealistic timeframes on drivers which cause them to exceed their work rest options
- operators who do not provide drivers with a sleep environment which allows for quality sleep if their work requires them to sleep away from home (approved sleeper cab, access to rest stops).

Duty holders must also make sure the terms of consignment or work/employment contracts will not result in, encourage, reward or provide an incentive for the driver or other party in the supply chain (e.g. a scheduler) to break the HVNL.

Contracts that require a driver to break the law are illegal.

In a prosecution, the courts may consider the actions of each party in the supply chain. This includes what measures those parties have in place to prevent breaches of the HVNL occurring.

Each duty holder must take all reasonable steps to ensure a heavy vehicle driver can perform their duties without breaching the HVNL

Identifying Hazards When Driving

Spotting a hazard in time to take suitable evasive action and avoid a crash is an essential part of safe driving. It is important to learn how to recognise and avoid hazards while driving to improve road safety for yourself and other road users. It is recommended that when operating a heavy vehicle you should scan for hazards at least 12 seconds in advance. To give you an idea of how far this is, if you are travelling at 100km/h you would travel 324m in 12 seconds.

A hazard can be any possible source of danger on or near the road that could lead to a crash, and it can come from any direction. It could be:

- Pedestrians
- Low hanging power lines
- Low bridges
- Weight limit on bridges
- Pedestrian / school crossings
- Railway crossings



As drivers gain experience you develop skills in scanning the *road ahead and around them*, and they become better at recognising that a potentially dangerous situation is developing. This early detection gives you more time to make a decision about the hazard and respond to it appropriately.

Environmental Hazards may include:

- Overhanging trees
- Fog on the road
- Wet weather driving, windy conditions
- Flooded roads
- Slippery road surface after rain
- Unsealed roads, descending, terrain, greasy road condition



What are hazards when driving

When you are driving a heavy vehicle, it is important to understand the effects a hazard may have on maintaining safe operation. Not all hazards are dramatic or obviously dangerous. That's why it's important to know how to spot hazards and react to them in the right way.

There are two main types of hazards – **obvious visible hazards** and **hidden hazards** that you might not see straight away.

Obvious visible hazards can include:

- People walking out towards a pedestrian crossing
- A cyclist ahead on a narrow road
- A car coming out of a driveway
- Potholes on the road ahead
- Low bridges, low shop awnings
- Railway crossings

Hidden hazards are more dangerous. You need to be constantly thinking about where hidden hazards might appear.

Hidden hazards can include:

- Cars parked on the side of the road, where somebody could get out without warning
- Vehicles blocking your view of a driveway where a car could come out
- A park or playground where a child could run onto the road
- Flooded roads (unsure of what the road conditions under water are like)
- Soft edges
- Rain after a dry spell
- Wildlife and animals
- Driver fatigue

Recognise the hazard

Experienced drivers can identify hazards without consciously thinking. But for newer drivers, it takes conscious effort to spot hazards – especially hidden ones.

Here are some tips for spotting hazards:

- Scan ahead by using the 12-second rule and moving your eyes to get the big picture – try not to spend much time just staring straight ahead.
- Look for both obvious and hidden hazards.
- Think about what you would do if you had to avoid the hazard.
- Keep track of any hazards until they're not a risk to you anymore.

What to do about hazards

Once you've got used to constantly scanning for hazards, you need to know what to do about them. Think about these four steps:

- Identify any hidden or obvious hazards (e.g. a child playing with a ball on the side of the road).
- Predict what the hazard is going to do (e.g. is it possible the child is going to run onto the road?).
- Decide what you are going to do (often slow down and get ready to stop).
- Act on the decision (brake).

A good way to remember this plan is to remind yourself of the first letters of each step – **IPDA** (Identify, Predict, Decide and Act). At first you'll need to actively think about each step in the routine, but eventually, it'll become second nature and you'll start doing it without even thinking about it.

Activities

Consider what steps you should take once the following hazards have been identified:

1. You are driving on a single lane road when you see a vehicle up ahead cross the centre line to overtake on oncoming car.
2. A branch has fallen on the road up ahead.
3. You notice a herd of cattle in an unfenced area adjacent to the road.
4. You are approaching a corner where the road camber changes and there are surface irregularities.

Answers:

1. Take your foot off the accelerator, turn lights on, flash high beam, sound horn, always veer left slowly, look for escape route (crash through a fence, try not to crash into the other vehicle), start control braking.
2. Take your foot off the accelerator, begin braking to slow the vehicle as you approach the hazard, scan for oncoming traffic, when it is safe to do so – indicate to the right and cross the centre line to avoid the hazard if needed.
3. Slow vehicle to a speed you can stop safely if required, scan for oncoming traffic, plan what you will do if a cow decides to walk onto the road (stop vehicle, veer into another lane).
4. Ease off acceleration, slow the vehicle in preparation for the corner, consider lane position, drive to suit conditions.

Draw a line to match the driver to the hazard – there maybe more than one!

Driver	Hazard
Reckless drivers	Creates road rage situations
Distracted drivers	React slower
Aggressive drivers	Tailgate
Fatigued drivers	Unaware of surroundings

Have you displayed any of the above driving behaviours?

Alcohol, Drugs and Professional Drivers

It is illegal to drive while under the influence of alcohol or drugs, including some over-the-counter and prescription medicines. The regulated blood alcohol limit for Heavy Vehicle drivers is 0.0.

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.

Drugs and professional 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 behavior. 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.

Stress, Fatigue and Professional Drivers

Driver fatigue

Driver fatigue is one of the biggest causes of crashes for heavy vehicle drivers. In Australia, at least eight per cent of heavy truck fatal crashes involve a fatigued heavy vehicle driver. Many of these crashes occur late at night or early in the morning.

As a professional 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.

What is a fatigue-regulated heavy vehicle?

A fatigue-regulated heavy vehicle is a vehicle with a gross vehicle mass (GVM) of more than 12 tonnes. This includes a vehicle combination of a total GVM of more than 12 tonnes. A bus of more than 4.5 tonnes fitted to carry more than 12 adults, including the driver is also a fatigue-regulated heavy vehicle.

A vehicle built or modified to operate as machinery or equipment off-road and which is not capable of carrying goods or passenger by road, is not a fatigue-regulated heavy vehicle. A motorhome is not a fatigue-regulated heavy vehicle.

When must I use a work diary?

All drivers of fatigue-regulated heavy vehicles who drive more than 100km from their home base or operate under Basic Fatigue Management (BFM) or Advanced Fatigue Management (AFM) must complete a work diary to record their work and rest times unless they have a work diary exemption (either through a notice or permit).

What is a work diary used for?

A work diary is evidence that a driver's work and rest hours are compliant with the Heavy Vehicle National Law (HVNL) and that their fatigue is being managed. Drivers are not allowed to drive or work more than the maximum work hours or rest less than the minimum rest hours in a certain period set out by law.

Most drivers of a fatigue-regulated heavy vehicle are required by law to create a record of time spent working (including driving time) and resting on a daily basis. The HVNL names the circumstances where a work diary must be used as the method to create this record.

Records must be kept of work and rest hours, this is done, except where an exemption applies, by using the National Driver Work Diary which has recently been updated to reflect the requirements under the National Regulation. Drivers must record information such as whether they are working under Standard Hours, BFM hours or AFM hours, and when they change from work and rest option in their work diary.

The new work diary is available at a cost from Transport and Main Roads (TMR).

About Fatigue Management

Driver fatigue or drowsy driving is a significant safety hazard for the road transport industry. The main causes of 'drowsy driving' are too little sleep, driving at times when you would normally be asleep and working or being awake for very long hours.

National heavy vehicle driver fatigue reforms were introduced in 2008. The laws apply to fatigue-regulated heavy vehicles. A fatigue-regulated heavy vehicle is:

- A vehicle with a gross vehicle mass (GVM) of over 12t
- A combination when the total of the GVM is over 12t
- Buses over 4.5t fitted to carry more than 12 adults (including the driver)
- A truck, or a combination including a truck, with a GVM of over 12t with a machine or implement attached

Some heavy vehicles are not classed as fatigue-regulated heavy vehicles. These include trams, motor vehicles modified to primarily operate as a machine or implement (plant such as agricultural machinery, bulldozers, tractors, etc.) and motor homes specifically modified for residential purposes (not just built with a sleeper berth).

The laws cover all aspects of work and rest relating to heavy vehicles including:

- Work and rest hours
- Recording work and rest times
- Fatigue management exemptions, and
- Chain of Responsibility obligations.

At heart of the laws for fatigue management is a primary duty - A driver must not drive a fatigue-regulated heavy vehicle on a road while impaired by fatigue. Drivers may be impaired by fatigue even when complying with work and rest limits.

Chain of Responsibility

If you consign, pack, load or receive goods as part of your business, you could be held legally liable for breaches of road transport laws even though you have no direct role in driving or operating a heavy vehicle. In addition, corporate entities, directors, partners and managers are accountable for the actions of people under their control. This is the 'Chain of Responsibility' (CoR).

Each person in the Chain of Responsibility must take all reasonable steps to ensure that the driver of a fatigue-regulated heavy vehicle does not drive on a road while impaired by fatigue or breach road transport laws relating to fatigue. In addition to this, each person in the Chain of Responsibility must take all reasonable steps to ensure a heavy vehicle driver can perform his or her duties without breaching road transport laws.

Standard Hours

Standard hours apply to operators who do not have accreditation for fatigue management. Drivers must work to standard hours if the operator they work for does not hold BFM or AFM accreditation.

Standard hours – work and rest hours requirements (Solo drivers)

Time	Work	Rest
In any period of...	A driver must not work for more than a maximum of...	And must have the rest of that period off work with at least a minimum rest break of
5 ½ hours	5 ¼ hours work time	15 continuous minutes rest time
8 hours	7 ½ hours work time	30 minutes rest time in blocks of 15 continuous minutes
11 hours	10 hours work time	60 minutes rest time in blocks of 15 continuous minutes
24 hours	12 hours work time	7 continuous hours stationary rest time*
7 days	72 hours work time	24 continuous hours stationary rest time
14 days	144 hours work time	2 x night rest breaks# and 2 x night rest breaks taken on consecutive days

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

#Night rest breaks are 7 continuous hours stationary rest time taken between the hours of 10pm on a day and 8am on the next day (using the time zone of the base of the driver) or a 24 continuous hours stationary rest break.

Basic Fatigue Management (BFM)

Operators with Basic Fatigue Management (BFM) accreditation can operate under more flexible work and rest hours, allowing for work of up to 14 hours in a 24-hour period provided that the driver is working for a company that has BFM accreditation issued through TMR, the driver has a BFM certificate and the driver has been inducted into the company's BFM program.

See NHVR for more information

Causes that increase fatigue related accidents

- Alcohol
- Loading
- Little rest
- Poor health
- Long driving hours
- Poor eating habits
- No sleep or disturbed sleep patterns
- Working in hot or uncomfortable conditions

Possible effects of a fatigue related accident

- Injury
- Loss of life
- Legal implications
- No or little income
- Company loses income
- Trauma Stress on your family and others

Good fatigue management strategies

- Rest
- Exercise
- Drink water
- In cabin exercise
- Know your limitations
- Eat well (low fat and low calorie)
- Ask your family to respect your need for rest

Factors that can contribute to motor vehicle accidents other than fatigue

- Speed
- Inattention
- Mechanical problems
- Poor road conditions
- Drug and alcohol use

Five principles of stress management

1. Remain calm
2. Think before acting
3. Take care of yourself
4. Don't rush or be in a hurry
5. Have a realistic work schedule

Stress

Stress. It's unavoidable really, especially in the trucking industry where unpredictability is a common theme. Truckers are constantly fighting bad weather conditions, distracted drivers, dealing with difficult shipping & receiving personnel as well as unrealistic deadlines, all of which definitely cause some truck driver stress in even the most laid-back person.

Not only does stress cause impatience and frustration, but also it can affect your body and the way it functions! Principles of stress management include:

- Take care of yourself
- Have realistic schedule
- Remain clam
- Don't rush
- Think before acting

Speed Limits

The maximum speed limit for a vehicle that exceeds a GVM of 4.5 tonnes is 100 kilometers per hour.

24A Speed limit for certain vehicles

(1) This section applies to a driver despite a higher speed limit that would otherwise apply to the driver under this part.

(2) The speed limit applying to the following drivers for a length of road where the driver is driving is—

(a) for a driver driving a tractor towing a sugar cane trailer—50km/h;

(b) for a driver driving an oversize vehicle that is required to travel with a pilot or escort vehicle—80km/h;

(c) for a driver driving a road train—90km/h;

(d) for a driver driving a bus with a GVM over 5t, or another vehicle with a GVM over 12t—100km/h.

For B Double or Road Train configurations the following speed limits apply:

1. A speed of **90km/h** for a road train or a B-triple fitted with mechanical suspension on any trailer axle.
2. A speed of **100km/h** for a B-double or a B-triple combination fitted with air suspension on all trailer axles or a prime mover/semitrailer combination towing one converter dolly.
3. Unless otherwise stated, the maximum speed limit allowed in a built-up area is **50km/h**

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, they are designed to prohibit the drivers speed. If your vehicle falls into one of the following groups, it must be speed limited to 100 kilometers per hour.

A heavy vehicle or bus manufactured on or after 1 January 1988, being either

- Truck having a GVM exceeding 15 tonnes.
- Bus used to provide a public passenger service and with a GVM exceeding 14.5 tonnes.

A heavy vehicle or bus manufactured on or after 1 January 1991 being either

- Truck having a GVM exceeding 12 tonnes.
- Bus used to provide a public passenger service and with a GVM exceeding five tonnes.

Do not overtake turning vehicles

This sign allows a long vehicle (over 7.5 metres) to occupy space outside an assigned lane when turning so long as:

- The vehicle is within 50 metres from the point of the intersection
- The move can be made safely.
- Wherever possible you should you set the back of your vehicle so that the traffic behind you cannot overtake your vehicle on the side you are turning to
- Keep checking your mirrors both left and right



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

227A Do not overtake turning vehicle signs for long vehicles

A person must not drive a vehicle displaying a do not overtake turning vehicle sign if the vehicle, together with any load or projection, is not 7.5m long, or longer.

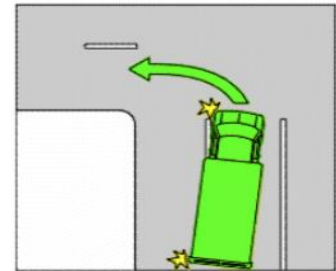
Maximum penalty—20 penalty units.

Making Turns

28 Starting a left turn from a multi-lane road

(1A) A driver turning left at an intersection from a multi-lane road that has a slip lane must approach and enter the intersection—
(a) from within the slip lane; or
(b) if there is an obstruction that prevents the driver from entering the intersection from within the slip lane—from within the left lane.

Maximum penalty—20 penalty units.



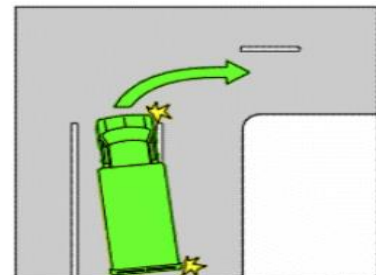
(2) A driver may approach and enter the intersection from the marked lane next to the left lane as well as, or instead of, the left lane if—

- (a) the driver's vehicle, together with any load or projection, is 7.5m long, or longer; and
- (b) the vehicle displays a do not overtake turning vehicle sign; and
- (c) any part of the vehicle is within 50m of the nearest point of the intersection; and
- (d) it is not practicable for the driver to turn left from within the left lane; and
- (e) the driver can safely occupy the next marked lane and can safely turn left at the intersection by occupying the next marked lane, or both lanes.

32 Starting a right turn from a multi-lane road

(2) A driver may approach and enter the intersection from the marked lane next to the right lane as well as, or instead of, the right lane if—

- (a) the driver's vehicle, together with any load or projection, is 7.5m long, or longer; and
- (b) the vehicle displays a do not overtake turning vehicle sign; and
- (c) any part of the vehicle is within 50m of the nearest point of the intersection; and
- (d) it is not practicable for the driver to turn right from within the right lane; and
- (e) the driver can safely occupy the next marked lane and can safely turn right at the intersection by occupying the next marked lane, or both lanes.



33 Making a right turn

(4) A driver may turn right other than as indicated by a turn line if—

- (a) the driver's vehicle, together with any load or projection, is 7.5m long, or longer; and
- (b) the vehicle displays a do not overtake turning vehicle sign; and
- (c) it is not practicable for the driver to turn right as indicated by the turn line; and
- (d) the driver can safely make the turn other than as indicated by the turn line.

Continuous white edge line

150 Driving on or across a continuous white edge line

1) A driver must not drive on or over a continuous white edge line on a road unless subsection (1A), (1B) or (1C) applies to the driver.

Maximum penalty—20 penalty units.

(1A) A driver may drive on or over a continuous white edge line on a road if the driver is—
(a) overtaking a vehicle that is turning right, or making a U-turn from the centre of the road, and is giving a right change of direction signal; or
(b) driving a slow-moving vehicle, and it is necessary for the driver to drive on or over the edge line to allow the vehicle to be overtaken or passed by another vehicle; or
(c) driving a vehicle that is too wide, or too long, to drive on the road without driving on or over the edge line; or
(d) avoiding an obstruction.

Roundabouts



111 Entering a roundabout from a multi-lane road or a road with 2 or more lines of traffic travelling in the same direction

(8) Despite subsection (2), a driver may approach and enter the roundabout from the marked lane next to the left lane as well as, or instead of, the left lane if—

(a) the driver's vehicle, together with any load or projection, is at least 7.5m long; and
(b) the vehicle displays a do not overtake turning vehicle sign; and
(c) any part of the vehicle is within 50m of the nearest point of the roundabout; and
(d) it is not practicable for the driver to leave the roundabout less than halfway around it from within the left lane; and
(e) the driver can safely occupy the next marked lane and can safely leave the roundabout less than halfway around it by occupying the next marked lane or both lanes.

(9) Despite subsection (3), a driver may approach and enter the roundabout from the marked lane next to the right lane as well as, or instead of, the right lane if—

(a) the driver's vehicle, together with any load or projection, is at least 7.5m long; and
(b) the vehicle displays a do not overtake turning vehicle sign; and
(c) any part of the vehicle is within 50m of the nearest point of the roundabout; and
(d) it is not practicable for the driver to leave the roundabout more than halfway around it from within the right lane; and
(e) the driver can safely occupy the next marked lane and can safely leave the roundabout more than halfway around it by occupying the next marked lane or both lanes.

115 Driving in a roundabout to the left of the central traffic island

(2) This subsection applies to a driver if—

(a) the driver's vehicle is too large to drive in the roundabout without driving on the edge of the central traffic island; and

(b) the driver can safely drive on the edge of the central traffic island.

(3) This subsection applies to a driver if—

(a) the driver's vehicle is too large to drive in the roundabout without driving over the central traffic island; and

(b) the central traffic island is designed to allow a vehicle of that kind to be driven over it.

Over-Dimensional Signs

O.D. signs show approved routes for 'Over-Dimensional' vehicles (B-Doubles are not Over-Dimensional vehicles).



Escort Vehicles

When you are driving your heavy vehicle ensure that you give way to any escorted vehicles. If required, you may need to pull over in a safe place and wait for the vehicles to pass.

79A Giving way to escorted vehicles

(1) A driver must give way to an oversize vehicle that is being escorted by a pilot or escort vehicle.

