CLASS 2 LOAD PILOT COURSE GUIDE

A guide for people wanting to become a class 2 certified load pilot.
This book is for people wanting to be class 2 certified load pilot drivers.

It contains:
- information on the law for load pilots
- information on different ways of warning and controlling traffic while escorting an oversize vehicle
- information on controlling traffic while overweight vehicles cross bridges
- information on the state highway location reference system
- information on sitting the test to become a class 2 load pilot.

The Class 2 load pilot test can be booked and paid for on the ASPEQ website. Following the test you can find out whether you have passed or failed by checking your result on the APSEQ website (see sections 1.3–1.5 for more information).

If you’ve passed the test, you will need to apply to the Overdimension Permit Issuing Agency to send you a pilot certification card that you should carry whenever you’re piloting to show you’ve done a course approved by the NZ Transport Agency.

Good luck!

Note: Images and figures in this book aren’t to scale.

Note: This book paraphrases the requirements of the Land Transport Rule: Vehicle Dimensions and Mass 2016. However, the police and the courts use the full, exact language of any acts, regulations, rules and codes of practice. This means the explanations in this book aren’t a proper legal authority and shouldn’t be relied on in a court of law.

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**What the Rule says**

To help you understand specific legal requirements, we’ve included excerpts from the Land Transport Rule: Vehicle Dimensions and Mass 2016 (the Rule).

These are shown in a box like this.

The number in front of the text is the same as the section in the Rule.
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NZ Transport Agency offices
1 AN INTRODUCTION TO LOAD PILOTING

1.1 INTRODUCTION
Load pilots play an important part in making sure that unusually large or wide vehicles travel New Zealand's roads safely. They are responsible for warning other road users of an approaching vehicle, managing any problems and keeping any traffic delays to a minimum.

So why do we need load pilots?
New Zealand’s roads are designed to fit standard vehicles with standard dimensions – and a lot of thought goes into designing them to ensure that vehicles can travel safely.

For example, the layout of the lanes, the placing of traffic islands and roundabouts and the turns into and out of buildings and driveways are just a few things that have to be designed so vehicles can fit safely. In addition, road markings help drivers position their vehicles on a road and keep a safe distance from other vehicles.

However, sometimes vehicles (or vehicles carrying large loads) have to exceed the standard sizes. These are overdimension (or oversize) vehicles.

Oversize vehicles are often too wide or too long for the standard road markings. This can cause problems, as most of New Zealand’s roads have only two lanes divided by the painted centre line. Load pilots ensure that other road users are aware of the potential danger and know what to do so they can pass safely.

1.2 HOW WE SAFELY MANAGE THE MOVEMENT OF OVERSIZE VEHICLES
There are several ways to ensure oversize vehicles travel safely:

- Travel restriction periods
  - Oversize vehicles can’t travel at normal peak traffic times.
- Highlighting the hazard
  - Hazard warning flags/panels and Oversize signs let other road users know about the size of the vehicle so they can judge their way safely past.
  - Lighting around the extremities of the vehicle means other road users can clearly judge their way safely past.
- Advance warnings and instructions to road users.
- Vehicles of a certain size are legally required to be piloted by a minimum number and class of pilot. The operator must make sure there are enough pilots, particularly if the road conditions are unusually difficult or restrictive.

The Transport Agency has approved this book as a guide on how to provide advance warnings and meet minimum safety requirements.

However, it’s important to remember that road controlling authorities (such as councils or, for state highways, the Transport Agency) may have extra requirements for guiding road users past unusual or disruptive road activities. Make sure you contact the road controlling authority responsible for the roads you are using to find out if they have other requirements for warning road users of an oversize vehicle.
1.3 HOW TO BECOME A CLASS 2 LOAD PILOT
All load pilots must complete a load pilot course approved by the Transport Agency.

1.4 WHAT YOU NEED
To be a load pilot, you need to complete a Transport Agency approved load pilot course (learning the information in this book and completing the class 2 pilot test through ASPEQ).

Note: load pilots must meet legal requirements when driving on New Zealand roads.

1.5 HOW TO COMPLETE A LOAD PILOT COURSE
This book covers the requirements for a class 2 load pilot. Read it carefully, and then book the test at https://nzta.aspeqexams.com/.

The test is computer-based and taken at an ASPEQ examination centre which are available at many locations around New Zealand and detailed on the ASPEQ website. You need to book your test and pay for it in advance.

Once the test has been assessed, you will be sent advice that the result is available by accessing the ASPEQ website. If you are successful, print the results slip and send this with the Class 2 Load Pilot application form to the Transport Agency and they'll send you a pilot certification card. Make sure you carry the card with you whenever you're piloting, so you can show it to the Police if they ask you for evidence that you've completed a course approved by the Transport Agency.

What the Rule says:

6.32(1) Pilots are responsible for providing effective warnings to approaching vehicles and pedestrians.

6.39 The operator of a pilot vehicle must either be an enforcement officer or have completed a Class 1 or Class 2 pilot driver's course approved by the Agency.

6.47 A pilot vehicle must display adequate warning and information, consistent with the requirements of this Rule, concerning the overdimension hazard to approaching drivers.
2 DEFINITIONS

An explanation of some of the words and terms used often in this book follows. Part 8 includes terms used for vehicle dimensions.

**Choke-points** Points on the road network that require special attention, eg roads with a narrow restriction where oncoming vehicles must be stopped to allow the oversize vehicle past.

**Emergency services** The NZ Police, NZ Fire Service, ambulance services and Civil Defence.

**Flashing or revolving light** (or beacon) (see also revolving amber light) A light that either flashes (strobe) or appears to flash.

**Frangible** Breakable or easily deformed.

**Hazard** Any activity that changes the normal operating conditions of any road and/or could affect road users’ safety.

**Indivisible load** A load that can’t reasonably (without a lot of effort, expense or risk of damage to the load) have its size reduced or be divided into two or more sections for road transport.

**Lane** A width of roadway intended for the movement of vehicles that is separated from other parts of the roadway by a line or lines of paint or raised studs.

**Metres (m)** The standard international unit for measuring distance, which is often abbreviated to m (eg 4m = 4 metres).

**Overdimension (or oversize) vehicle** A motor vehicle that exceeds the dimension limits for standard vehicles. A vehicle may be oversize if it is:

- a standard vehicle carrying an overdimension indivisible load
- a specialist vehicle carrying equipment that can’t be made smaller than the standard vehicle dimension limits (such as a mobile crane, harvester or tractor)
- a vehicle designed primarily to carry oversize and/or overweight loads.

This guide uses the term oversize vehicle to cover:

- a vehicle with a load that exceeds the dimension limits
- a vehicle that doesn’t carry a load but has specialist equipment that makes it oversize, eg a combine harvester
- an oversize vehicle such as a wide low-loader, whether it’s empty or carrying an oversize load, eg a dump truck.

**Pilot (load escort, load pilot)** a person accompanying an oversize or overweight load for the purposes of managing traffic.

**Revolving or flashing amber light** An amber warning light mounted on a vehicle. A flashing amber light can be used instead of a revolving amber light.

**Revolving or flashing purple and revolving amber lights** A warning light system mounted on a vehicle escorting loads more than 5m wide. Flashing purple and flashing amber lights can be used instead of revolving lights.

- During daylight, there are two revolving amber lights on the vehicle’s right (driver side) and two revolving purple lights on the left.
- During darkness, there is one revolving amber light on the vehicle’s right (driver side) and two revolving purple lights on the left.

**Road** All sealed and unsealed pavements, the shoulder, footpath, verge, drainage channels and any other areas within the road reserve.

**Road controlling authority** An organisation (typically the Transport Agency for state highways and city or district councils for other roads) that manages and controls roads.

**Road reserve** The area between the legal boundaries (usually fence line to fence line) dedicated to allow the passage of road users, including any safety runoff areas. The road reserve also includes a 6m airspace directly above the road’s surface.

**Road user** All users affected by the oversize vehicle (such as drivers, riders, pedestrians, passengers, vehicles and traffic).

**Shoulder** The pavement surface to the left of the extreme left-hand edge line or seal edge if there is no edge line.
3 THE LEGAL REQUIREMENTS FOR PILOTING AND HOW TO MEET THEM

3.1 A LOAD PILOT’S JOB
A load pilot’s main role is to manage traffic safely. They are responsible for:

- providing advance warning to approaching road users of the hazard created by an oversize vehicle. If necessary, they also give instructions to ensure road users can pass safely
- warning the load driver of any unusual conditions that may prevent the oversize vehicle fitting the route
- minimising delays to road users by working with the load driver to let other road users past, and/or working with other pilots to make sure everyone in the load convoy is aware that traffic is getting held up and action can be taken to allow other road users to pass safely.

3.2 SAFE DRIVING PRACTICES
As a load pilot driver escorting an oversize vehicle, you must always:

- obey all traffic laws, rules and regulations – don’t assume that other road users will give way to an oversize vehicle
- drive defensively – good drivers can anticipate potential incidents and plan for them
- plan the trip so you don’t get tired while driving or having to control road users.

3.3 PLANNING
Tips on planning your escort
A safe move requires good teamwork. Before beginning the journey, make sure you discuss and plan it with the oversize vehicle driver and any other pilots or teams involved.

- Plan and agree on the destination and route
- Identify any choke-points on the road, and how you’ll manage the traffic. For example, if oncoming vehicles will have to be stopped to allow the oversize vehicle to pass, plan a suitable place for directing road users. And remember, power, phone and water companies and councils may impose special requirements – such as power line companies requiring lines to be temporarily lifted, or councils imposing special conditions on bridge crossings.
- Plan places where the oversize vehicle can pull over to allow following vehicles to pass.
- Agree on common radio communications. All pilots and the oversize vehicle driver must be in radio communication with each other.
- Be aware of situations that put other road users at risk – such as travelling down the wrong side of a two-lane median-divided road or the wrong way around roundabouts. You’re likely to have to meet special requirements. For example, at least one class 1 pilot (who has extra experience) must escort the oversize vehicle and you must get council permission first. The council may also have special traffic management systems for these situations.
3.4 HOW TO READ A PERMIT
A class 2 pilot should know how to read and understand overdimension and overweight permits.

An overweight permit contains information about the vehicle (including registration), type of load and bridge restrictions. The list of restricted bridges will have position and speed requirements, which may need traffic control to be carried out by the load pilot. The type and extent of traffic control will depend on the individual bridge and its location.

Overdimension permits are only required for category 3 and 4 loads, which would require at least one class 1 and one class 2. The permits contain information about the vehicle, load and the category of load. The category determines piloting requirements for that load. You can identify this from the load graph in the Rule. Category 1 and 2 loads do not need a written permit and the piloting requirements are specified in the Rule.

3.5 THE ROLE OF, AND DETERMINING THE ON-ROAD SUPERVISOR ON AN OVERDIMENSION LOAD
The VDAM Rule states that an overdimension load that an on-road supervisor (ORS) shall be appointed, or if none is appointed then this responsibility defaults to the load driver.

The On-Road Supervisor is responsible for making sure that the load complies with the conditions for the movement of the load.

On a Category 1 and 2 load, the ORS responsibility generally defaults to the load driver.

3.6 WARNING TRAFFIC
3.6.1 General
The key to being a good load pilot is always thinking about what you’re there to do. Each situation is different – some systems will work better than others. It’s your job to provide the best quality information to road users at the earliest opportunity.

If you’re the only pilot escorting the load, make sure you’re in a position that will give approaching road users the best warning. This will depend on two things – the road and the load.

1. The road.
   For example:
   • You should pilot from the front if road users approaching the vehicle from the rear can see the load with plenty of time and don’t need advance warning or instructions on how to pass.
   • You should pilot from the rear if the road has a divided median strip or if traffic heading towards the load from the opposite direction isn’t going to be put at risk by the oversize vehicle.

2. The load.
   For example:
   • Over-width loads are usually piloted from the front because road users approaching from the opposite direction are at higher risk than those following.
A load with excess rear overhang is usually piloted from behind because it’s usually more of a hazard for road users approaching from the rear than for those approaching from the front.

What the Rule says:

6.37 The operator of a pilot vehicle must either be an enforcement officer or have completed a Class 1 or Class 2 pilot driver’s course approved by the Agency.

6.47 A pilot vehicle must display adequate warning and information, consistent with the requirements of the Rule, concerning the overdimension hazard to approaching drivers.

The following sections suggest some effective traffic management methods.

Instructing/directing traffic from your vehicle

You may need to signal other road users to stop, slow down or pull over while you’re piloting. This involves:

- attracting their attention
- getting them to understand what they need to do.

To do this you can use revolving amber lights and a sign on your vehicle describing the oversize vehicle - but sometimes extra advice is helpful and necessary. If it’s not practical or safe to stop your vehicle and use the Stop paddle, you’ll need to provide some instruction while you drive.

In this case, make sure you slow down - this helps get the attention of approaching road users. Ways to do this include:

- using a red flag (or red torch/wand at night)
- using the standard arm warning signal for slowing traffic down (see section 3.6.7)
- using the Stop/Slow paddle.

3.6.2 Piloting from the front at normal road speed

Road users heading towards the front of an oversize vehicle usually have a higher closing speed than if they were approaching from the rear. Here are two examples:

a) If the oversize vehicle is travelling at 80km/h and a motorist approaching it head-on is travelling at 100km/h, the closing speed is 180km/h.

b) If the oversize vehicle is travelling at 80km/h and a motorist following it is travelling at 100km/h, the closing speed is 20km/h.

This means that if the oversize vehicle moves into the lane for opposing traffic, road users approaching it head-on have far less time to react than those following it, and have a greater risk of serious harm in any collision. So it’s really important that you give these road users enough warning to take any necessary precautions to pass the load safely.
When to use this approach
If the oversize vehicle is able to travel at normal highway speed, you should be able to provide enough warning by leading it from a safe distance.

Positioning your vehicle
(see section 3.64 for examples.)
Here are some key points about positioning your vehicle:

• Drive in the same lane as the oversize vehicle.

• If approaching traffic sees the oversize vehicle at the same time as they see you, you’re too close to the oversize vehicle. The only exceptions are when you’re travelling on a long, straight section of road with very good visibility ahead, or in 50km/h speed limit environments.

• If you’re travelling at open road speeds (100km/h) ahead of the oversize vehicle, road users have approximately 10 seconds to understand any information you’ve given them and take appropriate action before the oversize vehicle draws level. Use a method to determine how far 10 seconds actually is (e.g., identify a landmark like a signpost, tree or power pole and count to 10 from there)

• Avoid travelling too far ahead of the vehicle, as approaching drivers may think there’s no hazard and forget your warning. Traffic travelling in the opposite direction should see your vehicle 5–10 seconds before meeting the oversize vehicle.

• You also need to make sure that approaching road users can see you in enough time to understand your advance warning. They need to see you from a distance of at least three times the speed limit (or three times the speed of that section of road) in metres.

So, on the open road at 100km/h, drivers approaching you head-on should see you from at least 5–10 seconds away.

• Don’t drive your vehicle at approaching road users or on the wrong side of the road. If you’ve asked or signalled a road user to stop and they haven’t, let the oversize vehicle driver know immediately.

It’s very important that you’re familiar with the route. Discuss any issues with the oversize vehicle driver before you leave and keep each other updated during the journey.

Remember, large vehicles (particularly truck-trailer or B-train combinations) usually need more warning to slow down and find a place to pull over. You may be able to confirm that the driver of a large vehicle has seen you by using the CB radio. If possible, let them know what the load is, so they have an idea of how much room they need for both vehicles to pass safely.

Providing warnings
Don’t rely just on your lights and sign as your warning equipment – use whatever you need to make sure other road users see your warning and act on it. For example, if they need to slow down and pull over, use hand signals, a flag, radio communications (to truck drivers via CB), a red wand, a sound warning device or the Stop/Slow paddle.
Passing traffic
Pay attention to the road conditions. For example, if you’re leading the oversize vehicle and you’ve passed through a section of restrictive road, let the load driver know of any cars heading towards them. The driver will then have time to allow for the oncoming vehicle.

Providing helpful advice to the load driver
Let the load driver know immediately about:
• unexpected hazards such as slips or overhead obstructions that might cause problems to the load
• parked vehicles, cyclists or pedestrians they may have to slow down for and/or move over to pass.
This will help them prepare to take action.