Maximum penalty—20 penalty units.

(2) This section applies to the driver despite any other section that would otherwise require the driver of an oversize vehicle to give way to the driver.



Where Heavy vehicles can Stand or Park?

Heavy vehicles (GVM of 4.5 tonnes or more) or long vehicles (7.5 metres 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).

The driver of a multi-combination vehicle must comply with the particular provisions of the Transport Operations (Road Use Management – Road Rules) Regulation 1995 relating to keeping a minimum distance between long vehicles, not obstructing the path of other drivers, and parking in built-up areas. Drivers must also comply with parking provisions contained in the local laws of a local government. This may differ from State to State.

Local Government may regulate where a Multi Combination Vehicle may park. Parking may be permitted in designated parking bays or rest areas, at your depot or truck stops.



Stopping on Roads

200 Stopping on roads—heavy and long vehicles

(1) The driver of a heavy vehicle, or long vehicle, must not stop on a length of road that is not in a built-up area, except on the shoulder of the road.

Maximum penalty—20 penalty units.

(2) Subject to subsections (2A) and (2B), the driver of a heavy vehicle, or long vehicle, must not stop on a length of road in a built-up area for longer than 1 hour, unless the driver is permitted to stop on the length of road for longer than 1 hour by information on or with a traffic control device.

Maximum penalty—20 penalty units.

(2A) The driver of a heavy vehicle, or long vehicle, may stop on a length of road in a built-up area for longer than 1 hour if the driver is engaged in dropping off or picking up goods for all of the period when the vehicle is stopped.

(2B) Subsections (2) and (2A) apply unless a local law otherwise provides.

(3) In this section—

heavy vehicle means a vehicle with a GVM of 4.5t or more.

long vehicle means a vehicle that, together with any load or projection, is 7.5m long, or longer.

road does not include a road-related area but includes any shoulder of a road.

220 Using lights on vehicles that are stopped

(1) A driver must not stop on a road at night unless—

(a) if the driver's vehicle is 2.2m wide, or wider—the clearance and side marker lights fitted to the vehicle are operating effectively and are clearly visible; or

(b) in any other case—the parking lights fitted to the driver's vehicle are operating effectively and are clearly visible.

Maximum penalty—20 penalty units.

(2) This section does not apply to a driver if the driver stops on a length of road, or in an area, with street lighting and the driver's vehicle is visible for at least 200m in all directions from the vehicle.

(3) In subsection (1), a reference to a kind of light fitted to a vehicle is a reference to a light of that kind required to be fitted under—

(a) the heavy vehicle standards under the Heavy Vehicle National Law (Queensland); or

(b) the Standards and Safety Regulation.

(4) In this section—

road does not include a road-related area, but includes any shoulder of the road.

Spray Suppression Devices

Spray suppression devices shall be fitted to all axle groups of a B-Double and must comply with the current standards. (Australia is currently using the British Standard AU200 – 1984 Parts 1 and 2). These standards are currently under review as to whether they are appropriate for Australian road transport conditions.

- Mudguards must be ribbed on the underside and have a lip on the edges.
- Mud flaps must be ribbed or have a matting surface.
- Brushing may be required around wheel arches. For certain special operations, this requirement may be relaxed.

Air Hose Connectors

All Multi Combinations vehicles require polarised hose connectors (One male fitting and one female fitting). In Western Australia it is mandatory to have clear bore fittings to allow air to travel the greater distance with less restriction and achieve optimum braking.

Legislations, Guidelines and Permits

Drivers of Heavy Vehicles are governed by National, State and Local legislations and guidelines, some of these include:

- Transport Operations (Road Use Management) Act 1995
- Transport Operations (Road Use Management—Road Rules) Regulation 2009
- Heavy Vehicle (Fatigue Management) National Regulation 2016
- Load Restraint Guidelines 2018 (NTC)
- Heavy Vehicle (Mass, Dimension and Loading) National Regulation

Under the Transport and Operations (Road Use Management) Act 1995 (TORUM) an Authorised officer may instruct you to move your vehicle up to a 30 km radius along the forward route of the journey or to the side of the road where the unit was pulled up.

The Anti-discrimination Act 1991 requires you to respect cultural diversity in the workplace.

DOCUMENTATION

The driver of a B-Double must carry with them at all times the usual documentation relative to a heavy vehicle.

- Multi Combination Licence
- National work diary
- State or Territory information bulletins/ Gazette Notice B-Double & Higher Mass Limit Trucks Local Roads Approved for B-Doubles & Higher Mass Limit Trucks
- Any permits issued by States or Territories entitling you to use a road or roads listed in the above publications
- Dangerous Goods Licence (if applicable)
- Dangerous Goods Emergency Procedures Guide (if applicable)
- Vehicle must be registered as a B-Double or Road Train

PERMITS

Permits are required on approved routes for B-Doubles over 62.5 tonne unless owners are accredited under Higher Mass Management.

If a B-Double moves off an approved road a permit is required, unless directed by a member of the police force or transport officer. These permits must be obtained from the appropriate council, shire or State or Territory transport. When operating interstate, always check for local requirements.

WARNING - Unauthorised use of a non-approved road or failure to comply with any of the requirements in the Information Bulletin/s will leave the driver and operator liable for prosecution.

The two most common type of permits required are:

- Route
- Oversize

Applications for permits are available on the TMR website. For other permits or travelling interstate you will need to apply to the NHVR.

Oversize vehicles

311 Exemption for oversize vehicles

(1) A provision mentioned in subsection (2) does not apply to the driver of an oversize vehicle, or the driver of a vehicle escorting or piloting an oversize vehicle, if—

(a) it is not practicable for the driver to comply with the provision; and

(b) the driver is taking reasonable care; and

(c) the driver is complying with—

(i) any guideline or permit applying to the movement of the vehicle under the Standards and Safety Regulation; or

(ii) any mass or dimension exemption applying to the movement of the vehicle under the Heavy Vehicle National Law (Queensland); and

(d) the vehicle is displaying an oversize warning sign.

(2) For subsection (1), the provisions are as follows—

• *part 7 (Giving way), except—*

—*section 67 (Stopping and giving way at a stop sign or stop line at an intersection without traffic lights)*

—*section 68 (Stopping and giving way at a stop sign or stop line at other places)*

—*section 69 (Giving way at a give way sign or give way line at an intersection, other than a roundabout)*

—*section 70 (Giving way at a give way sign at a bridge or length of narrow road)*

—*section 71 (Giving way at a give way sign or give way line at other places)*

• *part 8 (Traffic signs and road markings), except—*

—*section 102 (Clearance and low clearance signs)*

—*section 103 (Load limit signs)*

• *section 111 (3) (which is about entering a roundabout from the right marked lane or line of traffic)*

• *section 116 (Obeying traffic lane arrows when driving in or leaving a roundabout)*

• *part 11 (Keeping left, overtaking and other driving rules)*

• *part 12 (Restrictions on stopping and parking)*

• *section 268 (How persons must travel in or on a motor vehicle)*

• *section 288 (Driving on a path)*

• *section 289 (Driving on a nature strip)*

• *section 290 (Driving on a traffic island)*

• *section 296 (Driving a vehicle in reverse)*

• *section 297 (2) (which requires a driver to have a clear view of the surrounding road and traffic).*

Approved Routes and Navigation

Road Trains and B-doubles may operate on the roads outlined in the "Multi-combination Routes in Queensland" as specified by the vehicle type and subject to any conditions specified on the maps.

Other factors to consider include:

- B-doubles which are not longer than 19m (19m B-doubles), may operate on all the roads outlined in the "Multi-combination Routes in Queensland"
- B-doubles may also operate on all other roads in Queensland not outlined in the "Multi-combination Routes in Queensland" (general access)
- For a B-double longer than 19m to operate on roads not marked on maps outlined in the "Multi-combination Routes in Queensland", a permit must be obtained from the Department of Transport and Main Roads. The permit, or a copy, must be carried at all times and produced when required by an Authorised officer.
- For a road train to operate on roads (other than local authority-controlled roads) not marked on the maps outlined in the "Multi-combination Routes in Queensland"; a permit must be obtained from the Department of Transport and Main Roads. The permit, or a copy, must be carried at all times and produced when required by an Authorised officer.
- For a road train to operate on local authority-controlled roads not marked on maps outlined in the "Multi-combination Routes in Queensland", written approval must be obtained from the relevant local authority. The approval should include the maximum lengths of the vehicle combinations approved. The approval, or a copy, must be carried at all times and produced when required by an Authorised officer.
- Road trains and B-doubles must not operate on roads where traffic signs restrict their use.

Note: Multi-combination routes in Queensland can be accessed via the department's website or you could try the NHVR's Journey Planner.

Route Changes

If your intended route is cut or for some reason you are unable to continue on your journey as planned, you will need to have a backup plan that may include:

- Finding an alternate route
- Splitting trailers
- Inform supervisors / managers of changes to route and time changes

If you are transporting a heavy and high load you can check if your route is safe to travel on the NHVR website. If you have to go across or under bridges that do not meet your height or weight requirements may need to find an alternate route.

Sources of information to guide you when planning an alternate route could include:

- Street Directory
- Truck GPS
- Excess mass and dimensions handbook
- Transport Website
- NHVR website

The System of Vehicle Control

When negotiating intersections, roundabouts and other potential hazards, such as road works, railway crossings and crash sites, it's important to control the vehicle's speed and side-cornersing forces before entering the site.

Drivers who use the system of vehicle control will be concentrating on potential trouble spots, not on the brakes and gear lever.

While the system of vehicle control does take some getting used to, once perfected it produces an unrushed, deliberate and safe driving style that reduces the risks, particularly at intersections and even more so at roundabouts, where these changes in direction can occur, and vehicles carrying high-CG or 'live' loads often come to grief. In these situations, the combination of road camber and running trailer wheels onto kerbs can make the stability problems even worse. The system of vehicle control is explained below.

1. Course - Know where you are going and put the vehicle in the correct place on the road.
2. Mirrors - Check behind the vehicle and along both sides.
3. Signal - Indicate your intentions for at least three seconds before you carry out any maneuver.
4. Brake - Adjust your road speed early so you can downshift.
5. Gears - Change down, and repeat the process if necessary, so that you are in the right gear before you maneuver.
6. Mirrors - Check your mirrors again.
7. Execute - Carry out the maneuver.
8. Accelerate - Accelerate away from the turn or hazard.

A very cautious and planned approach to corners is always necessary. These five key driving techniques should be developed and constantly used:

1. Stability,
2. Steering / cornering,
3. Braking and speed,
4. Distance (space cushion),
5. Observation

What Would You Do in Case of an Emergency or Accident?

In case of an emergency situation or an accident you should follow state and territory regulations, your company procedures manual, workplace emergency procedures guide or your driver's handbook.

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 available from the Australian Government, Department of Infrastructure and Transport, website www.infrastructure.gov.au or call 1300 889 873 for a copy.
- The Australian Code for the Transport of Explosives by Road and Rail available from Safe Work Australia, website www.safeworkaustralia.gov.au or call 02 6121 5317
- The Australian Code for the Transport of Explosives by Road and Rail available from Safe Work Australia, website www.safeworkaustralia.gov.au or call 02 6121 5317



In the event of a crash you must:

- Call the police or fire brigade on 000.
- Not touch spilled chemicals and avoid breathing fumes and dust.
- Wash off any chemicals with plenty of water if you are splashed. Keep people away from the crash site.
- Show the shipping documents and emergency procedure guide to the police or fire brigade when they arrive.

When you are in an accident and not seriously hurt, you need to act to prevent further damage or injury. The basic steps to be taken at any accident are:

- Protect the area.
- Notify authorities.
- Assist the injured.

Protect the Area

The first thing to do at an accident scene is to keep another accident from happening at the same spot.

If your vehicle is involved in the accident, try to get it to the side of the road. This will help prevent another accident and allow traffic to move.

If you are stopping to help, park away from the accident. The area immediately around the accident will be needed for emergency vehicles.

- Put on your hazard lights.
- Set out reflective triangles to warn other traffic. Make sure other drivers can see them in time for them to avoid the accident.

Notify Authorities

If you have a two-way, put out a call over the emergency channel before you get out of your vehicle. If not, wait until after the accident scene has been properly protected, then phone or send someone to phone the police. Try to determine where you are so you can give the exact location.

Assist the Injured

If a qualified person is at the accident and helping the injured, stay out of the way unless asked to assist. Otherwise, do the best you can to help any injured parties.

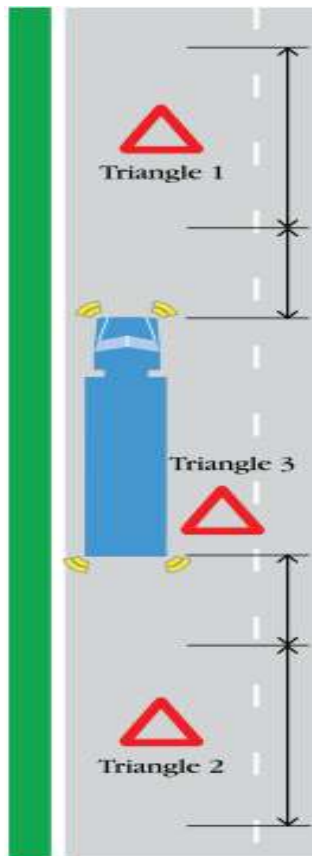
Do not move a severely injured person unless the danger of fire or passing traffic makes it necessary.

- Apply basic first aid
- Keep injured persons calm

Warning Triangles

A vehicle or a vehicle and trailer with a GVM of more than 12 tonnes, must carry three portable warning triangles to use if the vehicle breaks down.

If a vehicle is required to carry warning triangles **stops** or the **load being carried by the vehicle falls onto the road** and is not visible for 200 metres in all directions, and the speed limit is 80km/h or less the driver must put:



- The first triangle between 50-150m from the front of the vehicle or fallen load.

- The third triangle at the side of the vehicle, or fallen load, in a position that gives sufficient warning to other road users of the position of the vehicle or fallen load.

- The second triangle between 50-150m from the rear of the vehicle or fallen load.

B Double and Type 1 Road Trains must carry 3 triangles whilst Type 2 Road Trains must carry 6 triangles.

227 Using portable warning triangles

This section applies to a driver if the GVM of the driver's vehicle is over 12t.

(2) If the driver stops on a road, or if some or all of any load being carried by the vehicle falls onto a road, at a place where the speed limit is 80km/h or more and the vehicle is not visible at any time for at least 300m in all directions from that place, the driver must use at least 3 portable warning triangles, placed in accordance with subsection (4), to warn other road users of the vehicle or load.

Maximum penalty—20 penalty units.

(3) If the driver stops on a road, or if some or all of any load being carried by the vehicle falls onto a road, at a place where the speed limit is less than 80km/h and the vehicle is not visible at any time for at least 200m in all directions from that place, the driver must use at least 3

portable warning triangles, placed in accordance with subsection (5), to warn other road users of the vehicle or load.

Maximum penalty—20 penalty units.

(4) For subsection (2), the driver must—

- (a) place 1 triangle at least 200m, but not over 250m, behind the vehicle or fallen load; and*
- (b) if the vehicle or fallen load is on a one-way road or divided road, place 1 triangle between the triangle mentioned in paragraph (a) and the vehicle or fallen load; and*
- (c) if the vehicle or fallen load is not on a one-way road or divided road, place 1 triangle at least 200m, but not over 250m, in front of the vehicle or fallen load; and*
- (d) place 1 triangle at the side of the vehicle, or fallen load, in a position that gives sufficient warning to other road users of the position of the vehicle or fallen load.*

(5) For subsection (3), the driver must—

- (a) place 1 triangle at least 50m, but not over 150m, behind the vehicle or fallen load; and*
- (b) if the vehicle or fallen load is on a one-way road or divided road, place 1 triangle between the triangle mentioned in paragraph (a) and the vehicle or fallen load; and*
- (c) if the vehicle or fallen load is not on a one-way or divided road, place 1 triangle at least 50m, but not over 150m, in front of the vehicle or fallen load; and*
- (d) place 1 triangle at the side of the vehicle, or fallen load, in a position that gives sufficient warning to other road users of the position of the vehicle or fallen load.*

(6) In this section—

***divided road** means any length of a two-way road that has a median strip that is a structure. **road** does not include a road-related area, but includes any shoulder of a road.*

Low risk driving

As a professional driver you should at all times display 'low risk' driving. 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. This is explained in detail in the Road Users' Handbook.

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 must 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 maximize 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 moving away from a parked car to avoid doors opening and pedestrian movement.

Crash avoidance space

A low risk driver maintains a 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, and alert, and not affected by alcohol, drugs, fatigue or a distraction, will still require about 1 1/2 seconds to react.

Response time is the time required to take action. Generally a minimum of two to 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.

Monitor Road Conditions

Road safety research indicates that there is a significantly higher risk of death or injury due to crashes on rural or remote roads.

Key risk factors involved in driving on rural or remote roads are:

- unfamiliar driving conditions
- driver inexperience
- excessive speed for the road conditions
- long travel distances
- monotony
- driver fatigue
- extreme weather events
- alcohol
- narrow and unsealed roads
- differing/inconsistent road surfaces
- irregular and poorly maintained road shoulders
- riskier overtaking
- animals on the road
- farm machinery and other slow-moving vehicles on the road

Other factors that have an impact on the safety of remote area travel are:

- restricted communication networks
- limited ambulance and medical services
- longer response times by emergency services in the event of a crash.

The risks associated with driving on rural and remote roads can be minimised with planning and preparation. Consider the safety tips below:

- Plan the journey in detail
- Allow adequate travel time to avoid the urge to exceed safe travel speeds
- Obtain a map and place it in the vehicle
- Learn about the road and traffic conditions via: – the Queensland Government’s traffic and travel information website 13 19 40 – RACQ’s road conditions website
- Consult weather forecasts and observe weather warnings
- Pre-plan refuelling stop
- Pre-plan and book overnight accommodation
- Check the safety and serviceability of the vehicle before departure, including inflation pressures of the tyres and the spare tyre
- Ensure the vehicle has a jack and a wheel brace and practice wheel changing.
- Do not start a trip after a full working day

Safety advice for drivers

Drivers should take special care when driving on rural or remote roads. They must know their capabilities and limitations.

Driving in poor weather conditions Rain, strong winds and fog make driving more difficult, especially at night.

The risks associated with driving in bad weather conditions can be minimised by:

- driving at a speed appropriate for the conditions
- ensuring that the windscreen is clean, and the windscreen wipers are operational
- ensuring that the windscreen wiper blades are in good condition
- using the air conditioner or demister to keep the windscreen clear
- ensuring that all vehicle and trailer lights are serviceable
- using low beam headlights in fog and using rear fog lights (if fitted) only in heavy fog or very hazardous weather conditions
- using hazard lights when travelling very slowly
- driving at very reduced speeds where there is water over the road to reduce the risk of aquaplaning
- avoiding sudden or harsh braking or steering actions
- not attempting to overtake other vehicles (unless on a double carriageway)
- postponing trips on wet, unsealed roads

Bushfires

Travelling during a bushfire is extremely dangerous and should be avoided. The safest option is to plan to avoid bushfire prone areas during times of high fire danger. If drivers do come across a bushfire, and it is possible to turn around, do so and drive to safety.

Bulldust

Bulldust is a very fine dust that is common on outback Australian tracks. It is particularly prevalent in the far north where the tracks are boggy in the wet season and very dry in the dry season. Bulldust forms when traffic breaks up the track surface.