Temporary stops
The load may need to stop during the journey to allow traffic to pass or for servicing and checking brakes. Identify suitable places before you start the journey and make sure you, the load driver and other pilots are all familiar with these points along the route. Radio the convoy if the places are no longer suitable, eg because vehicles have parked there.

3.6.3 Piloting from the rear at normal road speed
Tail pilot vehicles provide warnings to road users approaching from behind the oversize vehicle.

When to use this approach
You must pilot the oversize vehicle from the rear if you’re travelling on a median-divided or one-way road where the only risk is to road users approaching from behind.

It’s also better to pilot from the rear if the oversize vehicle has a rear overhang and other road users need warning or guidance to keep them safe from tailswing (see section 3.6.5).

Positioning your vehicle
Here are some key points about positioning your vehicle:
• Drive in the same lane as the oversize vehicle.
• If approaching traffic sees the oversize vehicle at the same time as they see you, you’re too close to the oversize vehicle. The only exception is when you’re travelling on a long, straight section of road with very good visibility ahead, or in 50km/h speed limit environments.
• You also need to make sure approaching road users can see you in enough time to understand your advance warning. Drivers coming from behind need to see you when the oversize vehicle is travelling slowly through a narrow, winding section of road, as road users don’t expect to round a bend and be confronted by a load blocking the way. In this case, increase the distance between you and the oversize vehicle so you’re on a section of road where you can be seen clearly. Once the oversize vehicle is past the difficult section, reposition yourself with a 2–5 second gap and good visibility to the rear.
• Leave enough of a gap for following traffic to pass you without having to pass the oversize vehicle in the same manoeuvre.
It’s very important that you’re familiar with the route. Discuss any issues with the oversize vehicle driver before you leave and keep each other updated during the journey.

**Providing warnings**

Don’t rely just on your lights and sign as your warning equipment – use whatever you need to make sure other road users see your warning and act on it. For example, if they need to slow down and pull over, use hand signals, a flag, radio communications (to truck drivers via CB), a red wand, a sound warning device or the Stop/Slow paddle.

**Passing**

If you’re piloting from the rear and road users pass you, advise the oversize load driver so they know someone is trying to pass them.

If the oversize vehicle has to pass others, move into the passing lane before the load driver starts to pass – this will prevent road users behind you trying to pass. Stay in the passing lane until the load vehicle has finished the manoeuvre.

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**What the Rule says:**

6.8(6) An overdimension motor vehicle must be operated with due consideration for other road users and where it is safe to do so, other road users must be allowed to pass the vehicle at the earliest opportunity.

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### 3.64 Positioning your pilot vehicle

Figures 1–3 are examples of pilot vehicle positioning. They aren’t compulsory and are shown for guidance only.

**Urban areas** (figure 1)

Urban areas require special attention and planning because other road users often have to stay out of the traffic lanes they would normally use so that the oversize vehicle can pass safely.

For example, if you’re approaching an intersection where the oversize vehicle requires two lanes, you should stay closer to the oversize vehicle than you would at open road speed. This will help other road users know exactly what vehicle you’re escorting and why you’re using the lane.

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*Figure 1. Piloting in urban areas*
Rural areas (figure 2)
In rural areas, pilot vehicles are normally positioned either well ahead of or well behind the oversize vehicle. The distance between you and the oversize vehicle will depend on speed and road conditions (see sections 3.4.2 and 3.4.3).

Motorways and multi-lane roads divided by a median barrier (figure 3)
Oversize vehicles traveling on multi-lane roads with median barriers should be no risk to road users approaching from the opposite direction. Oversize vehicles or loads may overhang the median barrier or go onto lanes available to traffic traveling in the opposite direction with correct warning and control of other vehicles.

The main risk is to road users following the oversize vehicle. If you are the only pilot, you must follow the oversize vehicle. If there is more than one pilot available, the most experienced should be at the rear.

3.6.5 Piloting to allow excess front or rear overhang
(See section 8.2 for definitions of front and rear overhang.)
The previous section gave some examples of positioning your vehicle when following an oversize vehicle. However, these examples assume there is more than one pilot vehicle in the convoy. What happens when you’re the only one?
If you’re the only pilot escorting the oversize vehicle, you must make sure you know all the oversize vehicle’s dimensions before you start the journey. This is important because different dimensions have different effects on manoeuvring and where the oversize vehicle might overhang into other lanes.
A vehicle with excess front overhang poses a different risk from a vehicle with excess rear overhang – and they must be piloted differently.
**Piloting for excess front overhang**  
(figure 4)

Excess front overhang means that the furthest forward part of the vehicle, or load, is well forward of the load driver’s seat.

This is a risk when the oversize vehicle approaches an intersection, as the driver won’t be able to see if the way is clear before the forward-most point of the vehicle moves into the intersection.

In this situation, make sure you pilot from the front. Make sure you also know when the driver is having to cut the corner so you can manage road users and keep the lanes clear.

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![Diagram](image)

**Figure 4. Piloting for excess overhang**

**Piloting for excess rear overhang**  
(figure 5)

Excess rear overhang means that the furthest rearward part of the vehicle, or load, is well behind the rear of the vehicle (and therefore well behind the point on which the vehicle turns).

This is a risk when the vehicle starts to make a turn and the excess overhang swings into an adjacent lane. This is commonly called tailswing.

The vehicle driver focuses mainly on positioning the vehicle on the road so the rear overhang can swing clear of roadside objects. Other motorists are unlikely to be aware of the risk of tailswing and, unless told otherwise, are likely to pull alongside the oversize vehicle.

Figure 5 shows an oversize vehicle turning at an intersection. The tailswing sweeps into the adjacent lane, which means any road users will be hit by the excess rear overhang.

In this situation, you need to pilot from the rear and make sure road users stay clear of the tailswing.

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![Diagram](image)

**Figure 5. Piloting for excess rear overhang**
3.6.6 Piloting if the oversize vehicle is stopped (or where traffic has to be stopped)

Oversize vehicles sometimes have to travel extremely slowly to negotiate tight parts of the route. These are commonly referred to as choke-points and can be things like a narrow bridge, an overhead obstruction or a tight bend.

Make sure you know about any choke-points before you start your journey, and let everyone in the convoy know how traffic will be managed.

If the oversize vehicle driver is driving on a road that’s too narrow for two-way traffic, go ahead to a point where two-way traffic is possible and stop any oncoming road users there. When the oversize vehicle reaches you, it should stop and allow traffic to clear in both directions. As a general rule, road users shouldn’t be delayed for more than five minutes.

Make sure you park your vehicle far enough away from the choke-point that road users have enough time to see the oversize vehicle and take urgent action if they haven’t stopped for you. Radio the oversize vehicle driver immediately if a road user has ignored your request to stop and passed you.

Park your vehicle so approaching road users will see it but be in no danger of crashing into it. If it’s parked in an unusual place (such as partway into a traffic lane), turn your hazard lights on.

Positioning you and your vehicle to manage traffic when the load is stopped and blocks some or all of a traffic lane

Figures 7, 8a and 8b show situations where the load is stopped and road users must be managed so they can pass safely.

Your traffic management will depend on:
- how long the load will be parked
- the amount of traffic
- traffic speeds
- the road type.

The examples have different levels of complexity – the more complex ones might be used when you’re helping a class 1 pilot. However, the general principles of providing enough warning to road users don’t change, no matter what the situation.

If the oversize vehicle breaks down or has to stop unexpectedly and road users can’t pass the oversize vehicle safely, contact the police. It’s also helpful to inform the road controlling authority.
Figure 7. One-pilot layout with low-volume traffic and good approach visibility
Note: 2-way 2-lane road, operation in left lane

Figure 8a. Two-pilot layout with low-volume traffic and good approach visibility
Note: 2-way 2-lane road, operation in left lane

Figure 8b. Two-pilot layout with low-volume traffic and good approach visibility
Note: 2-way 2-lane road, 1-lane closure of traffic, manual traffic controllers
3.6.7 Directing traffic when load is stopped or at breakdown

Before you stand in or beside a lane to direct traffic, make sure you slow approaching road users down by using cones and/or signs. It keeps you safe and will help ensure the road users understand your directions.

Where to stand on the road

Stand where you can see as many approaching road users as possible. Remember, it’s risky to stand on or near traffic lanes, so you should always wear a high-visibility safety jacket or vest.

Stand somewhere where approaching road users have as much time as possible to see you and respond to your directions.

In a straight road, stand on the shoulder of your lane facing road users travelling in the same direction as the load. Keep close to your vehicle so you can hear your radio and instructions from the load driver or other pilots. Make sure you have an escape path – don’t stand where you would have nowhere to go if a vehicle lost control and headed for you.

Always face approaching traffic and never turn your back on it.

Make sure your vehicle is out of the way, so that approaching road users can see you clearly.

Figure 9. Manual traffic controller signals

To stop traffic, turn the paddle to Stop, face the traffic and raise your other hand into the stop position with your palm towards the traffic.

To move traffic, turn sideways, then turn the paddle to Go.

Use your arm nearest to the traffic to wave users on with a sweeping movement across your body in the direction of travel.
Slowing traffic when directing from the road (figure 11)
Face the traffic head-on, but don’t stand directly in its path, in case it doesn’t slow down in time.
Then either:
- use your right arm to direct road users (keep your left arm by your side) – extend your right arm out to your shoulder in a straight line and then move it in a slow up and down arc, or
- use the Slow paddle.

Slowing traffic when directing from your vehicle
Signalling from a moving vehicle isn’t as effective as standing on the road. It’s also more risky as it can distract you from driving, so take extra care.
- If you’re driving and leading an oversize load and want to signal approaching road users to slow down, use the right-arm arc motion described in figure 11 or use the Slow paddle.
- Try to make eye contact so the road user knows your directions are for them. Use a white glove, red flag or red wand to attract approaching road users’ attention.
- If you want a road user to slow down and pull over, the right-arm arc method probably won’t be effective. Use the hand-held Slow or Stop paddle from the driver’s window to attract the attention of oncoming drivers. Then road users can be brought to a stop and if required you can direct them to a safe parking area.

Don’t expect a road user to pull over, particularly if there are no obvious places to do so. It’s better to plan where traffic can be stopped safely and then stop and direct traffic at these points. Never leave road users in any doubt about what they’re meant to be doing.

Figure 11. Signaling traffic from the road
Stopping traffic when standing on the road (figure 12)

Choose the road user you wish to stop, allowing plenty of time for them to do it safely. Ideally, the road user you stop should also be able to move off smartly when the time comes. Avoid stopping large vehicles that are first in the queue, as:

- you'll find it hard to see what's happening behind the vehicle
- road users behind it may not understand why it has stopped and may pass it and travel into the danger zone.

Stand facing the road users but out of the traffic lane. Try to make direct eye contact so they know your signal is for them.

Using a Stop sign is strongly recommended. It's the most effective way of showing your intention to stop road users, and is widely used in other types of traffic management. Other options include wearing a white glove or using a red flag. If you don't have any of these, face the traffic and hold your arms out horizontally, with your elbow bent at right angles and your palms facing the approaching traffic.

When an approaching road user slows down, move from the kerb or shoulder to the centre of the road so other road users can see you clearly. If time permits, tell stopped road users why there is a delay. Be courteous and brief.
**Directing traffic into another lane**  
(figure 13)

If you need to move traffic into a path it wouldn’t usually take (such as moving traffic from the left lane into the outer lane so it can pass a load), use the guide and beckon approach:

Make sure traffic approaching from the other direction has been stopped first, or is far enough away to not cause problems.

Stand with the stopped or approaching traffic to your right, then turn your head and face the traffic you’re directing. Keep your left arm straight out across the path of the opposing traffic, so that it’s pointing toward the area where you want the traffic to go.

Beckon the road user by bringing your right hand around in an arc to meet the outstretched left hand. Repeat this movement as often as necessary to clear the traffic, or use the bent arm with palm facing the traffic to stop the flow when required.

Always turn traffic across your front so you can see the vehicle throughout the turn and make sure it’s doing as directed. Keep your signals at shoulder height for maximum visibility to road users.

When detouring traffic, make sure the detour route is clearly marked.

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![Figure 13. Directing traffic into another lane](image-url)
3.6.7 What to do if Traffic Not Slowing

Stay calm
Make clear radio communication to the rest of the convoy about the situation
Advise the truck that they need to be aware that an oncoming motorist and not slowed, and they may need to stop the load and pull it off to the side.
Provide any information about the style and colour of the vehicle

3.6.8 Clearances with signs and roadside furniture

As a pilot, your first priority is to warn other road users. Once you have ensured their safety, you can help by advising the load driver if clearances become critically close between the vehicle and roadside furniture, such as traffic lights, poles and signs.

If signs have to be temporarily removed to allow the oversize vehicle to pass, they must be replaced immediately afterwards. If a traffic control device is not put back in its original position, the operator of the vehicle must notify the road controlling authority or person responsible for the device.

What the Rule says:

6.10(1) If an overdimension motor vehicle interferes with or damages a traffic control device, bridge, tunnel or other structure, or trees or other foliage, the operator must notify the road controlling authority or the owner of the item.

6.10(2) A traffic control device may be removed temporarily to allow safe passage of an overdimension motor vehicle if the traffic control device is immediately re-erected in its original position after the vehicle has passed that position on the road.

6.10(3) If a traffic control device that has been temporarily removed to allow safe passage of an overdimension motor vehicle is not re-erected in its original position, the operator of the vehicle must notify the road controlling authority or the person responsible for the traffic control device.

3.6.9 Summary of managing traffic around stopped oversize loads

As you can see, road users can be given many different types of warning. However, the same principles apply to all of them: the earlier road users see your signals and the more time they have to understand what they need to do to pass, the better chance they have of doing so safely.

It’s important to consider each situation. If the load is parked up for a short time and little traffic is likely to approach, you may not need as much traffic control as on a busy road with a longer stop. Whatever the situation, provide controls appropriately to give road users enough warning to pass safely.

If you’re planning stops on a road where traffic will be disrupted, the operator in charge of the convoy must consult the road controlling authority and agree on a traffic management plan. The length and width of any road under temporary traffic management should be the minimum required for safety.

If possible, tell delayed road users why they’re being stopped and for how long. For example,
you might say, ‘A large excavator is crossing the bridge and it will take two or three minutes. Thanks for your patience’.

If you’ve had to remove road signs temporarily to allow the oversize vehicle past, put them back as soon as the vehicle has passed.

**Pilot safety when directing traffic while standing on the road**

When you’re managing traffic while standing on a road:

- Remember, you’re standing close to moving vehicles and are at risk of being struck – always be alert and aware.
- Minimise the risk of harm to yourself by using advance warning signs, direction signs and cones.
  - Stay on the lookout, especially for road users who might ignore your instructions – remember, you may surprise road users who travel the route daily, so they may act in unusual ways.
- Stand in the correct position and out of the traffic flow.
- Wear a high-visibility jacket at all times – you never know when you might have to work from outside your vehicle.
- Wear white gloves to make it easier for other road users to see your hand signals.
- Use the most effective gear you have available, eg a stop paddle is easier to understand than hand signals and directing traffic at night will be clearer with a red wand.
- Have a positive and helpful attitude to road users – you will be inconveniencing them and they may be angry at being stopped; don’t let them upset you.
- Keep your signals clear and concise.
- Always have an escape path.

### 3.4.10 The difference between the roles of a class 2 load pilot

**Sole class 2 load pilot**

Know your route prior to departure, taking into account any low overbridges or bridge restrictions if applicable.

Know what category that you are piloting and what travel time restrictions apply for that load

Check to see that the load and vehicle has the right lighting and signage to comply with the requirements in VDAM.

The pilot will generally be in front of the load vehicle and provides warnings to other road users that a wide load is travelling behind them. At some choke points the pilot may need to actively warn other road users.

**Class 2 load pilot working with a class 1 load pilot**

There are two main industry scenarios where a class 2 load pilot would be working with a class 1 pilot. Class 1’s have higher levels of training and where an oversize load has a number of load pilots, they will generally take the lead in terms of the on-road travel and directing where other load pilots will be placed.
A category three load will have at least two load pilots, and the class 1 pilot will be the first pilot, with the second load pilot (class 2) to provide additional warning and traffic control as required. These loads will be up to 5m in width, and will be travelling at least partially in the opposing lane. Therefore the class 1 load pilot will be warning and slowing on-coming traffic and the class 2 pilot will be assisting in this. Often for these loads there may be restricted bridges that will require that all other traffic is not on the bridge at the same time, and this will involve all on-coming traffic be fully pulled over and stopped in a location that allows the load to exit from the bridge.