Where to find information on road conditions

You can find out up to date information about road conditions on the following websites:

- <https://qldtraffic.qld.gov.au>
- <https://roadconditions.racq.com.au/>
- <http://www.bom.gov.au>

Following Distance for B-Doubles

When following a vehicle more than 19 meters long or more than 2.5 meters wide, a minimum distance of 60 meters must be maintained from that vehicle.

Exceptions

- When driving on a multi lane road.
- When overtaking.
- When in a built-up area.
- For a long vehicle travelling on an approved B-Double route, or driving on a multi-lane road or any length of road in a built-up area or when overtaking- the distance is 60 meters.

Legal Minimum distances between large vehicles

All vehicles 7.5 meters or longer must keep the following minimum distances between long vehicles:

- 200 meters in a road train area.
- 60 meters outside a road train area.

NOTE: It is recommended that the 200-meter following distance should still be maintained wherever possible, even in a built-up area. This is also important when crossing bridges to help safeguard against bridge span structure damage.

127 Keeping a minimum distance between long vehicle

(1) *The driver of a long vehicle must drive at least the required minimum distance behind another long vehicle travelling in front of the driver, unless the driver is—*

(a) *driving on—*

(i) *a multi-lane road; or*

(ii) *a length of road in a built-up area; or*

(b) *overtaking.*

Maximum penalty—20 penalty units.

(2) *In this section—*

long vehicle *means a vehicle that, together with any load or projection, is 7.5m long, or longer.*

required minimum distance *means—*

(a) *for a road train—200m; or*

(b) *otherwise—60m.*

Examples of stopping distances

Vehicle Speed	Stopping distance (metres)	
	Car	Truck
60km/h	73	83
70km/h	91	105
80km/h	111	130
90km/h	133	156
100km/h	157	185

Specific Heavy Vehicle Signs

Regulatory signs

Regulatory signs inform you of traffic laws and regulations—they tell you what you, as a Queensland road user, must do by law in different situations (where it may not be otherwise obvious). Regulatory signs also include parking zone signs and can appear with supplementary signs.

Obeying these signs will help to protect:

- you
- your passengers
- other motorists
- cyclists
- pedestrians.

Regulatory signs come in 4 distinct shapes:

- octagons
- rectangles
- circles
- triangles.

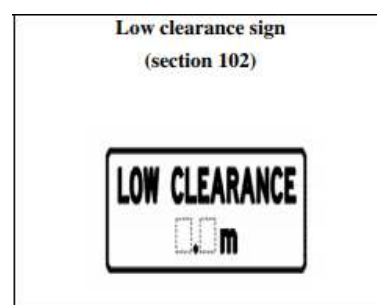
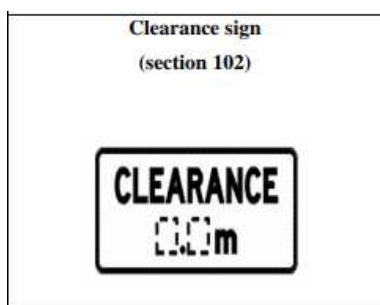
As a road user, you must obey all instructions on regulatory signs or risk getting a fine and points deducted from your licence. Local councils may have local restrictions relating to parking times and would be shown on or near the sign.

Queensland Road Signs applicable to Heavy Vehicles

Transport Operations (Road Use Management—Road Rules) Regulation 2009

Clearance and low clearance signs

You must ensure the highest point of your vehicle is less than the height shown on the sign. If your vehicle is higher you must not drive through.



A detour sign will show a different route for vehicles that are too tall. (Section 102)

102 Clearance and low clearance signs (1) A driver must not drive past a clearance sign, or a low clearance sign, if the driver's vehicle, or any vehicle connected to it, is higher than the height (in metres) indicated by the sign. Maximum penalty—40 penalty units. (2) In this section— vehicle includes any load carried by the vehicle.

Low clearance x m sign

This sign warns you a height clearance restriction is ahead for a:

- bridge
- underpass, or
- other structure.

A regulatory low clearance sign will be displayed on these structures.

You must ensure the height of your vehicle is under the height measurement on the sign.

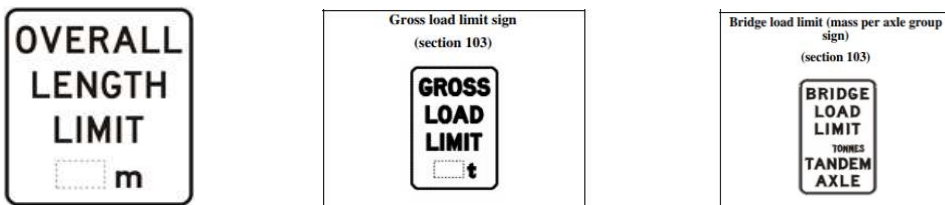
If your vehicle is higher than the low clearance height, you must not drive through. Use an alternative route.

Bridge load limit signs

You must not drive past these signs if your vehicle weighs more than the amount shown on the sign.

This restriction applies to heavy vehicles approaching a bridge. (Section 103)

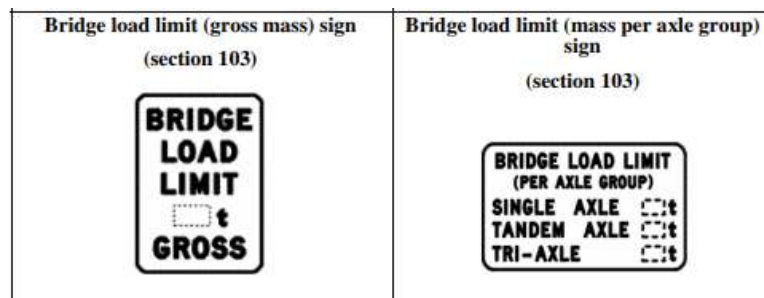
103 Load limit signs (1) A driver must not drive past a bridge load limit (gross mass) sign or gross load limit sign if the total of the gross mass (in tonnes) of the driver's vehicle, and any vehicle connected to it, is more than the gross mass indicated by the sign. Maximum penalty—20 penalty units. (2) A driver must not drive past a bridge load limit (mass per axle group) sign if the mass (in tonnes) carried by an axle group of the driver's vehicle, or any vehicle connected to it, is more than the mass indicated by the sign for the axle group. Maximum penalty—20 penalty units



Gross load limit signs

You must not drive past these signs if your vehicle weighs more or is longer than what is shown on the sign.

A detour sign will show a different route for vehicles that are too long or heavy (Section 103)

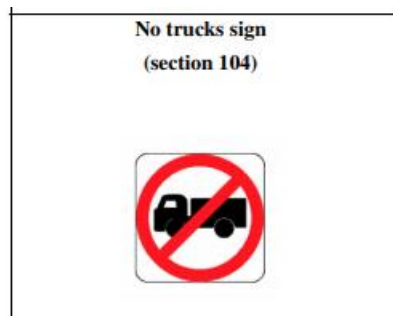


No trucks sign

A truck driver must not drive past a no trucks sign. (section 104)

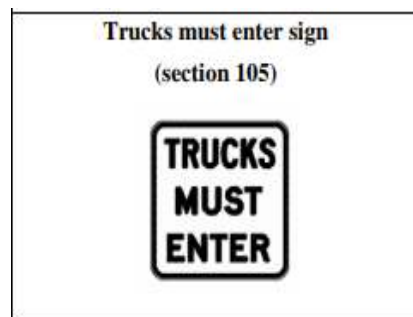
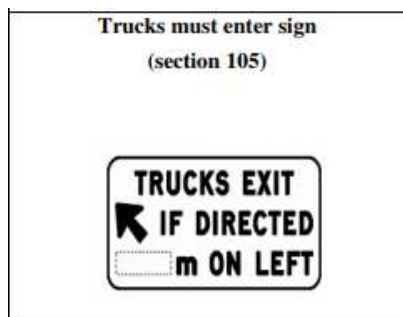
104 No trucks signs (1) A driver (except the driver of a bus) must not contravene a no trucks sign that has information on or with it indicating a mass if the GVM of the driver's vehicle (or, if the driver is driving a combination, any vehicle in the combination) is more than that mass. Maximum penalty—20 penalty units. (2) A driver (except the driver of a bus) must not contravene a no trucks sign that has information on or with it indicating a length if the length of the driver's vehicle (or, if the driver is driving a combination, the length of the combination) is longer than that length. Maximum penalty—20 penalty units. (3) The driver of a truck must not contravene a no trucks sign that has no information on or with it indicating a mass or length. Bridge load limit (gross mass) sign Gross load limit sign Bridge load limit (mass per axle group) sign [s 104]

Page 111 Authorised by the Parliamentary Counsel Maximum penalty—20 penalty units. (4) It is a defence to a charge under subsection (1), (2) or (3) for the driver to prove— (a) the destination of the driver's vehicle was on or near the road on which the no trucks sign was located; and (b) the driver— (i) could not reach the vehicle's destination by another route; or (ii) could reach the vehicle's destination by another route only by contravening another no trucks sign in a way mentioned in subsection (1), (2) or (3). (5) For subsections (1) to (4), a driver contravenes a no truck sign by— (a) if the sign applies to 1 or more, but not all, marked lanes on a road—driving in a marked **lane** while the sign applies to the lane; or (b) otherwise—driving past the sign. (6) Subsections (1) to (3) do not apply to a driver of a motorised caravan on the Brisbane Urban Corridor or on the part of the Ipswich Motorway between Granard Road and the Albert Street pedestrian bridge at Goodna.



Trucks must enter

105 Trucks must enter signs If the driver of a truck drives past a trucks must enter sign, the driver must enter the area indicated by information on or with the sign. Maximum penalty—20 penalty units.



Trucks must use low gear

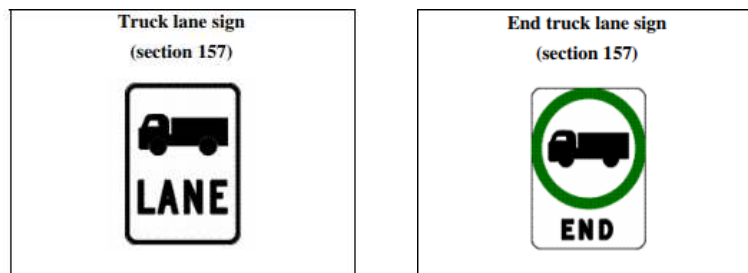
These signs apply to all vehicles with a GVM greater than 4.5 tonnes.

108 Trucks and buses low gear signs (1) If the driver of a truck or bus is driving on a length of road to which a trucks and buses low gear sign applies, the driver must drive the truck or bus in a gear that is low enough to limit the speed of the truck or bus without the use of a primary brake. No buses sign Buses must enter sign [s 109] Transport Operations (Road Use Management—Road Rules) Regulation 2009 Part 9 Roundabouts Page 114 Current as at 14 December 2018 Authorised by the Parliamentary Counsel Maximum penalty—20 penalty units. (2) Subsection (1) does not apply to the driver of a bus if information on or with the sign indicates that it applies only to trucks. (3) A trucks and buses low gear sign on a road applies to the length of road beginning at the sign and ending— (a) if information on or with the sign indicates a distance— at that distance on the road from the sign; or (b) in any other case—at an end trucks and buses low gear sign on the road.



Truck Lanes

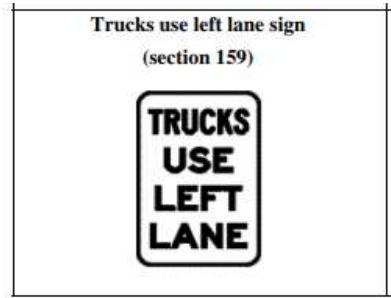
157 Truck lanes (1) A driver must not drive in a truck lane, unless— (a) the driver is driving a truck; or (b) the driver is permitted to drive in the truck lane under section 158. Maximum penalty—20 penalty units. (2) A truck lane is a marked lane, or the part of a marked lane— (a) beginning at a truck lane sign; and (b) ending at an end truck lane sign



Marked Lanes

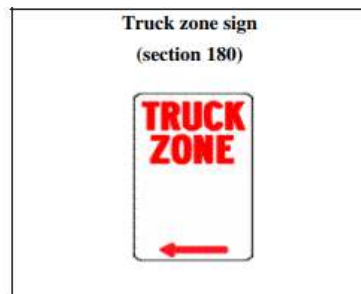
159 Marked lanes required to be used by particular kinds of vehicles (1) If information on or with a traffic sign applying to a length of road indicates that a vehicle of a particular kind must drive in a particular marked lane, a driver driving a vehicle of that kind on the length of road must drive in the indicated lane, unless— (a) the driver is avoiding an obstruction; or (b) the driver is obeying a traffic control device applying to the indicated lane; or (c) the driver is permitted to drive in the indicated lane and also another marked lane under this regulation; or (d) the driver is intending to turn off the road or to make a U-turn and, in order to do so safely without disrupting other vehicles on the road, it is necessary to position the [s 160] Transport Operations (Road Use Management—Road Rules) Regulation 2009 Part 11 Keeping left, overtaking and other driving rules Current as at 25 August 2017 Page 169 Authorised by the Parliamentary Counsel vehicle in another lane before starting or making the turn. Maximum penalty—20 penalty units. (2) A traffic sign mentioned in this section that is on a road applies to the length of road beginning at the sign and ending at the nearest of the following— (a) a traffic sign or road marking on the road that indicates that the first traffic sign no longer applies; (b) the next intersection on the road; (c) if the road ends at a T-intersection or dead end—the end of

the road. Examples of a traffic sign mentioned in the section and a traffic sign indicating that the first traffic sign no longer applies



Truck Zones

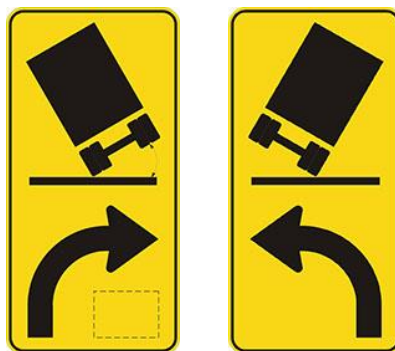
180 Stopping in a truck zone (1) A driver must not stop in a truck zone, unless the driver is driving a truck that is dropping off, or picking up, passengers or goods. Maximum penalty—20 penalty units. (2) A truck zone is a length of a road to which a truck zone sign applies.



Tilting truck signs

This sign warns that trucks may tip over when driving around the curve of the road or when making a turn.

The sign may show the recommended speed limit for heavy vehicles to drive.



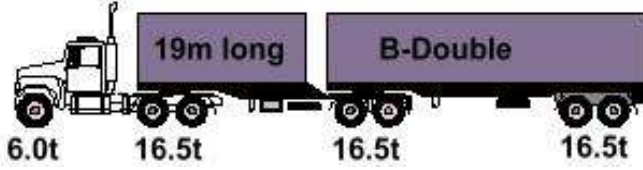
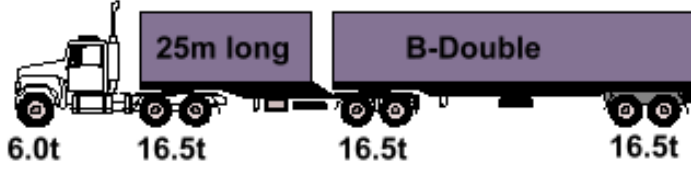
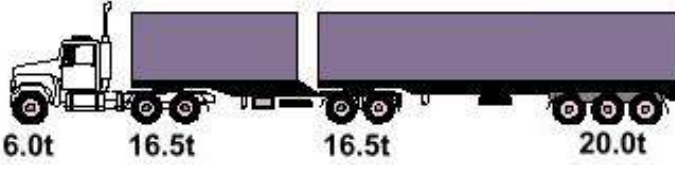

B Double Dimensions

National Heavy Vehicle Regulator Common Heavy Freight Vehicle Configurations

Disclaimer: This diagram shows some of the common heavy vehicle combinations used in Australia. Other heavy vehicle configurations may not be represented. The mass and length limits shown are from the Heavy Vehicle (Mass, Dimension and Loading) National Regulation (the MDL Regulation) and are provided for general guidance only. These limits are available only to vehicles that comply with all other regulatory requirements (e.g. width and height limits, tyre width, vehicle standards, load restraint, suspension type etc). In some circumstances, other mass concessions and length limits may also be available. The NHVR website provides links to the MDL Regulation and to national and state Notices which may apply, depending on individual circumstances. For further information, contact the NHVR at 1300 MYNHVR (1300 696 487) or inf@nhvr.gov.au or www.nhvr.gov.au/contact-us

	Description	Maximum Length (metres)	Maximum Regulatory Mass under GML (tonnes)	Maximum Regulatory Mass under CML (tonnes)	Maximum Regulatory Mass under FML (tonnes)
1. COMMON RIGID TRUCKS - GENERAL ACCESS					
(a)	2 Axle Rigid Truck	≤ 12.5	15.0	CML does not apply	-
(b)	3 Axle Rigid Truck	≤ 12.5	22.5	23.0	-
(c)	4 Axle Rigid Truck	≤ 12.5	26.0	27.0	-
(d)	4 Axle Twinsteer Rigid Truck	≤ 12.5	26.5	27.0	-
(e)	5 Axle Twinsteer Rigid Truck	≤ 12.5	30.0	31.0	-
2. COMMON SEMITRAILER COMBINATIONS - GENERAL ACCESS					
(a)	3 Axle Semitrailer	≤ 19.0	24.0	-	-
(b)	4 Axle Semitrailer	≤ 19.0	31.5	32.0	32.0
(c)	5 Axle Semitrailer	≤ 19.0	35.0	36.0	37.5
(d)	5 Axle Semitrailer	≤ 19.0	39.0	40.0	40.0
(e)	6 Axle Semitrailer	≤ 19.0	42.5	43.5	45.5
3. COMMON RIGID TRUCK AND TRAILER COMBINATIONS (General access when complying with prescribed mass and dimension requirements)					
(a)	2 Axle Truck and 2 Axle Dog Trailer	≤ 19.0	30.0	-	-
(b)	2 Axle Truck and 2 Axle Pig Trailer	≤ 19.0	30.0	CML does not apply	-
(c)	3 Axle Truck and 2 Axle Dog Trailer	≤ 19.0	40.5	41.0	-
(d)	3 Axle Truck and 2 Axle Pig Trailer	≤ 19.0	37.5	CML does not apply	-
(e)	3 Axle Truck and 3 Axle Dog Trailer	≤ 19.0	42.5	43.5	-
(f)	3 Axle Truck and 3 Axle Pig Trailer	≤ 19.0	40.5	CML does not apply	-
(g)	3 Axle Truck and 4 Axle Dog Trailer	≤ 19.0	42.5	43.5	-
(h)	4 Axle Truck and 3 Axle Dog Trailer	≤ 19.0	42.5	43.5	-
(i)	4 Axle Truck and 4 Axle Dog Trailer	≤ 19.0	42.5	43.5	-
4. COMMON B-DOUBLE COMBINATIONS - CLASS 2					
(a)	7 Axle B-double	≤ 19.0	55.5	57.0	57.0
(b)	8 Axle B-double	≤ 26.0	59.0	61.0	62.5
(c)	8 Axle B-double	≤ 26.0	59.0	61.0	62.5
(d)	9 Axle B-double	≤ 26.0	62.5	64.5	68.0
5. COMMON TYPE 1 ROAD TRAINS - CLASS 2					
(a)	9 Axle A-double	≤ 36.5	72.0	74.0	74.0
(b)	11 Axle A-double	≤ 36.5	79.0	81.0	85.0
(c)	12 Axle A-double	≤ 36.5	82.5	84.5	90.5
(d)	12 Axle Modular B-triple	≤ 35.0	82.5	84.5	90.5
(e)	12 Axle B-triple	≤ 36.5	82.5	84.5	90.5
(f)	14 Axle AB-triple	≤ 36.5	99.0	101.0	107.5
(g)	15 Axle AB-triple	≤ 36.5	102.5	104.5	113.0
(h)	11 Axle Rigid Truck and 2 Dog Trailers	≤ 36.5	88.5	90.5	91.0
6. COMMON TYPE 2 ROAD TRAINS - CLASS 2					
(a)	16 Axle A-triple	≤ 53.5	115.5	117.5	124.5
(b)	18 Axle A-triple	≤ 53.5	122.5	124.5	135.5
(c)	15 Axle AB-triple	≤ 44.0 – Classified by the NHVR as Type 1 when L ≤ 36.5m	102.5	104.5	113.0
(d)	13 Axle Rigid Truck and 2 Dog Trailers	≤ 47.5 – Classified by the NHVR as Type 1 when L ≤ 36.5m	95.5	97.5	102.0
(e)	17 Axle BAB-Quad	≤ 53.5	119.0	121.0	130.0
(f)	18 Axle BAB-Quad	≤ 53.5	122.5	124.5	135.5
(g)	17 Axle ABB-Quad	≤ 53.5	119.0	121.0	130.0
(h)	18 Axle ABB-Quad	≤ 53.5	122.5	124.5	135.5

*Add one tonne if twinsteer axle group is load sharing. The mass of a dog trailer shall not exceed the mass of the towing vehicle under Schedule 1, Part 1, section 2(4) of the Heavy Vehicle (Mass, Dimension and Loading) National Regulation.
Please note, additional limits are allowed for steer axles under Schedule 1, Part 2 of the Heavy Vehicle (Mass, Dimension and Loading) National Regulation. © Copyright National Heavy Vehicle Regulator 2018, creativecommons.org/licenses/by-sa/3.0/au

Vehicle Type	General Mass Limits (Tonnes)
	55.5
	55.5
	59.0
	62.5

Road Train Information

Length of Combinations

- 2 Trailers - 36.5 metres (WA, SA, QLD, NT, NSW)
- 3 Trailers - 53.5 metres (WA, SA, QLD, NT)

NOTE: Trailers must not differ more than **3 metres** in length from each other.