A Category 4 load can be up to 11m in width, and this will generally take up the entire road width. This will require that all on-coming traffic on a two-lane road is slowed down and pulled over to the side of the road. The class 1 lead pilot will provide the first warning and start slowing traffic, while the second class 2 pilot will ensure that all on-coming traffic has been stopped.

If you are the rear pilot on a Category 3 or 4 load, then your role is to provide warning to traffic from the rear about the overdimension load – particularly if the load has to travel more slowly than normal road speed. In addition, the rear class 2 pilot needs to use radios to communicate to the class 1 pilot about the amount of traffic build up behind the load, so that this can be let past when there is a space for the load to pull over.

Sometimes, other parties will be involved in your move (such as service vehicles to manage overhead power lines). These vehicles should only be included in the convoy if absolutely necessary, and a pilot should always be the leading vehicle. The most experienced pilot in the convoy should lead from the front, unless the most important traffic management has to be done from behind the oversize vehicle.

**Reducing traffic build-up**

Oversize load drivers often can’t see what’s happening behind them, particularly if they’re driving a wide vehicle. Load pilots play an important role in keeping them informed. So if a queue of 10 vehicles builds up, let the load driver know about it. Or, if you’re helping a class 1 pilot and they’re leading the oversize convoy, let them know if a queue’s forming behind the convoy so you can help it pass.

Make sure you know about suitable places for the oversize vehicle and pilot vehicles to slow down and let the traffic pass. This should only happen on straight sections of road with good visibility, so that following drivers can safely see their way past the oversize vehicle.
4 PILOT EQUIPMENT

4.1 PILOT EQUIPMENT

What the Rule says

6.41(1) A pilot vehicle must have sufficient manoeuvrability and dynamic performance to enable it to carry out its primary duty of providing adequate warning to road users.

6.41(2) A pilot vehicle must be clearly identifiable as a vehicle that is providing a warning of the overdimension motor vehicle that it is escorting.

6.41(3) A pilot vehicle may not carry an overdimension load or tow a trailer with an overdimension load.

6.41(4) A pilot vehicle may be equipped with a sound warning device that is:
(a) additional to the device required by Land Transport Rule: Vehicle Equipment 2004; and
(b) is not a device prohibited by that Rule.

6.41(5) A Class 1 pilot vehicle must be:
(a) substantially white in colour; and
(b) a motor vehicle with a gross vehicle mass not exceeding 3,500 kg.

6.41(6) All pilot vehicles and overdimension motor vehicles in a convoy must be in radio communication with each other.

6.42(1) A Class 2 pilot vehicle at the front of an overdimension motor vehicle must be a motor vehicle with a gross vehicle mass not exceeding 7,000 kg.

6.42(2) A pilot vehicle at the front of an overdimension motor vehicle may not tow another vehicle.

6.43(1) Except as provided in 6.43(2), a pilot vehicle at the rear of an overdimension motor vehicle must be a rigid motor vehicle with not more than three axles.

6.43(2) A pilot vehicle at the rear of an overdimension motor vehicle may tow a simple trailer with a maximum of two axles.

4.1.1 Pilot vehicle size summary

Pilot vehicles need to be manoeuvrable – especially those at the front of an oversize convoy – so there are limits on their size. It’s also important that road users don’t get confused and think the pilot vehicle is the oversize vehicle.

An oversize vehicle, particularly one carrying a very large load, may also require an extensive support crew – often with specialist equipment that can only be carried on a large motor vehicle. It makes sense if one of these accompanying vehicles can pilot the load, but these operational requirements need to be balanced with safety considerations. If the vehicle is too large, it won’t be manoeuvrable enough and may be mistaken by road users as the oversize vehicle.

4.2 PILOT SIGNS (figure 14)

The signs on a pilot vehicle:

• indicate to other road users that the hazard you are piloting is wide or long
• give an indication of what other road users should do.

Schedule 7 of the Rule (specifications for signs) is reproduced on the following pages.
4.2.2 Pilot sign summary
Signs are the easiest way to give road users advance warning of the hazard you’re escorting. Make sure your sign suitably describes the oversize load – the first message an approaching road user gets is often the most important one, because it makes them aware and prepares them to take action.

Figure 14

What the Rule says:

6.42(3) A pilot vehicle at the front of an overdimension motor vehicle must display above its roof a warning sign as specified in Part 3 of Schedule 7, or a variable message sign that has been approved by the Agency, in accordance with 6.45(1).

6.43(3) A pilot vehicle (or its trailer) at the rear of an overdimension motor vehicle must display a warning sign as specified in Part 3 of Schedule 7 or a variable message sign that has been approved by the Agency in accordance with 6.45(1), that faces towards the rear of the vehicle (or the trailer, if the pilot vehicle is towing a trailer) and describes the load ahead of it.

6.44(2) The pilot warning sign required by this Rule, may be displayed only when the pilot vehicle is escorting an overdimension vehicle.

6.44(3) A Class 1 pilot vehicle must clearly display on the exterior of the vehicle a pilot logo, device, or marking, (or a combination of these), that is approved by the Agency in accordance with 6.45(4).

6.44(4) A Class 2 pilot vehicle may display on the exterior of the vehicle a pilot logo, device or marking (or a combination of these), that is approved by the Agency in accordance with 6.45(4).
TABLE 1. WORDING, SIZE AND COLOUR SPECIFICATIONS FOR WARNING SIGNS

The following specifications for signs tables are from Schedule 7 of the Rule.
Choose the sign that best suits the load you’re piloting.

<table>
<thead>
<tr>
<th>WORDING OF WARNING SIGN</th>
<th>LETTER SIZE &amp; STROKE WIDTH (ALL UPPER CASE) (MM)</th>
<th>SIZE OF SIGN (MM)</th>
<th>COLOUR OF BACKGROUND DAY/NIGHT</th>
<th>COLOUR OF WORDING</th>
<th>SIZE &amp; COLOUR OF BORDER (MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DANGER SLOW DOWN (Class 1)</td>
<td>200/28</td>
<td>1100x600</td>
<td>day</td>
<td>Fluorescent yellow-green</td>
<td>Matt black, None</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>night</td>
<td>Fluorescent yellow-green retro-reflective</td>
<td></td>
</tr>
<tr>
<td>WIDE LOAD FOLLOWS or WIDE LOAD AHEAD</td>
<td>150/21</td>
<td>1100x520</td>
<td>day/night</td>
<td>Fluorescent yellow-green</td>
<td>Matt black, Black 12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>day</td>
<td>Fluorescent yellow-green retro-reflective</td>
<td></td>
</tr>
<tr>
<td>HOUSE FOLLOWS or HOUSE AHEAD</td>
<td>150/21</td>
<td>1100x520</td>
<td>day/night</td>
<td>Fluorescent yellow-green</td>
<td>Matt black, Black 12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>day</td>
<td>Fluorescent yellow-green retro-reflective</td>
<td></td>
</tr>
<tr>
<td>LONG LOAD FOLLOWS or LONG LOAD AHEAD</td>
<td>150/21</td>
<td>1100x520</td>
<td>day/night</td>
<td>Fluorescent yellow-green</td>
<td>Matt black, Black 12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>day</td>
<td>Fluorescent yellow-green retro-reflective</td>
<td></td>
</tr>
<tr>
<td>PILOT VEHICLE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>White, if used at night, white retro-reflective</td>
</tr>
<tr>
<td>This face to be displayed on the reverse of all the above signs</td>
<td>150/21</td>
<td>1100x600 1100x520</td>
<td>Matt black</td>
<td></td>
<td>White 12, If used at night, white retro-reflective</td>
</tr>
</tbody>
</table>

TABLE 2. ORDER OF DISPLAY OF PILOT SIGNS FOR VARIOUS SIZE LOADS

<table>
<thead>
<tr>
<th>WIDTH GREATER THAN 3.1M AND UP TO AND INCLUDING 5M WIDE</th>
<th>GREATER THAN 5M WIDE</th>
<th>LESS THAN 3.1M, BUT REQUIRE PILOT BECAUSE OF EXCESS REAR OVERHANG OR BECAUSE IT’S GREATER THAN 25M OVERALL LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>First pilot</td>
<td>WIDE LOAD FOLLOWS</td>
<td>DANGER SLOW DOWN</td>
</tr>
<tr>
<td>Second pilot (if required)</td>
<td>WIDE LOAD FOLLOWS</td>
<td>WIDE LOAD FOLLOWS or HOUSE FOLLOWS (as appropriate)</td>
</tr>
<tr>
<td>OVERSIZE VEHICLE/LOAD</td>
<td>WIDE LOAD AHEAD</td>
<td>WIDE LOAD AHEAD or HOUSE AHEAD (as appropriate)</td>
</tr>
<tr>
<td>Rear pilot (if required)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.3 PILOT LIGHTS
The lights on a pilot vehicle:

- draw road users’ attention to you
- give an indication of the load size, eg flashing or revolving purple and revolving amber lights are used for escorting loads over 5m wide.