The maximum allowable off tracking is not to exceed 100mm either side of the hauling unit, while travelling in a straight line on a level, smooth surface.

Weights

- 2 Trailers - 79 tonne all states (except Victoria)
- 3 Trailers - 115.5 tonne all states, unless a permit grants special permission. (Except Victoria & NSW)

Converter Dollies

- The converter dolly-towing eye is to be permanently marked to be legal.
- Length of lead between the towing eye and the pivot point of the axles on the converter dolly is: Minimum of 3 metres Maximum of 5 metres
- The towing 'A' frame angle must not differ more than 5 degrees from Dolly to Ring feeder.
- It is important to check the bushes at the end of 'A' frame of the converter dolly for wear and movement.
- Before coupling ensure the turntable is clean (free from sand etc).

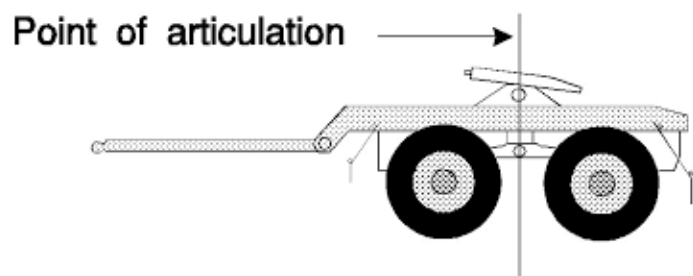
Ring feeder

- The Ring feeder is to have a 'D' rated pin AS 2213-1984
- The Ring feeder must be 50mm diameter and this must be matched with a 50mm ring. (A 40mm pin is not allowed in a 50mm eye).
- Sizing collars are no longer permissible.
- There is to be no more than 4mm wear between the ring and the pin.
- The Ring feeder must have a safety locking pin and this pin must be visible in the locked position.

Converter Dollies:

Brakes

When towing a trailer with a converter dolly attached only connect the supply line to release the maxi-brakes (spring brakes), do not connect the control line as this may cause the brakes to lock up, even under normal braking.



Warning Signs

B Double Sign

Where the vehicle overall length is more than 22 meters, the converter dolly must have a LONG VEHICLE sign fitted to the rear of the dolly.



227B Warning sign not to be displayed if not required by law

A person must not drive a vehicle displaying an oversize warning sign unless—

- (a) the person is required under the Act or another Act to display the sign; or*
- (b) the vehicle is temporarily in Queensland on a journey from another State and the sign must be displayed on the vehicle under the law of the other State.*

Maximum penalty—20 penalty units.

Road Train Sign

- A warning sign shall be affixed in a horizontal position to the front of the hauling unit and to the rear of the rear most trailers of all road trains.
- The sign shall consist of retro-reflective yellow background not less than 1200mm wide by 250mm high with the legend '**ROAD TRAIN**' in black letters 180mm high.
- The front warning sign shall be fixed in such a way that it is not below the bumper bar of the hauling unit.
- The rearmost warning sign is to be no more than 3 meters above ground level and no less than 1.8 meter.
- No reflector signs other than the '**ROAD TRAIN**' warning sign, except as permitted by law shall be affixed to the front of any road train.
- The warning sign shall not obscure any light, registration plate or other safety device.
- A '**ROAD TRAIN**' warning sign shall not be displayed on any vehicle unless such vehicle is operating as a road train.



B Double Rating

The Compliance modification plates fitted to the prime mover will indicate the code **S9** for a B Double or **S11** for a road train. **Note:** not all prime movers will display this information if the prime mover was first registered as a B Double straight form the dealer on first registration.

Licence Requirements

The driver of a prime mover and semi-trailer combination who tows an un laden converter dolly in Qld is not required to hold a multi combination licence. Other States and Territories have different rules regarding this – please check with them individually.

Coupling and Inspection of Trailers

- Ensure that you check with the State authority in which you intend to operate as to the requirements for coupling of trailers.
- Trailers must not vary in length more than 3 meters.
- The lightest trailer must be at the rear.
- Always check as to whether a yearly roadworthy is required.

Speed Limits

- 2 Trailers - 100kph unless otherwise stipulated on the gazette or permit (not including Road Train)
- 3 Trailers – 90kph the truck must be gear and speed limited.

Air Hose Connectors

- Road train vehicles are required to have polarised hose connectors.
- In WA it is mandatory to have clear bore fittings to allow air to travel the greater distance with less restrictions and achieve optimum braking.

Uncoupling and Coupling

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

Uncoupling a semi-trailer (LAP)

Step 1

1. Park vehicle on flat level ground
2. Engage park brake (maxi brakes)
3. Put on hazard lights

Step 2

4. Lower landing legs – ensure that they are high enough to enable you to pull away from the trailer successfully

Step 3

5. Disconnect the air and electrical lines – don't forget to turn off the taps

Step 4

6. Pull handle to release turntable jaws

Step 5

7. Drive forward slowly to ensure the trailer is disconnected correctly.

In summary when uncoupling remember LAP (legs, air, pin)

Coupling a Semi-Trailer (PAL)

Step 1

1. Position prime mover in front of trailer/s
2. Put hazard lights on
3. Reverse up slowly to trailer – stop when trailer is inline with back of prime mover
4. Engage park brake (maxi brakes)

Step 2

5. Visually check the pin is lined up to the jaws and that the trailer height is correct with the turntable

Step 3

6. Reverse slowly - stop when turntable is under skid plate (but not touching pin) – visually check pin alignment and raise legs to 50 mm of ground – reverse back until you hear the jaws lock onto the pin on the trailer
7. Perform a “tug test”

Step 4

8. Connect the air and electrical lines – don't forget to turn on the taps

Step 5

9. Raise landing legs fully – stow away handle

Step 6

10. Check lights are working

Step 7

11. Wait for air pressure to build up in trailer and drive forward slowly – ensure you check that trailer wheels are rolling

Step 8

12. Complete a trailer brake test.

In summary when coupling remember PAL (pin, air, legs)

What is a Tug Test?

The importance of a ‘tug test’ to check the trailer is locked onto the prime mover and that the connecting pin is secure. Select first gear and try to move forward with the trailer brakes on. The prime mover should not move forward.

Communications

In this world of mobile phones, unlimited Internet access, and text messaging, the old fashioned two-way radio might seem a bit out of date. Professional drivers still use the CB radio communication for a variety of reasons, and electronics companies are still manufacturing CB's and other electronic communication devices just for truckers.

Truck Drivers Still Need the UHF or Two Way

Most truck drivers find the UHF at an advantage over the mobile phone for a variety of reasons. UHF or Two Way allows truckers to communicate with other trucks that are driving along the same road or passing. Channel 40 is used on the highway and most major roads. This way, truckers can get important information about what lies ahead in their drive. Drivers can also signal truck stops that they are intending to pull into a service station or a weigh station. Drivers also often need UHF to communicate their official trucking business, like picking up or receiving loads.

Certain protocols still exist for using the UHF such as:

- Don't swear
- Hands free only
- Don't use in restricted areas
- Keep radio on during working hours
- Indicate "ROGER" that you have received a message

Satellite Communication / Mobile Phone

A transport company may install a state-of-the-art satellite system into vehicles for ready communication between dispatchers and employees. The truck driver will have an in-cab keyboard and dashboard monitor for access to messages and up-to-date information. This is especially important in remote areas. Transport company dispatchers and office staff can reach a truck driver that carries a mobile phone in most areas of the country. Text messaging also gives the company access to updates from the driver and vice versa. The use of a mobile phone while driving is an offence in all States and Territories.

Wireless Internet

A transport company can send emails, orders and pertinent details to a truck driver through the Internet. Truck drivers with laptops have access to Wi-Fi at motels, truck stops, coffee shops and restaurants. Motels with a communication office allow patrons to use on-site computers for Internet access, and many motels and hotels offer in-room Internet connections.

Accessing Travel Conditions

Prior to starting your journey, you should check the travel conditions for accidents or emergencies, this information may be found at:

- RACQ
- GPS – Satellite Navigation systems
- Traffic and Travel Information 131940
- Transport Websites

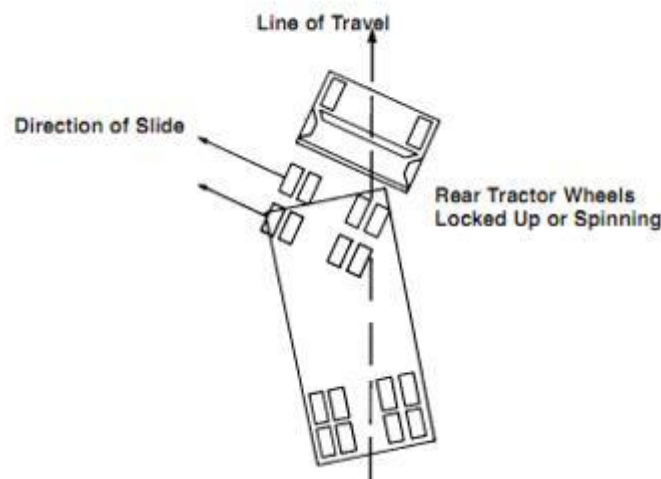
Skid Control and Recovery

A skid happens whenever the tires lose their grip on the road. This is caused by one of four ways:

- **Over-braking** - Braking too hard and locking up the wheels. Skids also can occur when using the speed retarder when the road is slippery.
- **Over-steering** - Turning the wheels more sharply than the vehicle can turn.
- **Over-acceleration** - Supplying too much power to the drive wheels, causing them to spin.
- **Driving too fast** - Most serious skids result from driving too fast for road conditions. Drivers who adjust their driving to conditions do not over-accelerate and do not have to over-brake or over-steer from too much speed.

By far the most common skid is one in which the rear wheels lose traction through excessive braking or acceleration. Skids caused by acceleration can happen on wet roads, gravel, ice or snow.

Taking your foot off the accelerator (if it is very slippery, pushing the clutch in can easily stop them. Otherwise, the engine can keep the wheels from rolling freely and regaining traction). Then straighten your wheel and when traction is regained, re-commence braking and steering more gently.



Drive Wheel Skids

Rear-wheel braking skids occur when the rear-drive wheels lock. Because locked wheels have less traction than rolling wheels, the rear wheels usually slide sideways in an attempt to “catch up” with the front wheels. In a bus or straight truck, the vehicle will slide sideways in a “spin out.” With vehicles towing trailers, a drive-wheel skid can let the trailer push the towing vehicle sideways, causing a sudden jackknife

Front Wheel Skids

Driving too fast for conditions causes most front-wheel skids. Other causes are lack of tread on the front tires, and cargo loaded so not enough weight is on the front axle. In a front-wheel skid, the front end tends to go in a straight line regardless of how much you turn the steering wheel. On a very slippery surface, you may not be able to steer around a curve or turn.

When a **front-wheel skid** occurs, the only way to stop the skid is to let the vehicle slow down.

- Stop turning and/or braking so hard.
- Slow down as quickly as possible without skidding.

Do the following to correct a drive-wheel braking skid:

- **Stop braking** - This will let the rear wheels roll again and keep the rear wheels from sliding any further. If on ice, push in the clutch to let the wheels turn freely.
- **Turn quickly** - When a vehicle begins to slide sideways, quickly steer in the direction you want the vehicle to go down the road. You must turn the wheel quickly.
- **Counter-steer** - As a vehicle turns back on course, it has a tendency to keep right on turning. Unless you turn the steering wheel quickly the other way, you may find yourself skidding in the opposite direction.

Learning to stay off the brake, turn the steering wheel quickly, push in the clutch and counter-steer in a skid takes a lot of practice. The best place to get this practice is on a large driving range or “skid pad.”

The steps to follow to control a skid

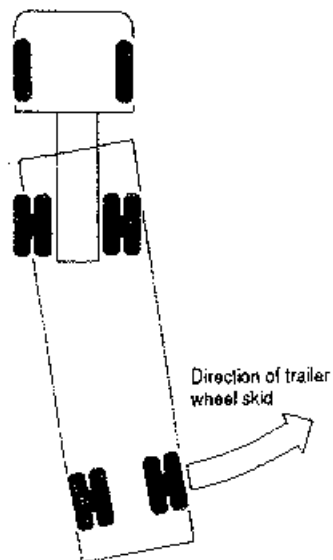


The four steps involved to control a steer wheel skid during acceleration.

1. Come off the accelerator
2. Correct steering accordingly
3. Use the brakes to slow or stop the vehicle
4. After you have stopped the skidding resume acceleration less aggressively

The three steps involved in controlling a steer wheel skid during braking.

1. Come off the brakes
2. Correct steering accordingly
3. After skidding has stopped recommence your braking more gently



The two steps involved in Controlling a trailer wheel skid whilst braking.

1. Come off the brakes
2. Lightly use your accelerator to pull the trailer back into line

General Questions

Read the following Questions and Answer as best as possible

<p>Question 1 Which of the follow are definitions of “work time”</p> <p>A. Cleaning or refuelling B. Supervising loading C. Inspecting a vehicle D. Driving time E. All of the above</p> <p>Question 2 Drivers of heavy vehicles are required to wear seat belts at all time except when reversing or have a medical certificate:</p> <p>A. True B. False C. Only in truck under 12 tonnes GVM</p> <p>Question 3 What is the minimum distance required to be kept between two vehicles 7.5 metres or more in length (including load) travelling outside a built-up area and not travelling in marked lanes:</p> <p>A. 30 metres B. 50 metres C. 60 metres D. 100 metres</p> <p>Question 4 If you stop your truck when there is no one else inside the vehicle and you move more than 3 metres away from the vehicle, you must, amongst other things:</p> <p>A. Turn the motor off and remove the keys B. Wind up the windows C. Turn on the hazard warning lights</p> <p>Question 5 What is the legal blood alcohol level for a driver of a heavy vehicle?</p> <p>A. 0.05% B. 0.08% C. 0.00%</p>	<p>Question 6 All heavy vehicles must carry 3 portable warning signs if the vehicle GVM exceeds:</p> <p>A. 8 tonnes B. 10 tonnes C. 12 tonnes</p> <p>Question 7 A truck may stop in a loading zone to load/unload for a maximum period of</p> <p>A. 10 minutes B. 15 minutes C. 30 minutes D. Depends on the time limit that is posted</p> <p>Question 8 If the driver stops on a road, portable warning signs must be used:</p> <p>A. Only in a built-up area B. Only outside a built-up area C. Both inside and outside built-up areas</p> <p>Question 9 It is an offence for a driver of a heavy vehicle to drive with a blood alcohol concentration level in excess of?</p> <p>A. Zero B. .03% C. .05%</p> <p>Question 10 What is the maximum height that a vehicle or general freight trailer</p> <p>A. 3.4 metres B. 4.3 metres C. 4.2 metres</p>
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Question 11

When driving a heavy vehicle, it is not compulsory to have a left hand side mirror:

- A True
- B False

Question 12

When driving a truck and you see this sign, it means:



- A No Entry
- B Entry only if unloading

Question 13

There are times you have to reverse the vehicle. How far is an acceptable distance:

- A. Only as far as is reasonable for the circumstances
- B. Depends on the time of the day
- C. 25 metres

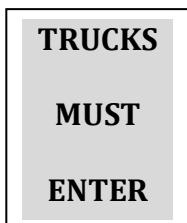
Question 14

The required distance your long vehicle (7.5 metres or more in length) must keep behind another long vehicle when driving in a road train area is:

- A. 60 metres
- B. 200metres
- C. 250mefres

Question 15

What does this sign mean:



- A. You must enter a associated area if unloading
- B. You must enter only if you feel tired.
- C. You must enter the area
- D. Both B&C

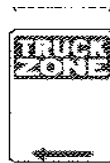
Question 16

If your vehicle drops oil or grease on the road, do you have any obligation:

- A. No
- B. Yes you must advise the authorities
- C. Yes you must take action to stop it Dropping on the road

Question 17

This sign means the driver of a truck”



- A. may park in this zone
- B. may stop in this zone to load or unload goods or passengers
- C. may stop in this zone to comply with log book requirements

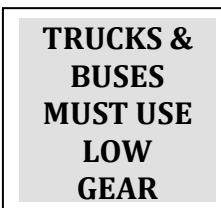
Question 18

What does a continuous yellow edge line mean:

- A. You are not permitted to stop the vehicle
- B. may stop briefly and unload the
- C. may stop and unload for no longer than 5 minutes

Question 19

When this sign is displayed you must:



- A. select 1st gear
- B. select a suitable gear and use the vehicle’s primary (normal) brakes
- C. select a suitable gear that does not require the use of the vehicle’s primary (normal) brakes

Question 20

What is the maximum allowable working time for a driver in any 5.5-hour period under standard fatigue hours?

- A. 5.25 hours
- B. 6 hours
- C. 7 hours

Question 21

The driver of a long/heavy vehicle must not stop on a road outside a built-up area unless

- A. the vehicle is on the road shoulder
- B. triangles are placed on the road
- C. the vehicle and load does not exceed 10 metres

Question 22

What are the obligations of a driver at a 'No Parking' sign:

- A. Not permitted to stop the vehicle
- B. May stop briefly and unload the vehicle provided the vehicle is not left unattended
- C. May stop and unload for no longer than 5 minutes

Question 23

Where the speed limit is less than 70 km/h and a bus is signalling to leave the kerb, is the driver of a heavy vehicle obliged to give way to the bus:

- A. No
- B. Yes, if a 'Give Way to buses' sign is on the rear of the bus
- C. Yes, but only if it is a school bus

Question 24

A driver wishing to turn right in a vehicle more than 7.5m in length and displaying a 'Do not overtake turning vehicle' sign on a road without marked lanes, may approach and enter an intersection from the left side of the road:

- A. True
- B. False

Question 25

What is the minimum amount of consecutive rest that a driver of a heavy vehicle with a GVM greater than 12 tonnes, must take in a period of 24 hours under standard fatigue hours.

- A. 7 hours
- B. 10 hours
- C. 12 hours

Question 26

The length of time that a heavy/long vehicle (7,5 metres or more in length) may be parked on a road in a built up area is:

- A. Depends on the Local Authority
- B. Depends on the time of day
- C. 1 hour unless otherwise signed
- D. A & C

Question 27

If your load overhangs the side of your trailer by more than 1.2 metres what is the drivers obligations in regards to the load:

- A. Wide load signs & flashing Lights
- B. A bright red/yellow flag at least 450 mm square
- C. A Pilot/ Escort
- D. All The Above

Question 28

In the case of a breakdown or fallen load that is not clearly visible for a least 200 metres, how are the portable triangle's to be displayed:

- A. One in the front, two at the rear
- B. One 15 metres in front, on 5 metres to the side and one 150 metres to the rear
- C. One in front, one at the rear, at least 50 metres and not more than 150 metres and one to the side closest to the traffic

Question 29

What is required when you carry a load:

- A. It should be secured or covered to prevent any part falling from the truck
- B. A permit will be required
- C. Speed is not to exceed 80km/h

Question 30

The driver of a long vehicle (7.5 metres or more in length) intending to turn left at the next intersection, may drive in both the left marked lane and the adjacent lane at the same time, for a distance no further than

- A. 20 metres
- B. 50 metres
- C. No limit

Giving way at intersections with two STOP signs or GIVE WAY signs

A STOP sign is not 'more powerful' than a GIVE WAY sign when giving way. In the image, once the vehicles have given way to all other vehicles, they must then apply the give way rules to each other.

Vehicle A (blue) must give way to Vehicle B (green) because it is turning right, across the path of Vehicle B (green).



Giving way at uncontrolled crossroads

At an uncontrolled crossroad, you must give way to the right.

Vehicle A (blue) must give way to Vehicle B (green).



Giving way at a T-intersection

If you are driving on the road that ends at a T-intersection, you must give way to all vehicles travelling on the road continuing through the intersection.

Vehicle A (blue) must give way to Vehicle B (green).



Giving way when turning right

If you are turning right at an intersection, you must give way to vehicles coming from the opposite direction that are:

- Driving straight ahead through the intersection
- Turning left at the intersection.

Vehicle B (green) must give way to Vehicle A (blue).



Giving way at a roundabout

At a round about, vehicles must give way to the right at all times.

Giving way when leaving private property

When leaving private property you must always give way to all cars on the road, regardless of their direction of travel.



Load Restraint

The load restraint guide is produced by the National Transport commission – current edition 2018.

- The correct load restraint system must be used to prevent loads moving and to stop loads falling from the vehicle.
- EG - Tie down lashings should have minimum angle of 30 degrees to the horizontal.



The centre of mass of the load should be just forward of the rear axel group to provide even weight distribution across all axels and ensure traction and stability.



Heavy objects should be loaded first and positioned to provide even loading across the deck and shared between axels.



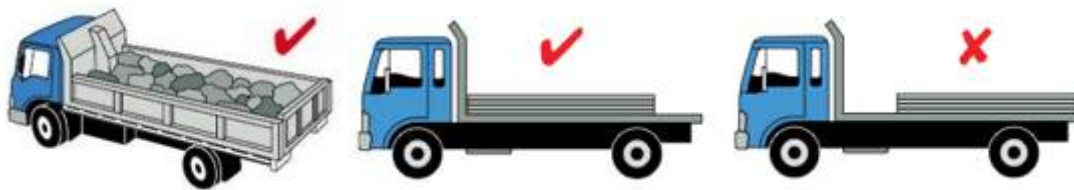
Good weight distribution.



Loading

When loading truck or trailer it is important to consider the following: **The load restraint system must prevent unacceptable load movement and from dislodging off the vehicle.** The “load restraint guide” can be purchased at Shift Training or accessed through the National Transport Commission website: <https://www.ntc.gov.au/heavy-vehicles/safety/load-restraint-guide/>.

Loads can either be contained loads within a tipper truck, box trailer or tanker, or they be heavy loads that are secured by lashings, chains, strops and ropes. Contained loads are the best-restrained loads.



Loose loads, e.g. sand or rocks, must be contained in a tipper body as the solid sides prevent the load from spilling, and they should be covered by tarpaulins to prevent the load from blowing out of the truck.

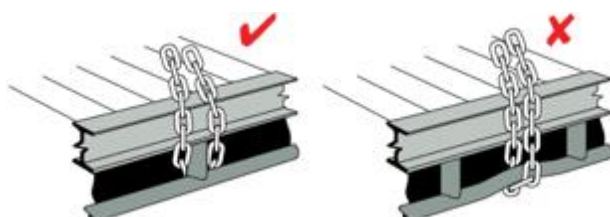
Tarpaulins can be used on their own with ropes only if the load is very light.

Liquids and fine powders should be contained in a tanker. Tankers will often consist of smaller compartments with baffle plates to help stop liquid sloshing around. You should always empty one compartment completely before starting on another compartment, as half-empty compartments are more at risk of the load moving and creating waves, which can push the vehicle forwards under braking, or make it tip.

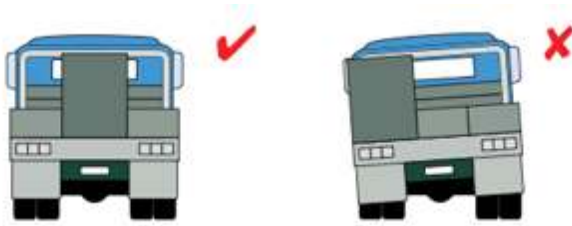
Empty the center compartments first, working outwards to keep the weight balanced.

All other loads must be restrained. It's against the law to drive a vehicle where the load isn't secured and covered.

When using tie downs to restrain a load the angle of the tie down should not be less than 30 degrees to the horizontal otherwise it doesn't place enough downwards force on the load it is restraining.



Weight distribution



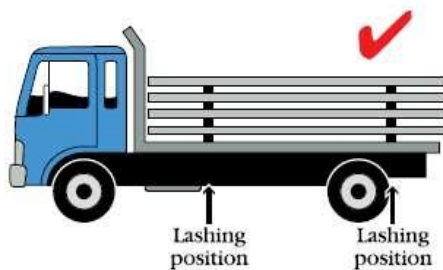
To maintain the handling and balance of the truck, loads should be spread close to the center line and kept as low as possible, with heavier items positioned near the bottom.

Loading a heavier item on one side can cause the chassis frame to twist, or overload the axle housings, wheel bearings and tyres. When braking this could cause the unloaded side to lock up, especially in the wet. On a rigid vehicle if a very heavy small load is placed against the headboard it could cause the chassis to bend. **Very heavy small loads should be placed just over the rear axles and blocked properly.**

Too much weight on the back of the truck can reduce the weight on the front wheels which will give the front wheels much less grip. On bumpy roads the front wheels could be bounced off the ground as the truck pivots on its rear wheels.

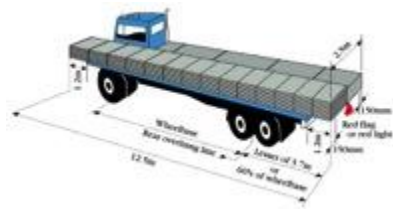
High loads are at greater risk of tipping over. High loads should be transported on a vehicle with a low platform to reduce the center gravity, such as a drop frame or low loader.

Dunnage



Dunnage is packing placed under or between parts of the load so that it can be unloaded with a forklift or lifting slings. It's made of rectangular or square wood that is strong enough to support the load. The correct dunnage position for long rigid loads such as steel pipes is as above as this means they are less likely to move when restrained. The restraints are placed at the same points as the dunnage.

Lengths, widths and heights



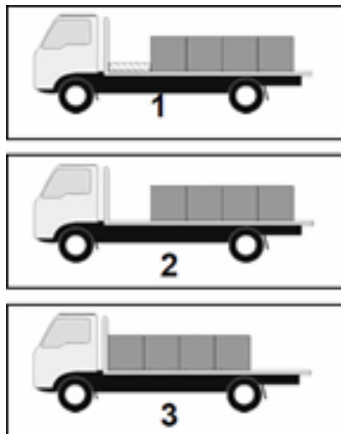
The maximum vehicle length for a rigid vehicle is 12.5m.

The maximum vehicle width is 2.5 metres for vehicles with a gross vehicle mass (GVM) of 4.5 tonnes or more which includes road trains, B-doubles, and heavy, medium and light rigid vehicles. The maximum allowable distance that a load may project on the side of a vehicle, provided the overall width does not exceed 2.5 metres, is 150mm.

The maximum length a load may project in front of a vehicle is 1.2m, and at the rear it must not exceed 3.7m or 60% of the wheelbase or project greater than 1.2m without a red flag or light.

The maximum height of a heavy vehicle (not including livestock carriers, car carriers or double decker buses) is 4.3m.

Load shift



Load shift can be caused by acceleration, braking, cornering, driving on slopes and driving over rough ground.

Blocking

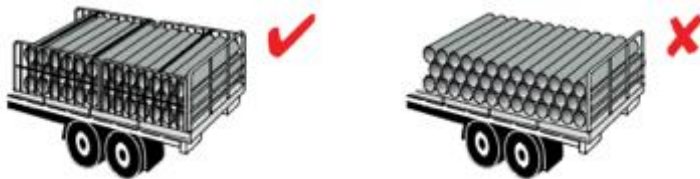
Blocking is where a load is restrained against the headboard or bulkhead and this is the most important part. In the diagram on the left, option 3 is the best way to place the load if the axle weights aren't exceeded, with the bulkiest items up against the bulkhead so that they don't move under braking, which is called load shift. Option 1 also is blocked, but has more weight over the

rear, which can make steering less effective, and option 2 isn't blocked and the load could possibly slide forward under braking.

The majority of the load's sustained force will be under braking, and any load restraint system needs to be able to restrain at least 80% of the load's weight in a forward direction, 20% in a vertical direction and 50% in a sideways or rearwards direction.

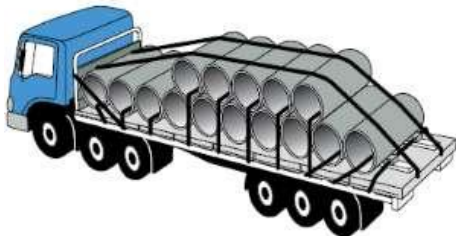
Gates and fences

When small pipes or logs are carried, gates and fences can be used to constrain sideways movement.



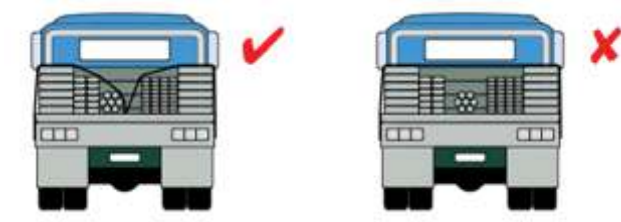
Large pipe loads

All pipes need to be clamped to prevent sideways movement, and the pipes are blocked against the headboard with lashings across the top.



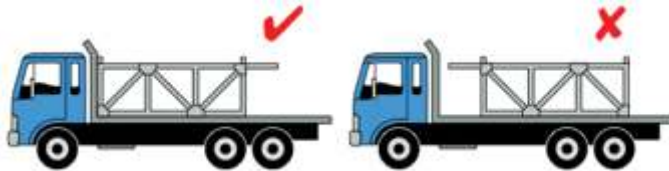
Divided loads

Divided loads are loads divided into two or more stacks to be able to crown them effectively. The lashings will be attached down the middle of the deck.



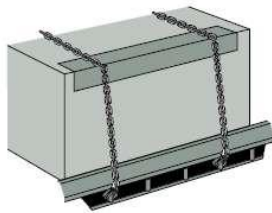
Loads with dangerous projections

Always place loads with dangerous projections in a position to minimum risk to the driver. In the example below, the load is blocked against the headboard. If the load was the other way around there is a projection that could break through the headboard if the truck crashes or brakes heavily.



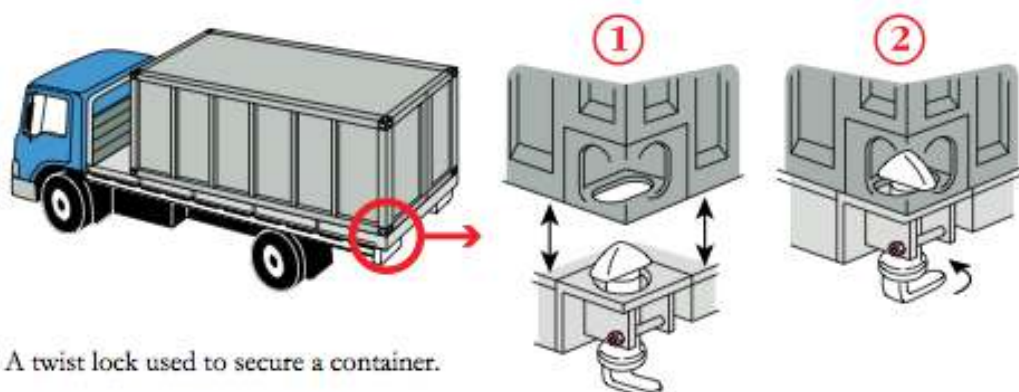
Loads with sharp edges

Loads with sharp edges can wear through lashings and gouge chains. Use projection for the lashings if a load has a hard edge and secure each line separately so that if one lashing fails, the others will hold.

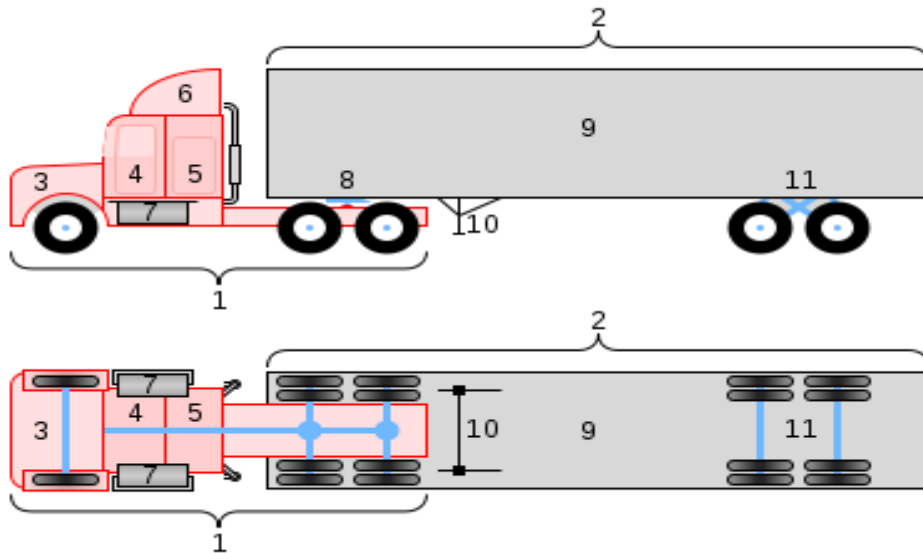


ISO containers (twist locks)

ISO containers are standard sized shipping containers that can be easily loaded onto a truck with a crane. Twist locks secure them. Vehicles without twist locks should not be used to carry these loads if the container contains cargo. If the container is empty it can be chained to a vehicle for transport.



Truck and Trailer Parts



Above is the side view and underside view of a **conventional semi-trailer** with an enclosed Trailer.

Shown in Bold in the underside view are the **axles, drive shaft**, and **differentials**.

The underside view shows the arrangement of the 18 **wheels**.

The legend for labeled parts of the truck is as follows:

1. **Prime Mover**
2. **Trailer** (detachable)
3. **Engine** compartment
4. **Cabin**
5. Sleeper (not present in all trucks)
6. Air dam
7. **Fuel tanks**
8. **Turntable coupling**
9. Enclosed **cargo** space
10. Landing gear - legs for when semi-trailer is detached
11. Tandem axles

Other components include, but not limited to:

Air and electrical leads, Turntable, King Pin, Ring feeder, Jaws, Tow coupling.

Safe Operation of a Heavy Vehicle

When you are turning:

Notes:

- Continuous arrows indicate that you must, wherever practicable, turn your vehicle in the direction shown.
- Broken arrows indicate that you can only turn in the direction shown if it is impracticable to do otherwise, and only if it is safe to do so.

Intersections and junctions

Right from a one-way road, you must approach the intersection or junction as near as practicable to the right boundary of the one-way road (Fig 1)

Right into a one-way road, you must enter as near as practicable to the right boundary of the one-way road (Fig 2);

Left from a two-way road into a two-way road, you must keep as close as practicable to the left kerb (Fig 3).

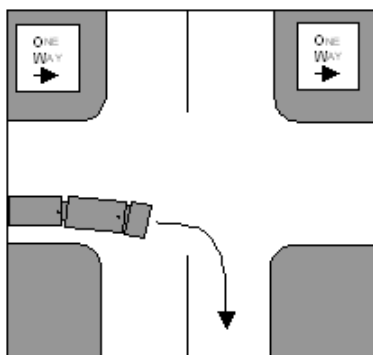


Fig 1

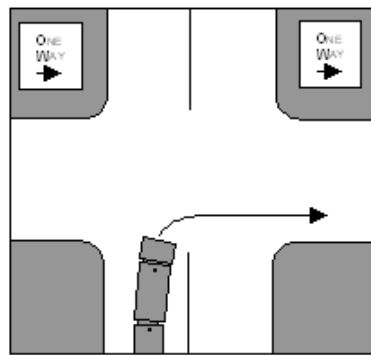


Fig 2

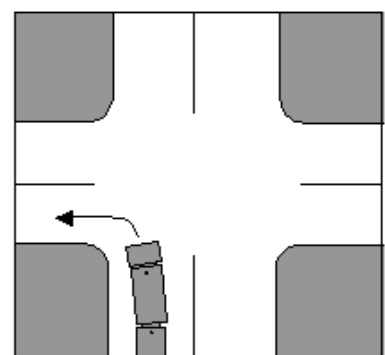


Fig 3

Laned roads

When you are operating on a laned road where turning arrows are marked you must:

Turn only in the direction of the arrows marked on the road (Fig. 4);

Turn only in the direction of the marked arrows and enter the corresponding lane of the other road (Fig. 5).



Fig 4

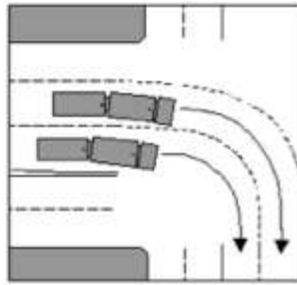


Fig 5

When you are operating on a laned road and turning lanes are provided as an extension of lane lines, you must keep the B-Double in the turning lane while you are turning (Fig. 5).