4.3.1 Pilot lighting summary
During the day, all pilots must operate with their headlamps on low beam.
At night-time, front pilot signs must be lit from the front with white light. However, this white light mustn’t shine past the sign and into the view of road users traveling behind the oversize vehicle.

Piloting oversize vehicles up to 5m wide
The pilot vehicle must have either one or two flashing or revolving amber lights on its roof.

Piloting oversize vehicles over 5m wide
The pilot vehicles must have flashing or revolving purple and revolving amber lights on their roofs:

- During daylight, use two amber on the right and two purple on the left.
- During darkness, use one amber on the right and two purple on the left.

In addition, the class 1 pilot vehicle leading the convoy must use a pair of purple alternately flashing auxiliary lamps.
During daylight, the class 1 pilot leading the convoy may use a pair of alternately flashing (wig wag) headlamps.

4.4 Communications between pilot vehicles and oversize vehicles
Radios are necessary so all drivers in the convoy can quickly communicate and keep each other informed of what’s happening.
Many trucks have CB radios. If you’re using one of these, you can:

- let approaching trucks know about the oversize vehicle, eg ‘Wide house up ahead, please slow down and pull over so we can get past’
- provide early warning before arriving at choke-points, eg ‘Whirokino Trestle Bridge will be closed for the next three minutes while a large house crosses’.

General tips when using radio equipment

- Consider safety. Do you need to pull over and stop?
- Think about what you want to say before you start.
- Be accurate and specific about locations.
- Check the message is understood.
- Before you leave, make sure all radios in the convoy are on the same channel.
- Before sending a message, listen to check no-one else is speaking.
• After depressing the switch to speak, pause for a second to avoid the start of your sentence being clipped off.
• Speak slowly, clearly and directly into the microphone, keeping it about 25mm away from your mouth.
• If you’re transmitting a lengthy message, pause every now and then to enable the person to repeat it, if necessary.

4.5 Other useful equipment

The rule doesn’t specifically require you to carry the following equipment, but it’s recommended by the Transport Agency, and your employer may require you to use it. You may also be required to use it by other organisations, such as WorkSafe or road controlling authorities (eg under the Transport Agency’s Code of practice for temporary traffic management).

Some items provide a clearer message to approaching traffic, while others will be useful in an emergency.

Must have equipment
• High-visibility jacket or vest. If you’re working on the road directing traffic, it’s vital for your safety that you’re seen by road users.
• White glove(s).
• Stop/Slow paddle.
• Torch fitted with red cone for night-time piloting.
• Fluorescent red flag.
• Fire extinguisher.

Other equipment
• Road cones (with retro-reflectorised collars for use during the hours of darkness).
• Safety hazard triangles.
• First aid kit.
What the Rule says:

6.46(1) Except as provided in 6.46(7), the headlamps of a pilot vehicle must be operated on low beam when the pilot vehicle is escorting an overdimension motor vehicle during daylight hours.

6.46(2) The lighting in 6.46(3) to 6.46(8) may be operated only when a pilot vehicle is escorting an overdimension motor vehicle.

6.46(3) Except as provided in 6.46(4), a Class 2 pilot vehicle must have one or two flashing or revolving amber beacons fitted to its roof unless 6.46(5) applies.

6.46(4) An overdimension motor vehicle whose load exceeds 5 m in width must be escorted by at least one Class 1 pilot vehicle and at least two Class 2 pilot vehicles, each of which has fitted to its roof, and operates:

(e) during daylight hours, two amber flashing or revolving beacons on the right, and two purple flashing or revolving beacons on the left; and

(f) during the hours of darkness, one amber flashing or revolving beacon on the right, and two purple flashing or revolving beacons on the left.

6.46(5) Despite 6.46(4), if the beacons required to be fitted to the roof of a pilot vehicle at the rear of an overdimension motor vehicle would not be clearly visible to following traffic then the beacons, or equivalent additional beacons, must be fitted to the rear of the pilot vehicle, or its trailer, in a position that ensures the beacons are clearly visible to traffic approaching from the rear of the overdimension motor vehicle.

6.46(6) If an overdimension motor vehicle has a width exceeding 5 m, the pilot vehicle that is travelling furthest ahead must display one pair of alternately flashing auxiliary lamps that emit a purple light clearly visible to approaching traffic in addition to the beacons required in 6.46(4).

6.46(7) If an overdimension motor vehicle has a width that exceeds 5 m, the pilot vehicle that is travelling furthest ahead may operate with one pair of alternately flashing headlamps, which must be operated on low beam when the pilot vehicle is escorting an overdimension motor vehicle during daylight hours.

6.46(8) During the hours of darkness, a pilot vehicle must be fitted with one or two lamps that emit a white light to illuminate a roof-mounted warning sign, provided that the light is not directly visible from the rear of the vehicle.

What the Rule says:

6.41(4) A pilot vehicle may be equipped with a sound warning device that is:

(a) additional to the device required by Land Transport Rule: Vehicle Equipment 2004; and

(b) is not a device prohibited by that Rule.
4.6 Pilot equipment checklist
Make sure you have everything you need before piloting an oversize load.

**Piloting scenario 1**
- Load up to 5m wide
- Front pilot (loads exceeding 4.5m wide require at least one class 1 pilot and one class 2 pilot)

**Minimum equipment requirements:**
- Vehicle type: A gross vehicle mass no greater than 7000kg.
- Sign (vehicle up to 3.1m wide):
  - Wide Load Follows or Long Load Follows (if piloting required due to excess rear overhang or overall length exceeds 25m) (facing to the front)
  - Pilot Vehicle (facing to the rear).
- Sign (load greater than 3.1m, up to 5m wide): Wide Load Follows (facing forward and appropriate to the load).
- Lights:
  - 1 or 2 amber lights on the vehicle’s roof
  - headlamps on low beam.
- Radio communication.

**Piloting scenario 2**
- Load up to 5m wide
- Rear pilot (loads exceeding 4.5m wide require at least one class 1 pilot and one class 2 pilot)

**Minimum equipment requirements:**
- Vehicle type: A gross vehicle mass no greater than 7000kg.
- Sign (vehicle up to 3.1m wide):
  - Wide Load Ahead or Long Load Ahead (if piloting required due to excess rear overhang or overall length exceeds 25m).
  - Pilot Vehicle (facing to the front).
- Sign (load greater than 3.1m, up to 5m wide): Wide Load Ahead (facing to the rear and appropriate to the load).
- Lights:
  - 1 or 2 amber lights on the vehicle’s roof
  - headlamps on low beam.
- Radio communication.

**Piloting scenario 3**
- Load more than 5m wide
- 1st (lead) front pilot (a class 1 pilot)

**Minimum equipment requirements:**
- Vehicle type:
  - class 2 pilot: A gross vehicle mass no greater than 7000kg
  - class 1 pilot: A gross vehicle mass no greater than 3500kg.
- Sign:
  - Danger Slow Down (facing forward and, during the dark, a white light must illuminate the sign but not be directly visible from the rear)
  - Pilot Vehicle (to the rear).
- Roof-mounted lights
  - (during the day) 2 revolving amber lights on the right and 2 revolving purple lights on the left; headlamps on low beam
  - (during the dark) 1 revolving amber light on the right and 2 purple revolving lights on the left.
- Lights: (at all times) a pair of purple alternately flashing auxiliary lamps; (during the day) headlamps on low beam, or one pair of alternatively flashing headlamps operated on low beam.
- Radio communication.
**Piloting scenario 4**
- Load more than 5m wide
- 2nd front pilot*
  * (A class 1 pilot will usually escort as the lead pilot and will travel in the forward-most position of the convoy. In these cases the class 2 pilot will travel between the class 1 pilot and the load.)