When you are operating on a laned road and you are turning right from a two-way road into a two-way road, you must not obstruct traffic coming from the opposite direction.

When you are operating on a laned road where turning arrows are not marked, and you are turning:

Right from a laned road, you must begin your turn from the lane that is just to the left of the centre of the road (Fig. 6);

Right into a laned road, you must where practicable, enter the lane nearest to the centre of the road (Fig.6);

Left from a laned road, you must begin your turn from the left-hand lane that is as near as practicable to the left side of the road (Fig 7). Alternatively, if your vehicle displays a "DO NOT OVERTAKE TURNING VEHICLE" sign, you can turn from a marked lane next to the left lane (Fig 7a).



Fig 6

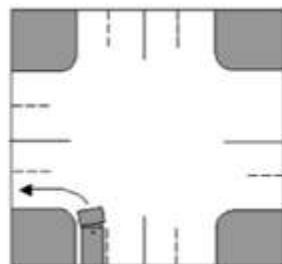


Fig 7

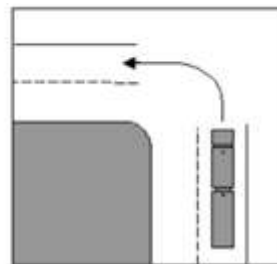


Fig 7a

Unlaned roads

When you are operating on an unlaned road and you are turning right from a two-way road into a two-way road you must, where practicable (Fig 8):

Approach the intersection or junction to the left of and parallel to the center of the road;

Pass to the right of the center of the intersection;

Enter the other road just left of the center.

When you are operating on an unlaned road and you are turning right from a two-way road into a two-way road, you must not obstruct traffic coming from the opposite direction.

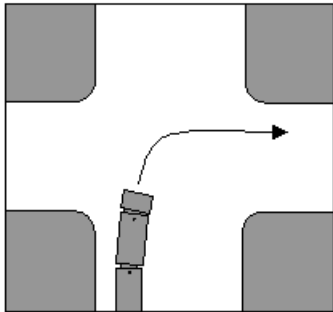


Fig 8

Driveways and Depots

When you are operating on a laned road and turning:

Left into a depot, you must turn from the left lane. Alternatively, if your vehicle displays a "DO NOT OVERTAKE TURNING VEHICLE" sign, you can turn from a marked lane next to the left lane.

Right into a depot, you must turn from the lane that is nearest to the center of the road.

Left out of a depot, you must, where practicable, enter the lane that is nearest the left kerb.

Right out of a depot, you must, where practicable, enter the lane that is nearest the center of the road.

You must not reverse your B-Double into or out of roadways or depots.

When you are operating on an unlaned road and turning:

Left into and/or out of a depot, you must keep as near as practicable to the left kerb (Fig. 9);

Right into a depot, you must approach the entrance to the left of, parallel to and as near as practicable to the center of the road (Fig. 10);

Right out of a depot, you must enter the road by moving to the left of the center of the road

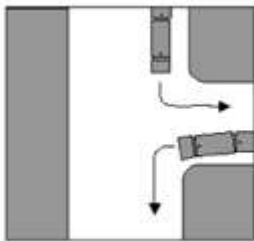


Fig 9

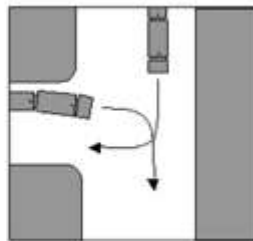


Fig 10

Safe Operation of a Heavy Vehicle Requires Skill

- Accelerating
- Steering
- Reversing
- Gear shifting
- Braking.

Whatever vehicle you drive, all its handling characteristics are affected by the load you carry, including passengers.

Accelerating

Accelerate smoothly and gradually so the vehicle does not jerk. Rough or rapid acceleration may cause your load to shift and damage the drive train on any vehicle.

Early easing off the accelerator can result in a reduction in speed.

When pulling a trailer, the king pin or its coupling could be damaged by rough acceleration.

Rain, snow and gravel

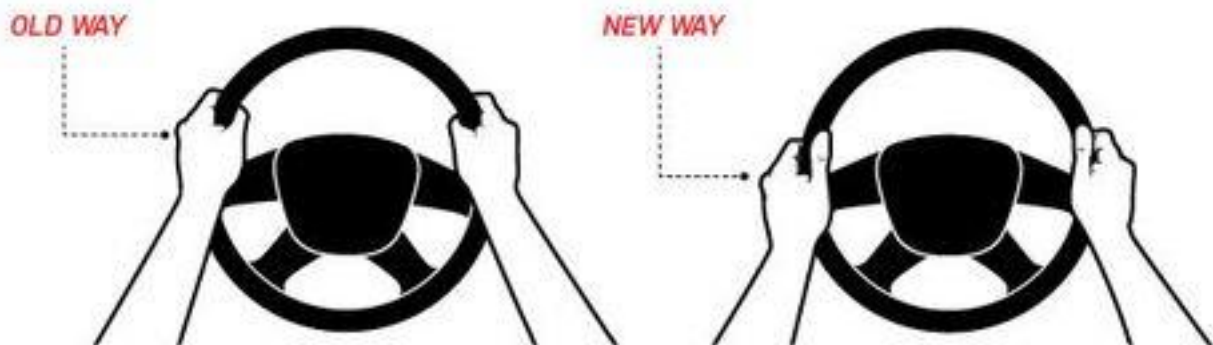
You should accelerate more slowly whenever you drive in situations of rain, snow or gravel. If you over-accelerate, the wheels will spin, and if you are pulling a trailer, it could “jack-knife”, which means the trailer could fold against the towing vehicle in a skidding movement.

Steering

Steering a large vehicle requires more knowledge and skill than driving a car, so follow these tips.

Holding the wheel

Hold the steering wheel firmly with both hands. When you hit a kerb or pot hole, you could lose control of the steering wheel unless you are holding it with two hands. Keep your thumbs clear of steering wheel spokes. A spinning steering wheel can break bones. For safety, never reach through the steering wheel in order to operate controls.



Gear Shifting

When changing gears:

- using a non-synchromesh (**Road Ranger**) - you will be required to demonstrate the correct operation of a clutch to the manufacturer's recommendations.
- Using a synchromesh - you will be required to demonstrate the correct operation of a clutch and gears in a sequential manner or to the manufacturer's recommendations.
- Using an automated gearbox - you will be required to demonstrate the correct operation of to the manufacturer's recommendations.

Engine braking

Jake Breaks

The Engine Brake is a vehicle-slowng device, not a vehicle-stopping device. It is not a substitute for the service braking system.

The vehicle's service brakes must be used to bring the vehicle to a complete stop. However, by appropriately using the engine brake for your slowing needs, the service brakes will remain cool and ready to provide their maximum stopping power when needed.

Operation

The Jacobs Engine Brake depends on the free flow of engine oil for operation, so be sure to let the engine reach a minimum operating temperature of 40°C before switching on the engine brake. Normally, the engine brake is then left in the "On" position whenever you are driving. The exception is when roads are slippery due to poor weather conditions.

The operation of the Engine Brake is fully automatic once turned on. When your foot is off the clutch and your foot is completely removed from the throttle, the engine brake will automatically activate. (There are some systems that will activate only once the brake pedal is depressed.)

When you apply pressure to the throttle, the Engine Brake is deactivated.

To obtain maximum retarding power, use the lowest possible gear without exceeding the recommended engine speed for engine braking.

Best retarding performance is obtained at engine speeds between 2100 rpm and high idle. Below 1700 rpm, retarding power may be significantly reduced.

Exhaust brakes

Exhaust brakes can be very efficient in slowing down a vehicle and helping to control the speed on a downhill, regardless of its size or weight. Exhaust brakes can be used anywhere unless otherwise signed.

Exhaust brakes create backpressure in the cylinders.

This braking system actually closes down the exhaust path and it stops the gases from being eliminated on the exhaust pipe. As a result, backpressure is built in the manifold and in the cylinders, making the engine work backwards and subsequently slowing down the vehicle.



Handling Characteristics

Off Tracking

The maximum allowable off tracking is not to exceed 100mm either side of the hauling unit, while travelling in a straight line on a level, smooth surface.

Maneuverability

The AUSTRROADS requirement is that a B-Double be able to turn 180 degrees between two walls 25 metres apart. This means that B-Double prime movers usually have more turning lock available than a lot of regulation vehicles.

Note: When entering or leaving land abutting a highway, B-Doubles must be driven forwards only.

Cut-in

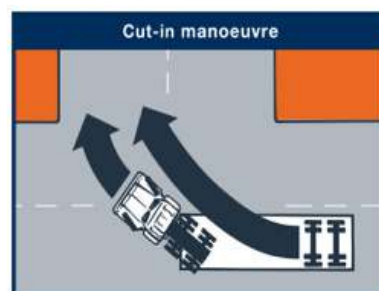
When any vehicle goes around a curve or turn, the rear wheels usually follow a shorter path than the front ones. This is called cut-in. The greater the length of the vehicle and the sharper the turn, the greater the cut-in will be. See the diagram on the below. Therefore the cut-in path for a 26 meter B-double will fall shorter than in 19 meter semi-trailer.

On your approach to a right bend, steer close to the left side of the lane to reduce interference with oncoming traffic.

On your approach to a left bend, steer close to the right side of your lane to make sure that your left wheels stay on the road surface.

Factors Affecting Handling Characteristics

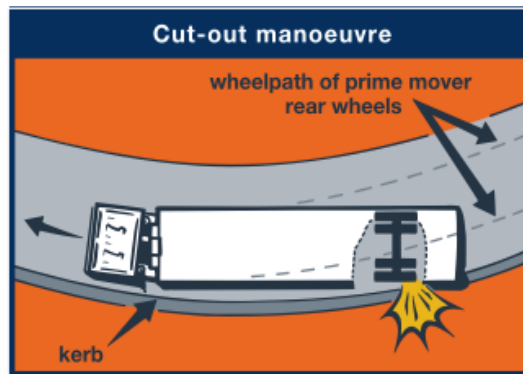
- Uneven surfaces, change of surface (roundabouts / intersections)
- Incorrect loading of trailers.
- Overtaking / passing. Must be careful not to drop off the shoulder due to the camber of the road.
- Over braking on one wheel or trailer, (incorrect brake adjustment or poorly maintained brakes).
- Trailer whip (ring feeder versus turntable).



Cut-Out

The tracking of rear wheels of semi-trailers will vary with the vehicle's speed:

- At low speeds, the rear wheels track inside those of the prime mover
- At high speeds, the rear wheels can track outwards.
- Where the bend has a kerb, the rear wheels may strike the kerb, causing the vehicle to roll over. See the diagram on the right.



Reversing

When reversing a vehicle and trailer, you must use the correct technique.

As it's a difficult maneuver to illustrate, your trainer on the practical day will demonstrate and advise you of the correct reversing technique for the type of vehicle you are driving.

Some Tips for reversing with 2 trailers

- Set up your vehicle so that the trailer is directly behind it, with all wheels pointing straight ahead
- Avoid sharp turns
- Reverse slowly. This allows you to make small corrections as you go so that you stay on course
- Use all your mirrors to see that the trailers are correctly positioned
- Correct any drifting off-course, immediately by turning the steering wheel to the direction you want the B Trailer to go
- Then quickly align the A Trailer to the prime mover
- Repeat as required
- Pull forward if the trailers get too far out of alignment

How to Reverse a B Double

A. Turn steering to right

B. Front of Cab swings to the left

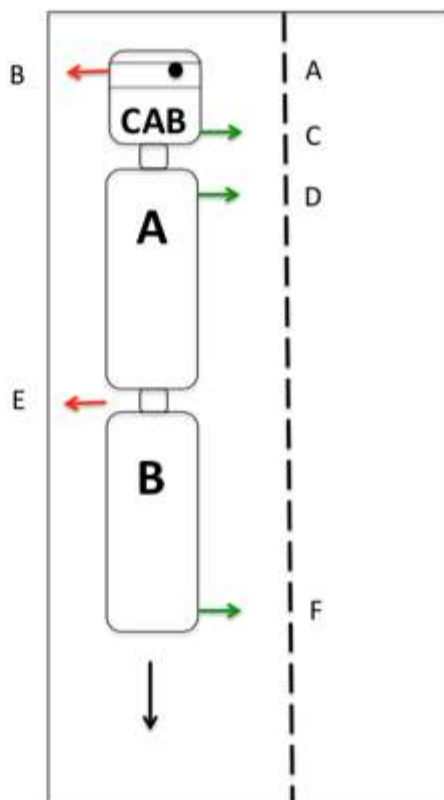
C. Rear of Cab swings to the right

D. Front of the A trailer moves to the right

E. Rear of the A trailer moves to the left and takes the front of the B trailer with it to the left

F. Rear of B trailer moves to the right

Turn steering wheel to the right to make the B trailer go to the right



Changing Gears

Changing gears smoothly and at the right time will help you to keep a steady speed and keep your vehicle as close as possible to the speed of surrounding traffic. If you miss a gear and can't select your desired gear adjust your revs and choose a higher or lower gear – just get a gear! It saves on fuel and engine wear and tear if you change gears at correct engine speeds.

Gear changes made at the wrong engine speeds are bad for:

- The clutch
- The transmission and
- Fuel consumption.

Double-clutching

Vehicles with non-synchromesh gearboxes need to be double-clutched to change gears. With most manual transmissions' gearshifts are quicker and smoother if you double-clutch. You don't need to double-clutch a vehicle with a synchromesh gearbox. To double clutch, check that you do what the vehicle manufacturer's handbook suggests on gear changes, and/or go through the following sequences:

- Press the clutch
- Shift to neutral
- Release the clutch
- Adjust engine RPM (Revolutions Per Minute or revs) to vehicle speed needed for the change to next gear.

With experience, you will learn what the engine should sound like at the best moment for each gear change. Either let the revs die down or press the accelerator pedal to get the revs correct, then:

- Press the clutch again
- Shift to the gear you want
- Release clutch
- Accelerate to required speed.

Double clutching requires practice. If you have trouble engaging your new gear, do not force it, return to neutral, re-adjust your revs with the clutch pedal out, press the clutch pedal and try again.

Knowing when to shift gears There are two ways of knowing when to shift gear. You can use either or both:

- **Engine speed (RPM).** The vehicle manufacturer's handbook will specify maximum and minimum revs and road speed for each gear. Your vehicle may have a tachometer (tacho), which measures engine revs. If so use it.
- **Engine sound.** After a while you will recognise, from the sound of the engine, when to change gear. Changing down gears There are special times when you should change down gears.

Going up hills. You may have enough speed to make it up the hill without changing. But if you start to slow down you must change down gears to prevent the engine from "laboring".

Missing a gear – this can sometimes happen. If you can't select your chosen gear adjust your revs and select a higher gear or go back to the previous gear.

Controlling Your Vehicle

Braking

You must be familiar with all braking devices and how they work for your vehicle. You should know what sort of braking system your vehicle has: whether it has hydraulic brakes or air brakes.

Remember, the heavier a vehicle is, the harder it is to stop and the more time is needed for it to stop. You must know the height, weight and width of your vehicle.

How Brakes Work

Most heavy vehicles do not all use air brakes rather than the hydraulic type brakes fitted to passenger cars. But some rigid vehicles do use hydraulic brakes.

Warning Note

Heavy vehicle brakes are designed to operate most effectively when the vehicle is loaded. When the vehicle is unloaded or only partly loaded the braking performance is very different. So take care and be sure you know how to control the different behaviours of your vehicle, loaded or unloaded.

All brakes

Reducing brake pedal pressure.

As the vehicle slows down, you need less pressure from your foot on the brake pedal to keep slowing down. Ease your foot off the brake pedal, as you slow down to come to a smooth stop.

If you do not ease your foot off the brake pedal, the wheels may lock and cause the vehicle to skid.

Effect of load. The heavier your load, the harder it is to stop and the more distance you need to stop. With a heavy load you must brake earlier and harder.

Braking on hills. Continuous heavy braking on a long hill will cause brake linings to heat up. After a while the brakes will no longer slow the vehicle. This is called “brake fade”. To help reduce brake fade, shift into a lower gear before starting down a hill and use auxiliary brakes or “retarders”.

When going down a hill, you should use brakes to prevent speed build-up before it occurs. Do not wait until speed has built up or it may be too late.

You must select the proper gear before starting down the hill.

You might need to use your service brake going down a hill even when you have selected the correct gear before starting down. If this is the case, use intermittent braking to prevent brake fade. Repeat this as needed.

Braking with an empty vehicle. An empty vehicle, or one with a light load, is very different to handle. You notice this most when braking, steering and going up hills. You may need to adjust your braking if your vehicle is empty.

Hydraulic brakes

Hydraulic brakes consist of a master cylinder, which works like a pump operated by the brake pedal. A vacuum or air booster unit may assist the master cylinder. When the brake pedal is pushed, the master cylinder pumps hydraulic fluid through a pipe to a wheel cylinder (at least one to each brake drum).

The arrangement distributes the pressure of the system to the different sets of wheels so as to keep the vehicle on course.

What this means for the driver is that when the brake pedal is pushed, the piston in each wheel cylinder is pushed out, pressing its brake shoe or pad against the brake drum or disc.

The harder you press the brake pedal, the harder the brakes will work to stop your vehicle.

Large, hydraulic brake vehicles are equipped with emergency brake systems that mostly work off vacuum or booster units. These are automatic systems similar to those in air brake vehicles.

If there is a trailer breakaway or a lack of hydraulic fluid, the Emergency Braking system should stop the vehicle very quickly.

If this happens you will need to be ready to handle a skid, as the emergency brakes will “grab” differently to your standard hydraulic brakes.

Air brakes

Air brakes are often used on heavier and multi-axle vehicles. They need to be drained regularly for water from the air tanks via small release valves.

Pressing the brake pedal opens a valve which releases compressed air from a tank. The air reaches the brakes through air lines and forces the brake shoe or pads against each drum or disc.

The harder the pedal is pushed, the more air is released from the tank and the more pressure is applied at each brake, so the harder the brakes will work to stop your vehicle.

Like hydraulic brakes, air is supplied to the brakes through a distribution system so that the whole rig will stay on course during braking.

In air braking systems on heavy vehicles, a brake ratio valve can sometimes be adjusted. You adjust it according to the weight of different loads. These valves work in different ways so you must check the vehicle manufacturer’s handbook before changing the setting.

Warning Note

Air brakes feel different from hydraulic brakes.

There is a delay time of up to one second for air to reach the brakes after you push the pedal. This means that at 60 km/h you will travel 17 meters from when you begin to push the pedal until the brakes start to work and then it will take further time to stop.

This means you need to think well ahead, and brake much earlier than you would in a passenger car.

Spring-loaded brakes

Most vehicles with air brakes also have spring-loaded brakes, for emergencies and parking. Springs push the brakes on. The springs are held back by air pressure. When there is a serious air loss, the springs are released, and the brakes go on automatically.

Auxiliary brakes or speed retarders

Auxiliary brakes are often fitted to larger vehicles. Auxiliary brakes slow either the engine or the drive train.

Auxiliary brakes or speed retarders are often used during long descents. Many auxiliary brakes are noisy. Try not to use them in built-up areas. You may be fined for excessive noise.

Check the vehicle manufacturer's handbook for the sort of auxiliary brakes used on your vehicle.

Speed retarders are separate from wheel brakes. They come in a number of forms. Speed retarders will only slow, not stop the vehicle.

However, on wet or slippery road surfaces, the use of auxiliary brakes can cause drive wheel lock-up. This can result in a rapid and unrecoverable sideways sliding, and vehicle jack-knifing.

Trailer brakes

The air brakes on a trailer work every time the foot brake is used. A separate hand control brake allows the trailer brakes to be put on without the prime mover brakes being applied.

Trailer brakes may be used when:

- You are stopped at lights
- When changing down a gear while going down a hill
- Starting on a hill.

Be very careful using trailer brakes by themselves at road speeds. The trailer brakes may be used alone but you should try not to use them often, as there is a danger of trailer brakes overheating and fading.

Trailer brake ratio valve

It is very important to adjust the ratio valve whenever your vehicle's load changes. Some prime movers have a ratio valve, which changes the proportion of brake pressure going to the trailer brakes. Read the vehicle manufacturer's handbook carefully to find out how and when to use the ratio valve. Do not assume that you know how to use it.

Slowing or stopping.

Use your brakes first. Then select the right gear to change down into.

Before entering a bend.

You should brake, then change down to a gear that is safe for the bend. You need to provide slight power through the bend to keep the vehicle stable. You can also accelerate out of the bend.

Before turning.

You should brake, then change down to a gear that is safe for the turn. You need to provide slight power for the turn to keep the vehicle stable. You can also accelerate out of the turn.

Before starting down a hill.

Always make sure you are in the proper gear before starting down a hill. Once going down the hill, use your brakes if you need to. Be very careful changing gears going downhill as you may get stuck in neutral and lose control of your speed.

Glossary

HVNL	Heavy Vehicle National Law
NHVR	National Heavy Vehicle Regulator
Tare	Weight of an empty vehicle
GVM	Gross Vehicle Mass
GCM	Gross Combined Mass
TMR	Transport and Main Roads
NTC	National Transport Commission
RTO	Registered Training Organisation
DG	Dangerous Goods
GP	General Purpose Container
KG	Kilograms
MC	Multi Combination
O.D.	Over Dimensional
BFM	Basic Fatigue Management
AFM	Advanced Fatigue Management
ATM	Aggregate Trailer Mass
CoR	Chain of Responsibility

Activities

Please complete the following two activities: (use NHVR journey planner or Multi – Combination routes in Qld.)

After you pick up your trailers plan a journey using **no toll** roads and **B Double roads**:

Start at:	Magnesium Dr Crestmead
Go via:	Beaudesert
Go via:	Link Rd, Yatala
End:	Magnesium Dr Crestmead

Print out and give your completed journey to your trainer.

2. Driving task – complete the attached work diary

- You arrive at work in Acacia Ridge at 9am where you spend ½ hour completing a pre-operational check on your vehicle and then set out at 9.30am for Mackay via the Bruce Highway.
- 4 hours into the trip/work you arrive in Maryborough for ½ hours rest.
- Your next stop is at Marlborough 4 hour later for ½ hours rest
- Before leaving you decide to do an on-road trip inspection which takes 1/2 hours
- Then you drive to the final 3 hours to Mackay
- Show all rest breaks and calculate how long you have until you can return to work again to repeat the same trip.
- Explain if the trip can be completed in two day, show all rest breaks, and calculate how long you have until you can return to work again to repeat the same trip.

NATIONAL DRIVER WORK DIARY DAILY SHEET

WORK DIARY NO. _____

DRIVER IDENTIFICATION														
Driver's Name: _____			Date: _____		Day of the Week: S M T W T F S			Driver <input type="checkbox"/> Standard <input type="checkbox"/> Standard Bus		Time of daily check (if required): _____				
Licence No: _____		Number Plate: _____			Time Zone: State/Territory (Driver Base)					<input type="checkbox"/> BFM <input type="checkbox"/> AFM				
					ACT	NSW	NT	QLD	SA	TAS	VIC	WA	<input type="checkbox"/> Exemption hours (for this 24 hr period only)	

DETAILS OF ACTIVITIES FOR THIS DAY	Number Plate Change and Comments (optional) <small>(e.g. delays, authorised officer notes)</small>																										
	Odometer Reading																										
	Name of Place at Work and Rest Change <small>(e.g. rest area, truck stop, suburb or town)</small>																										
	Two-up																										
		midnight	1	2	3	4	5	6	7	8	9	10	11	noon	1	2	3	4	5	6	7	8	9	10	11	midnight	Space for you to calculate your work and rest hours (optional)
	My Work																									All drivers: calculate totals	
	My Rest																									Total Work:	
		midnight	1	2	3	4	5	6	7	8	9	10	11	noon	1	2	3	4	5	6	7	8	9	10	11	midnight	Total Rest:
	DO NOT DRIVE IF YOU ARE IMPAIRED BY FATIGUE																										

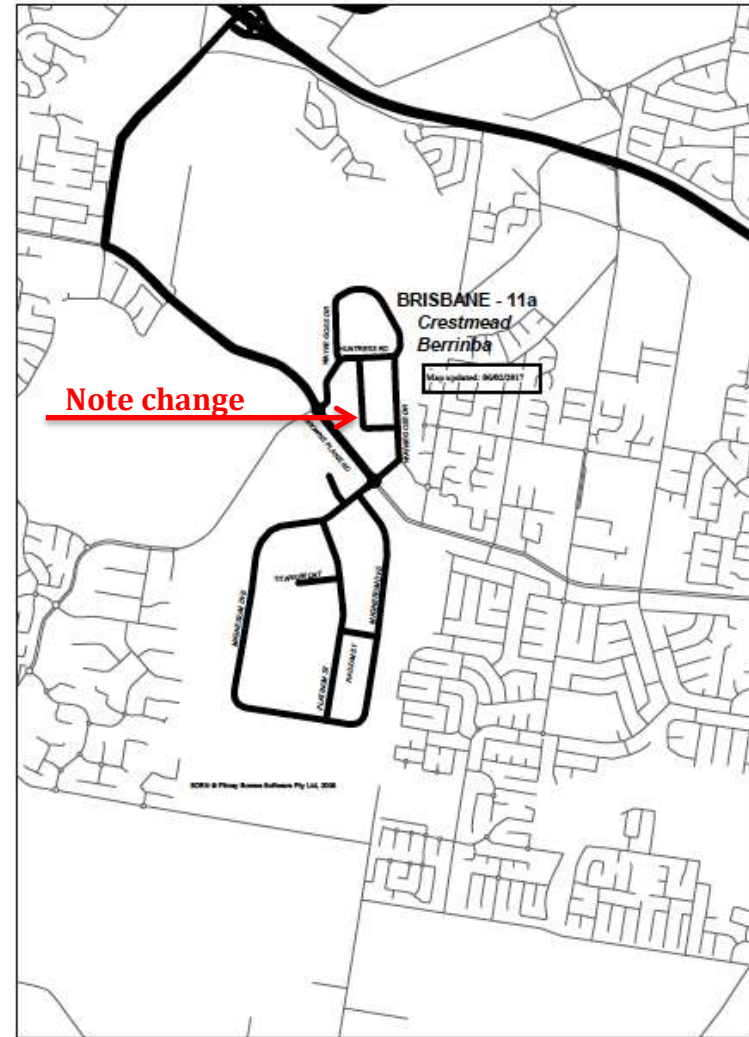
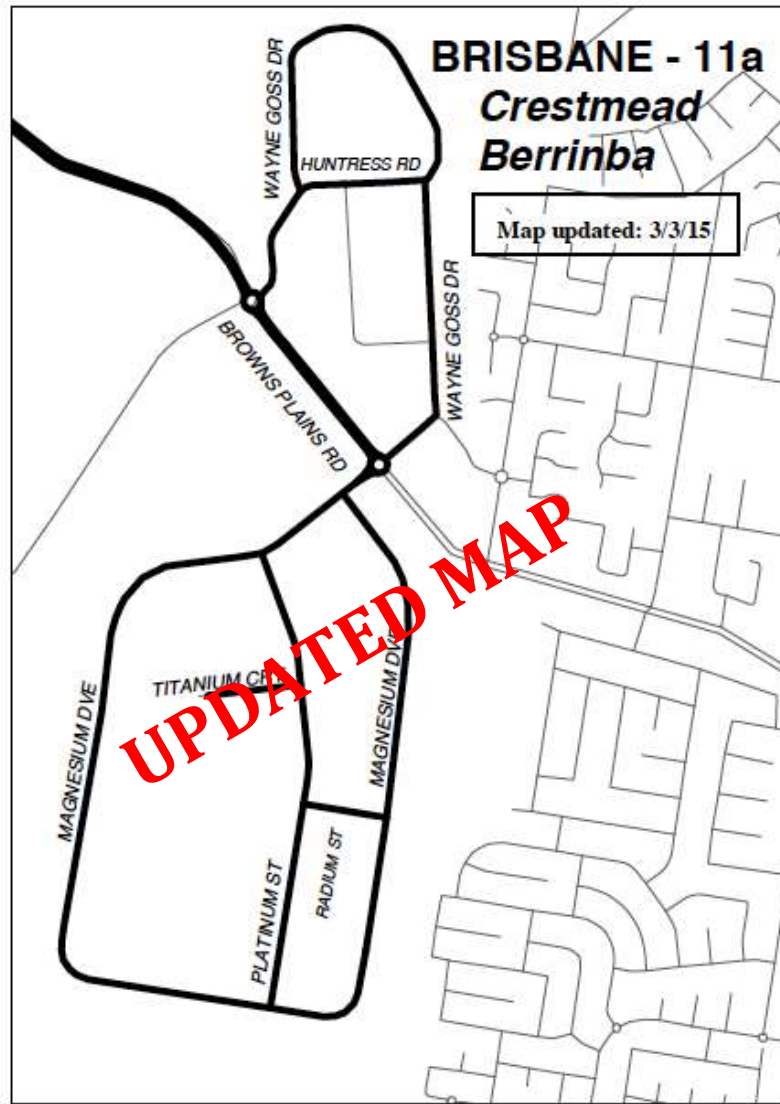
Driver Signature: _____

To the best of my knowledge and belief the information I have recorded on this daily sheet is true and correct

YOU MUST SIGN THIS SHEET BEFORE STARTING A NEW DAILY SHEET

TWO-UP DRIVER'S IDENTIFICATION														
Two-up Driver's Name: _____			Two-up Driver's Licence No: _____			Two-up Driver <input type="checkbox"/> Standard <input type="checkbox"/> BFM <input type="checkbox"/> AFM <input type="checkbox"/> Exemption hours								
Two-up Driver's Work Diary & Page No: _____			Two-up Driver's Licence issued:			Two-up Driver's Signature: _____								
			ACT	NSW	NT	QLD	SA	TAS	VIC	WA				

MULTI-COMBINATION ROUTES IN QUEENSLAND



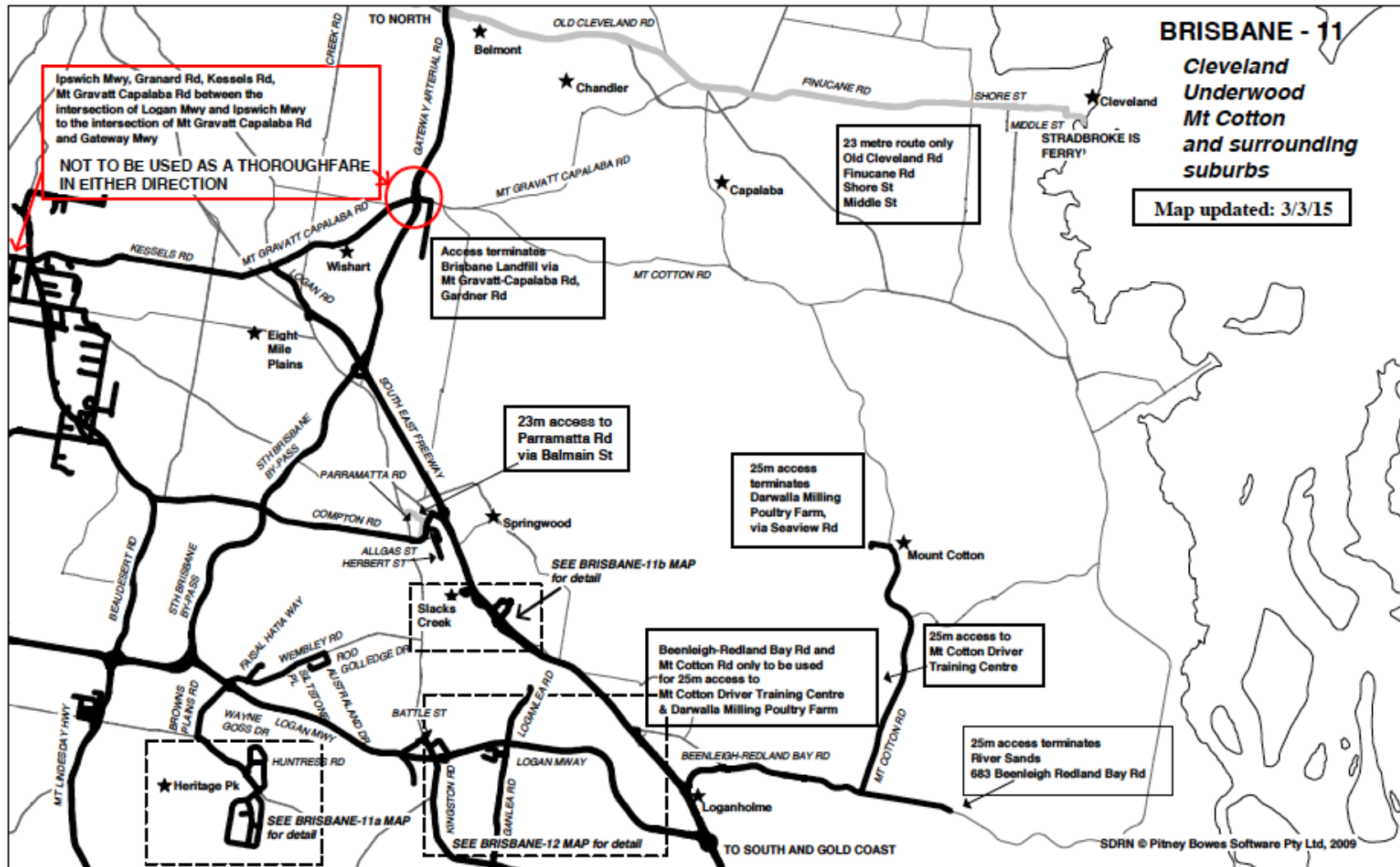
B-DOUBLES	
	23 metre routes
	23 & 25 metre routes

ROAD TRAINS	
	Type 1 routes
	Type 1 & 2 routes

NO ROAD TRAINS or B-DOUBLES	

REFER TO LEGEND FOR DETAILS OF OPERATIONS IN THE SHADED AREAS
 Note: 23 & 25 metre B-doubles can access Type 1 & 2 road train routes

MULTI-COMBINATION ROUTES IN QUEENSLAND



BRISBANE - 11
Cleveland
Underwood
Mt Cotton
and surrounding
suburbs
 Map updated: 3/3/15

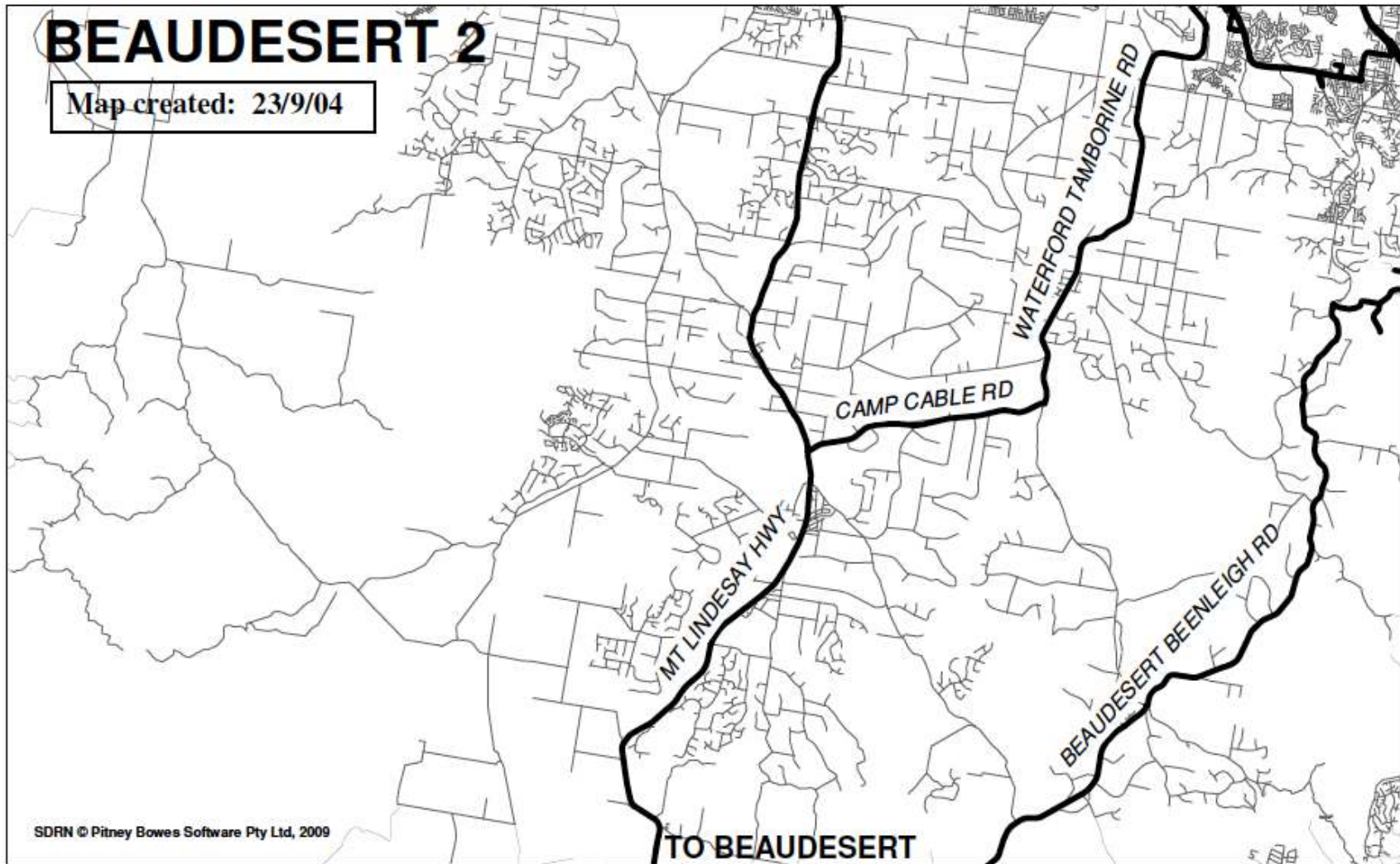
B-DOUBLES
 — 23 metre routes
 — 23 & 25 metre routes