**Minimum equipment requirements:**
- Vehicle type. Class 2 pilot: A gross vehicle mass no greater than 7000kg.
- Sign:
  - Wide Load Follows or House Follows (if appropriate) (facing forward and, during the dark, a white light must illuminate the sign but not be directly visible from the rear)
  - Pilot Vehicle (facing to the rear).
- Lights:
  - (during the day) 2 revolving amber lights on the right and 2 revolving purple lights on the left of the vehicle’s roof; headlamps on low beam
  - (during the dark) 1 revolving amber light on the right and 2 revolving purple lights on the left of the vehicle’s roof.
- Radio communication.

**Piloting scenario 5**
- Load more than 5m wide
- Rear pilot

**Minimum equipment requirements:**
- Vehicle type:
  - a rigid vehicle of no more than 3 axles,
  - a rigid vehicle of no more than 3 axles towing a simple trailer with no more than 2 axles.
- Sign:
  - Wide Load Ahead or House Ahead (if appropriate) (facing the rear and, if towing a trailer, mounted on the trailer)
  - Pilot Vehicle (to the front).
- Lights:
  - (during the day) 2 revolving amber lights on the right and 2 revolving purple lights on the left of the vehicle’s roof; headlamps on low beam
  - (during the dark) 1 revolving amber light on the right and 2 revolving purple lights on the left of the vehicle’s roof.
- Radio communication.
5 TRAFFIC CONTROL AT BRIDGES BEING CROSSED BY OVERWEIGHT VEHICLES

Central on beam (For vehicles travelling with an overweight permit) the overweight vehicle travels centrally on the bridge’s beam structure.

Crawl (For vehicles travelling with an overweight permit) not exceeding a uniform speed of 10km/h on bridge crossings.

Offset (For vehicles travelling with an overweight permit) the overweight vehicle’s centre is at the indicated distance from the kerb on its left.

Opposite lane (For vehicles travelling with an overweight permit) the overweight vehicle travels in the lane usually used by traffic coming from the opposite direction.

Own lane (For vehicles travelling with an overweight permit) the overweight vehicle travels in its own lane as far as practicable.

5.1 INTRODUCTION
Extremely heavy vehicles can have devastating effects on New Zealand’s road network, particularly on bridge structures.

The Transport Agency administers a permit system that allows overweight vehicles to travel on the road as long as the risk of damage is managed. In the case of bridges, this may mean that overweight vehicles have to:

• travel outside their normal lane (such as on the centre line) to access the bridge’s strongest part
• restrict their speed.

This can affect other road users. As a class 2 pilot, you can control the traffic on bridges as long as you comply with the permit conditions, equipment specifications and traffic control procedures covered in this section.

Many of the basic skills and requirements already covered in this book also apply to controlling traffic at bridge crossings. However, the Transport Agency, the New Zealand Heavy Haulage Association and the Crane Association of New Zealand have also agreed on specific traffic control requirements for bridge crossings. These are covered in the Code of practice for traffic control at bridges being crossed by overweight vehicles, published by the Heavy Haulage Association and the Crane Association.

The rest of part 5 is a copy of the traffic control requirements from the code.

5.2 EQUIPMENT SPECIFICATIONS

5.2.1 Overweight vehicle
The overweight vehicle must have a revolving amber light on the roof of the cab that is illuminated while carrying out the bridge crossing. The revolving amber light must be visible to road users approaching from the rear.
5.2.2 Traffic control vehicles
- A car, utility, station wagon, van or support truck travelling with the overweight vehicle.
- Any colour permitted.

5.2.3 Lights
- All vehicle lights to meet whichever standard is appropriate: warrant of fitness or certificate of fitness.
- One or more revolving amber lights mounted on the roof of the vehicle.

5.2.4 Communications
- Effective radio communication between the driver of the overweight vehicle and traffic control personnel must be maintained. (This must be separate from CB radio Channel 11.)

5.2.5 Mandatory safety equipment
- High-visibility jacket and, if used at night, must have with retro-reflective tape fitted.
- Stop paddle or a Stop/Go paddle (standard road works sign).
- Torch fitted with a red cone for night-time use
- Flags.

5.3 TRAFFIC CONTROL PROCEDURES

5.3.1 Traffic control
The bridges at which traffic control is required can be located by examining the Transport Agency overweight permit. Traffic control is required at a rail overbridge only if it’s stated on the overweight permit.

Traffic controllers will perform their duties in the following manner:
- Be alert at all times.
- Don’t stand with a group where you can’t be easily seen by motorists.
- Always stand while waiting for traffic.
- Don’t leave your position until it’s safe.

5.3.2 Traffic control vehicles
The vehicles are to be safely positioned to warn traffic of the hazard created by the overweight vehicle crossing the bridge. Revolving amber lights must be operating at all times when carrying out traffic control duties.

When the bridge is obstructed from the motorist’s view by a cutting, hill, hollow, bend or any other obstruction, place the traffic control vehicles in a safe place beside the traffic lane (giving ample room for traffic to stop or pull over and park) with all warning lights operating, including vehicle hazard lights, and headlights on dip.

5.3.3 Stop or Stop/Go paddle
The stop face of the paddle may be displayed when the traffic controller considers that this is the most appropriate method to instruct oncoming or following traffic to stop and park due to the road or bridge being blocked by the overweight vehicle. The Stop/Go paddle can confuse motorists if the Go side is displayed inadvertently. The Go side should be covered if such a situation could arise.
5.3.4 Where to stand
In rural or high-speed areas, traffic controllers should be located at a safe distance before the hazard so traffic will have sufficient time to reduce speed and come to a stop.

- Stand facing traffic, on the edge of the shoulder of the road, just outside the traffic lane, close to your vehicle (so you can hear your radio and instructions from the driver of the overweight vehicle). Note: Hand-held radios are much more effective in these situations.
- Always stand where you can be seen by traffic.
- Always ensure you have an escape path.

5.3.5 Slowing traffic (see 3.4.7)
To slow traffic, signal with an up and down motion of an extended arm.

5.3.6 Stopping traffic (see 3.4.7)

- Stand facing traffic, but clear of the traffic lane.
- When about to stop traffic, wait for a suitable break and hold the sign horizontal, with stop facing oncoming traffic. When approaching traffic is slowing, move from the kerb to the centre of the roadway. You should raise your free arm, with the palm of your hand toward approaching traffic.
- If time permits, drivers may be told of the reasons for the delay. Be courteous and brief, eg ‘A large vehicle is crossing the bridge’.

5.3.7 How to move traffic (see 3.4.7)
When signalling traffic to move ahead, signal with your free hand, using a sweeping motion in the direction the traffic is to move. Ensure that the Stop sign isn’t displayed.

5.3.8 Never wave the sign
- Signals must be clear and distinct.
- Don’t make drivers guess what they should do.
- Never wave your sign, either to stop or slow traffic or to inform motorists to proceed.

5.3.9 With opposing traffic (vehicle in own lane)
If the position is specified as own lane and there is sufficient width for vehicles in the opposing direction, take up a position behind the overweight vehicle:
- to warn vehicles that are travelling in the same direction of the restriction in their lane
- to prevent heavy vehicles coming closer than 30m to the overweight vehicle (cars may be closer, if necessary).

The traffic controller will then:
- allow all vehicles in the opposing direction to proceed unhindered
- advise the driver of the overweight vehicle to travel at a crawl in the left-hand lane as far as practicable (providing that is in accordance with the overweight permit)
- follow behind the overweight vehicle at the required distance with warning lights operating.
5.3.10 Without opposing traffic (overweight vehicle needs all bridge traffic stopped)

If offset, central or opposite is specified, or where there is insufficient width for opposing vehicles, two traffic controllers are required. (One of these could be the accompanying load escort pilot.)