ROAD TRAINS
 — Type 1 routes
 — Type 1 & 2 routes

NO ROAD TRAINS
or B-DOUBLES
 —

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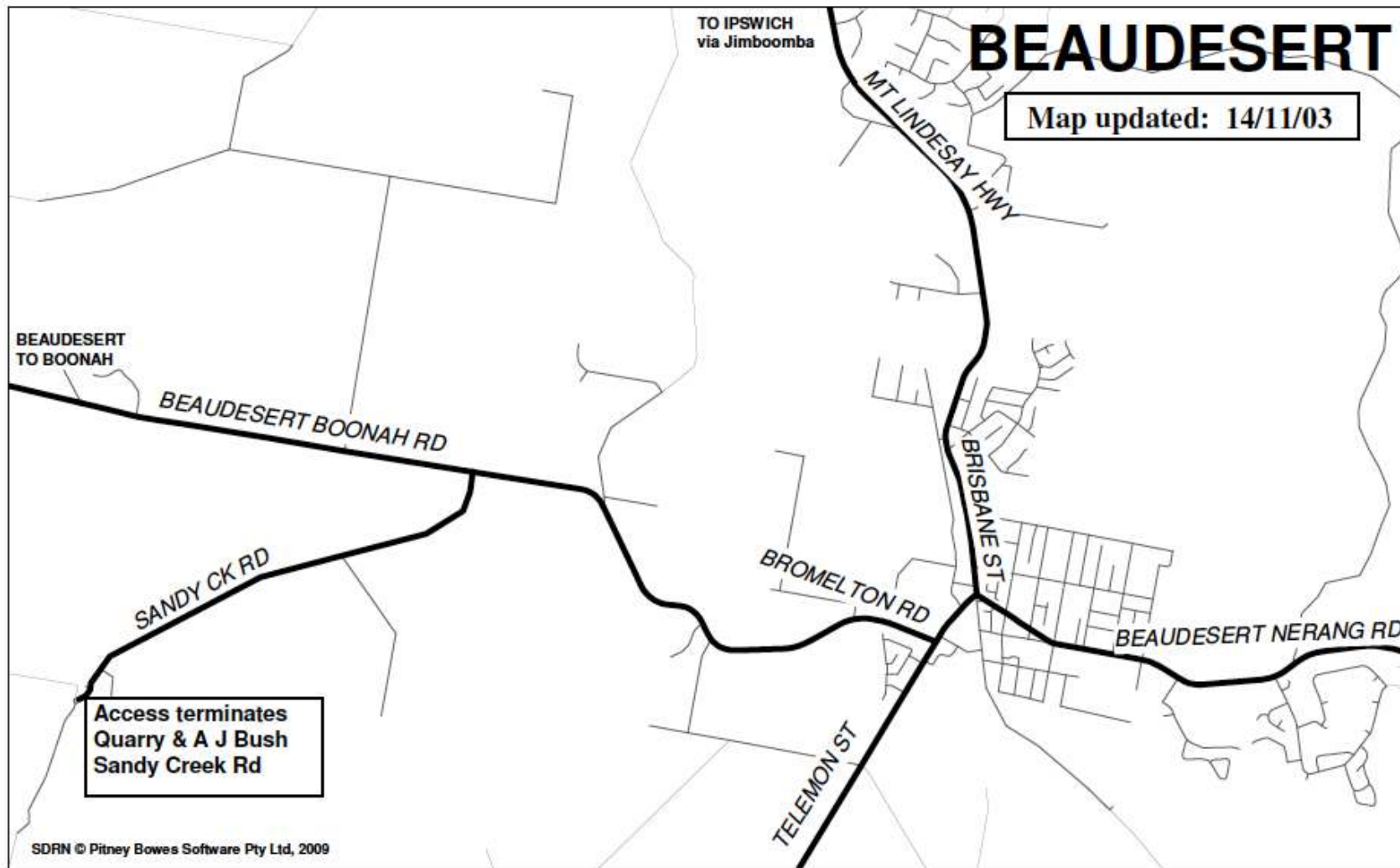
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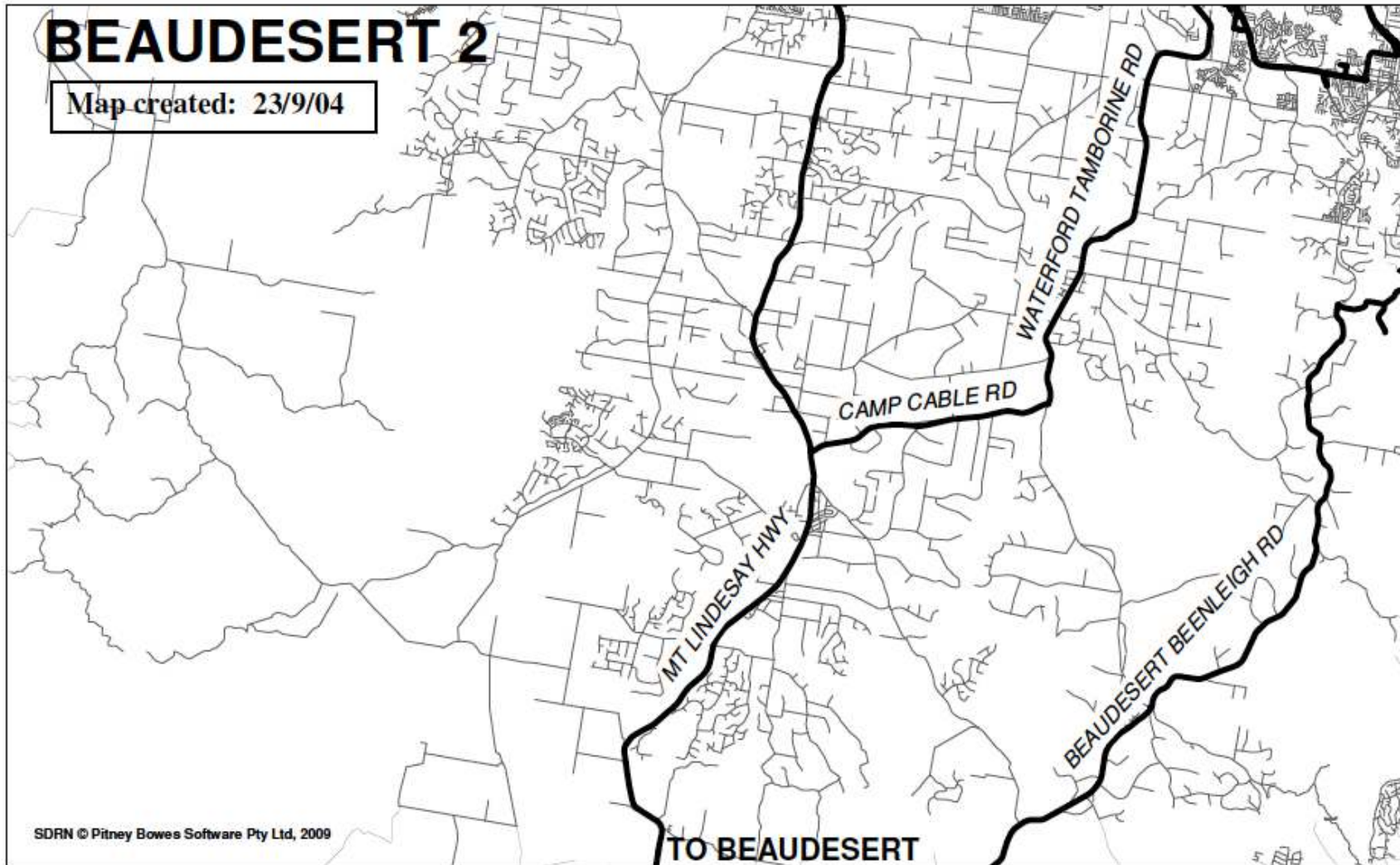
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MULTI-COMBINATION ROUTES IN QUEENSLAND



<p>B-DOUBLES</p> <p>23 metre routes</p> <p>23 & 25 metre routes</p>	<p>ROAD TRAINS</p> <p>Type 1 routes</p> <p>Type 1 & 2 routes</p>	<p>NO ROAD TRAINS or B-DOUBLES</p>	<p>REFER TO LEGEND FOR DETAILS OF OPERATIONS IN THE SHADED AREAS</p> <p>Note: 23 & 25 metre B-doubles can access Type 1 & 2 road train routes</p>
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MULTI-COMBINATION ROUTES IN QUEENSLAND



B-DOUBLES	
	23 metre routes
	23 & 25 metre routes

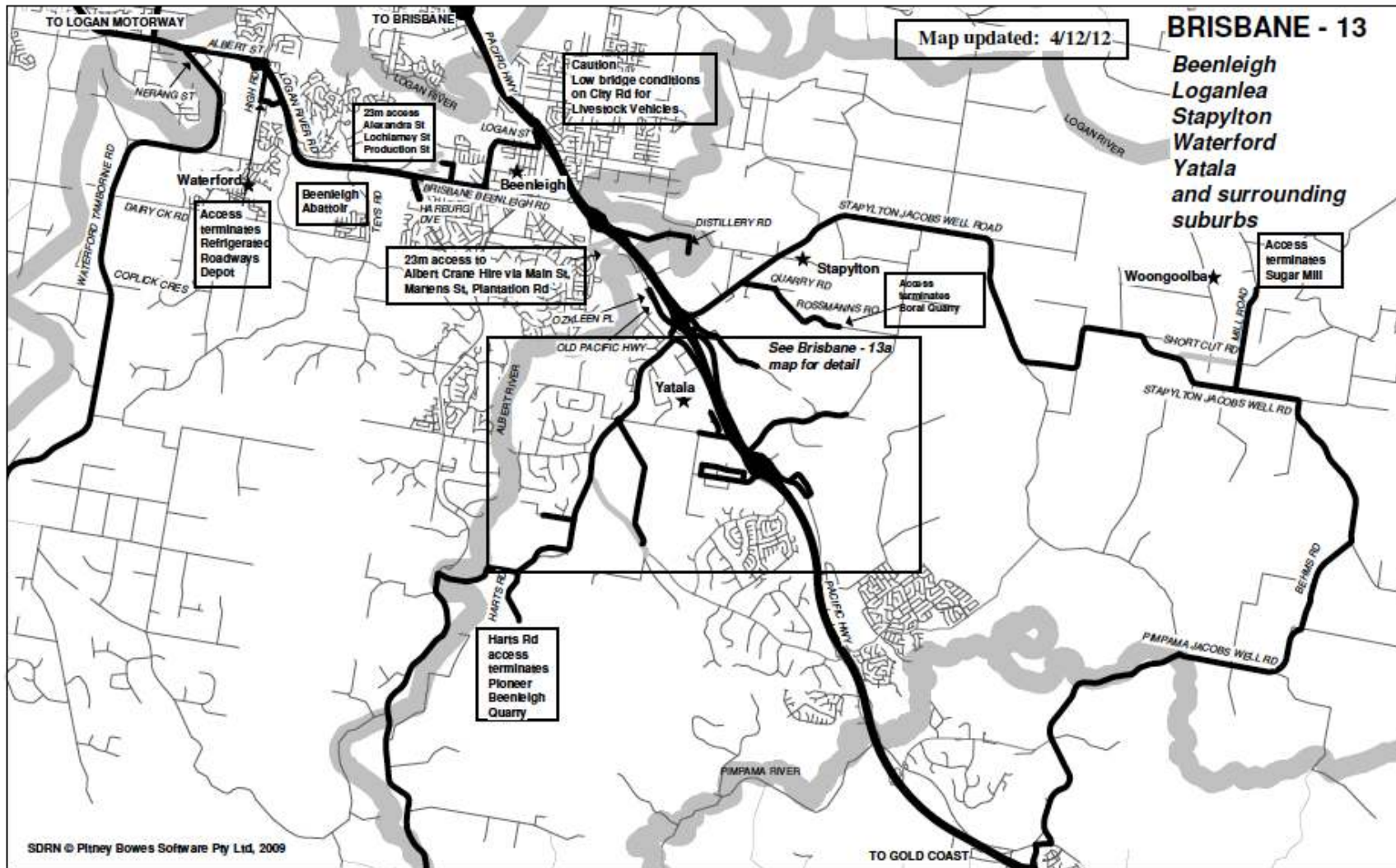
ROAD TRAINS	
	Type 1 routes
	Type 1 & 2 routes

NO ROAD TRAINS or B-DOUBLES

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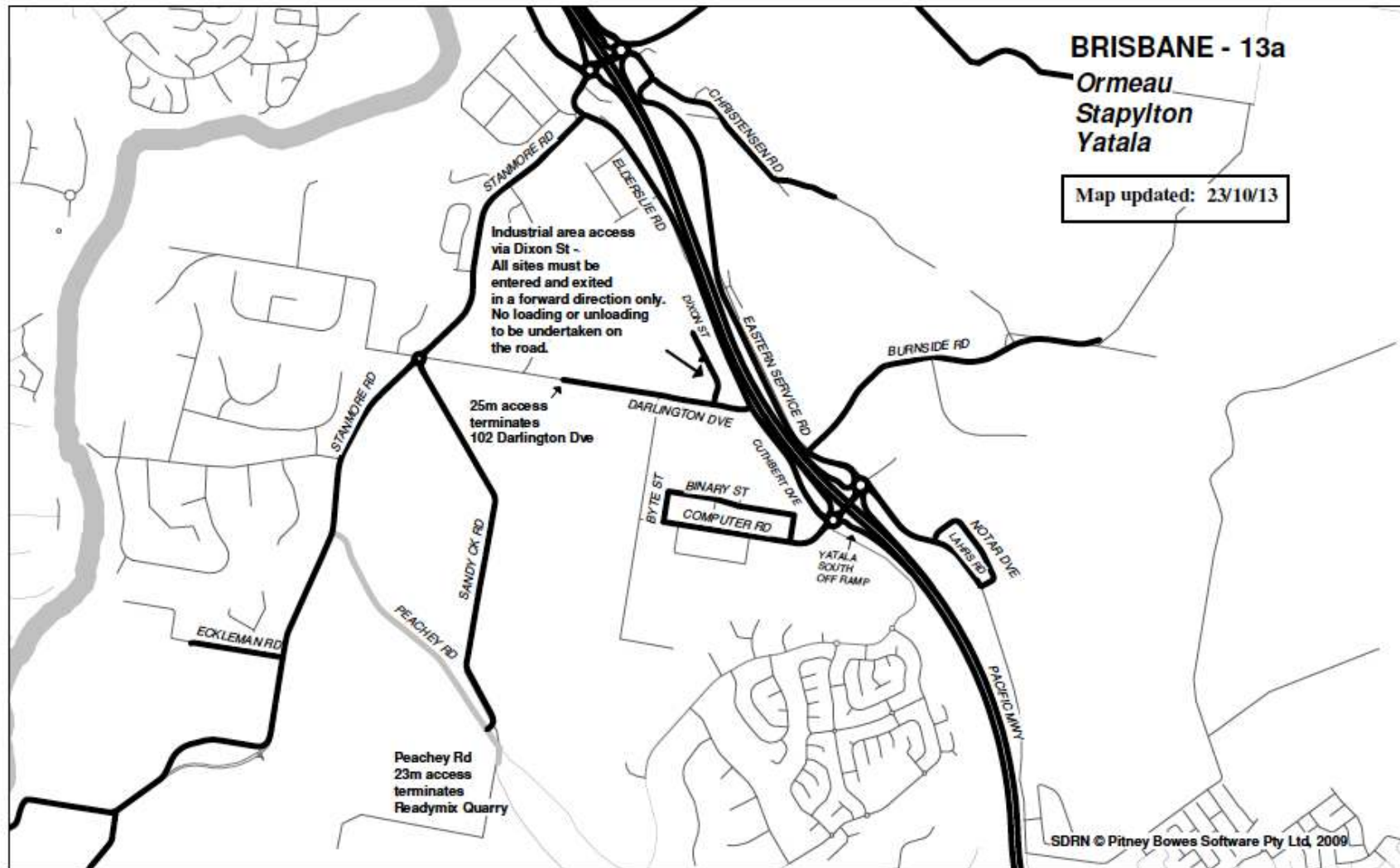
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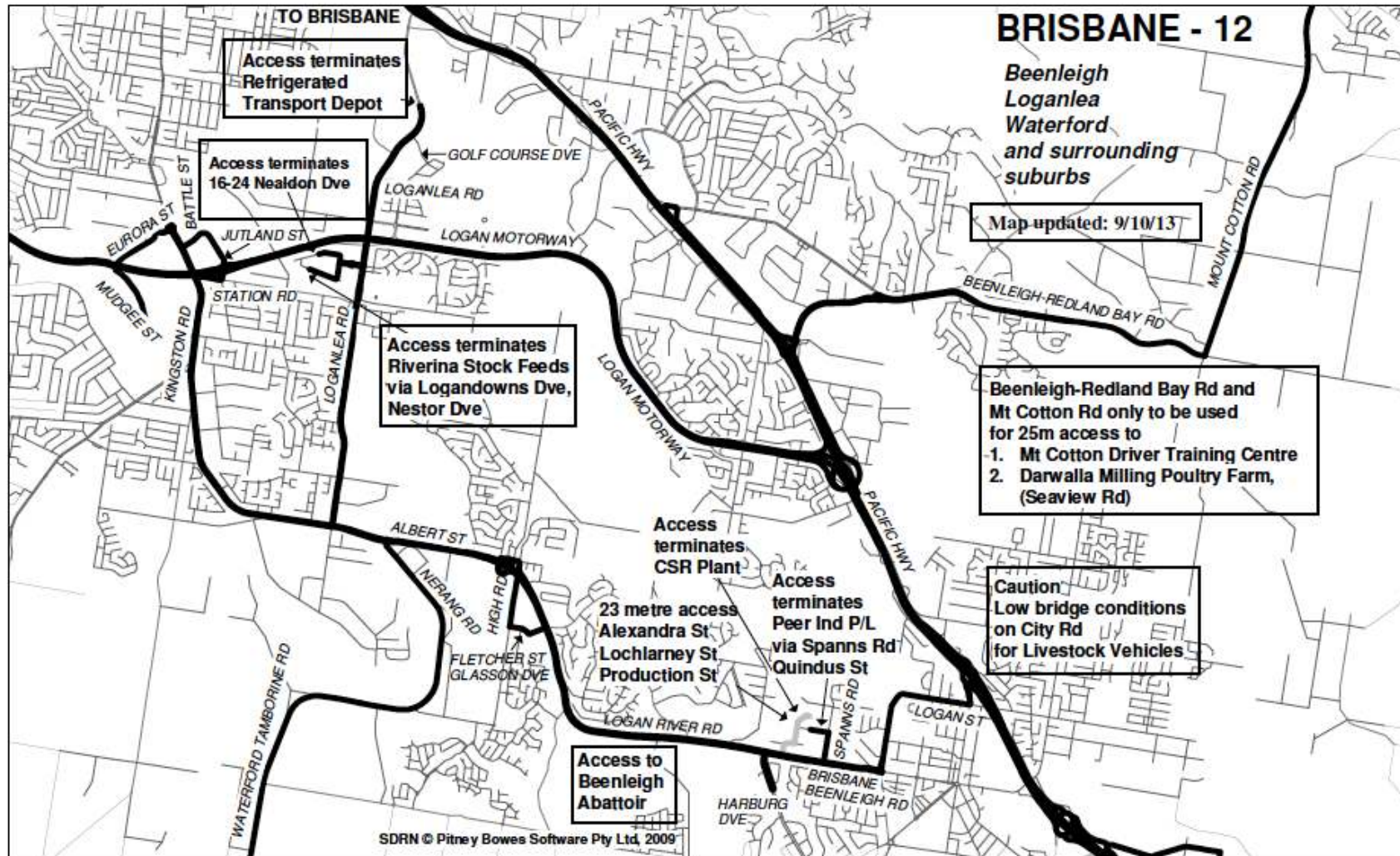
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