The first controller will:

• prevent all traffic travelling in the opposing direction from crossing the bridge while the overweight vehicle is on it
• stop the opposing traffic (using standard procedures) a sufficient distance before the bridge to allow the crossing manoeuvre to be safely completed. (This can be achieved by placing the vehicle, with lights displayed, on the side of the road just past the far end of the bridge and physically controlling the traffic using the Stop paddle.)
• advise the driver of the overweight vehicle to proceed only when all opposing traffic has stopped.

The second controller will direct the following traffic as for ‘overweight vehicle in own lane’.

One method of stopping oncoming traffic is to position the traffic control vehicle at the opposite end of the bridge, on the same side of the road (clear of the lane) as the traffic is travelling towards the overweight vehicle. This is safer for the traffic controller, who can then stand beside the traffic control vehicle rather than have to cross the road.

Motorists will be attracted in the first instance to the revolving amber lights. If the traffic control vehicle is parked on the other side of the road, they may not see the traffic controller and Stop sign until it’s too late.

5.4 SAFETY ISSUES

• If the bridge is long and the overweight vehicle is travelling at crawl speed, the numbers of approaching vehicles held prior to the bridge can be large. Care must be taken to prevent vehicles from stopping close to a bend (particularly in a 100km/h area).
• If fog, heavy rain or other factors restrict visibility to less than 350m, a bridge crossing shouldn’t proceed until visibility has improved.
• If a crash occurs, warn traffic of the problem, contact the emergency services and assist as required.
• Under no circumstances should the traffic controller’s vehicle be used as an emergency vehicle.
6 LOCATION REFERENCING ON STATE HIGHWAYS (USING ROUTE POSITION MARKERS)

Route position markers are signs located throughout New Zealand’s state highway network. Load pilots use them to:

- identify reference points along a route when planning a move
- identify points on the highway specified in overweight permits
- find out where they are on a state highway.

The following markers are used.

**Reference station (RS)** (figure 16)

You’ll find reference stations about every 16 km along a state highway (see page 35 for an explanation of how the route position system works). They are the points from which other marker posts are measured. The point they refer to is a 300 mm yellow square on the road’s centre line.

**Established route position (ERP)** (figure 17)

Established route positions are intermediate reference posts that show the distance from a reference station.

**Kilometre marker post (KMP)** (figure 18)

Kilometre marker posts are approximate location guides showing the distance from a reference station.

**Bridge structure number** (figure 19)

Bridge structure numbers are mainly used on overweight permits. Each bridge has a unique number.
How the route position system works
Route positions are measured as their distance from a reference station, with the numbering usually starting at the northernmost points (North and South Islands) of the highway – so the numbers increase the further south the points are located.

The numbering for highways running across New Zealand generally starts from the easternmost points and increases as the route tracks west.
7 EMERGENCY PROCEDURES IN CASE OF A CRASH INVOLVING AN OVERSIZE AND/OR OVERWEIGHT VEHICLE

TIPS ON WHAT TO DO

• Turn on your hazard lights and find a safe place to park, preferably off the road to reduce the chance of creating another hazard.

• Check the vehicles and area for injured people. Phone emergency services and tell them:
  – what exactly is happening
  – the precise location
  – if there are any injuries and, if so, how many and how serious
  – what emergency vehicles are required (ambulance, fire)
  – whether tow trucks or cranes will be needed to clear the road.

• To reduce the fire hazard, turn the ignition off in damaged vehicles. Keep people who are smoking away.

• As soon as you’ve made sure any life-threatening situations are being looked after, manage the approaching traffic. Never leave approaching traffic without any warning.

When trained people arrive (police, fire, ambulance), give them a brief summary of what you’ve done and offer more help, but don’t interfere with their efforts to care for the injured or control the site.
8 MAXIMUM VEHICLE SIZE LIMITS FOR CLASS 2 LOAD PILOTS

Class 2 pilots can only escort vehicles of certain sizes by themselves.

8.1 INTRODUCTION
The larger the oversize vehicle, the greater the road space it needs – and the more often other road users will need help to get past safely.

Class 1 load pilots receive more intensive traffic control training than class 2 pilots. Oversize vehicles that are above certain size limits must be escorted by at least one class 1 pilot.

Class 1 and one, two or more class 2 pilots usually team up to ensure the oversize vehicle reaches its destination safely. (A class 1 pilot may be helped by class 1 pilots rather than class 2 pilots.)

The Rule sets the size limits for when a class 1 pilot becomes compulsory. As a class 2 pilot, you must know the maximum dimensions an oversize vehicle can have before a class 1 pilot must also be included in the convoy.

8.2 DEFINITIONS OF DIMENSIONS*
* Definitions of dimensions are set out in sections 6.33–6.37 and schedules of the Rule.

The rules defining the vehicles a class 2 pilot can escort before requiring a class 1 pilot are based on vehicle dimensions. The following definitions will help. (figures 22–26)

Definitions of forward distance (FD)

a. For a rigid vehicle, the distance from the rear axis to the front of the vehicle or its load, whichever is furthest forward.

b. For a full trailer, the distance from the rear axis to the front of the trailer (excluding the drawbar and front axle set with its associated carriage) or its load, whichever is furthest forward.

c. For a simple trailer, the distance from the rear axis to the centre of the point of attachment to the towing vehicle.

d. For a semi-trailer, the distance from the rear axis to the centre of the kingpin.

e. For a pole trailer with only one axle set, the distance (excluding the load) from the trailer’s rear axis to the centre of the point of attachment on the towing vehicle with the drawbar fully extended.

f. For a pole trailer with two axle sets, the distance (excluding the load) from the trailer’s front axis to the centre of the point of attachment on the towing vehicle with the drawbar fully extended.

Figure 22a. Examples of measuring forward distance (FD)
Figure 22b Examples of measuring forward distance (FD)
Front overhang (FH): the distance measured to the foremost point of the vehicle, including its load but in the case of a full trailer excluding the drawbar, from the following positions:

a) For a rigid vehicle, from the front edge of the driver’s seat, when in the rearmost position.
b) For a full trailer, the centre of the turntable.
c) For a simple trailer, the centre of the tow coupling.
d) For a semi-trailer, the centre of the kingpin.
e) For the load of a pole trailer combination, the centre of the turntable on the towing vehicle.

Figure 23. Examples of measuring front overhang (FH)

Width: the measurement from side to side of the vehicle or load, whichever is the widest.

Figure 24. Measuring the width of a load
Definitions of rear axis (RA)
a. In relation to a vehicle with only one non-steering axle, means that axle.

b. In relation to a vehicle with a non-steering axle set of two axles, means:
   i. midway between those axles, if each axle has an equal number of tyres on it
   ii. two-thirds of the distance from the lesser-tyred axle towards the greater-tyred axle, if one axle has twice as many tyres on it as the other axle.

Locating the rear axis (RA)
If the vehicle has only one non-steering axle, then the RA is at the centre of that axle. (figure 27a)

If the vehicle has a tandem axle set with only non-steering axles in its rear axle set and:
   • each axle has an equal number of tyres on it, then the RA is midway between the centres of the axles (figure 27b)
   • one axle has twice as many tyres on it as the other axle, then the RA is positioned two-thirds of the distance from the lesser-tyred axle towards the greater-tyred axle. (figure 27c).

If the vehicle has a non-steering tri-axle set in its rear axle set, then the RA is midway between the extreme axles of the set. (figure 27d)

If the vehicle has one steering axle in its rear set together with:
   • one non-steering axle, the RA is at the non-steering axle (figure 27e)
   • two non-steering axles, the RA is midway between the extreme non-steering axles of the set. (figure 27f)
**Rear overhang (RO)**

a) the distance from the rear axis to the rear of the vehicle or its load, whichever is furthest back

b) for a pole trailer, the distance from the rear axis or the centre of the rear bolster to the rear of the vehicle or its load, whichever is greater.

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**Figure 26. Examples of measuring rear overhang (RO)**
8.3 SIZE LIMITS

The vertical axis on the graph shows the width, and the horizontal axis shows the forward distance of the oversize vehicle. Dimensions are in metres.

Road space requirements generally depend on a combination of width and forward distance. Below 4.5m width, the width decreases as the forward distance increases up to 13.3m.

Here are some simple rules in using the graph to determine the category of an oversize vehicle:

All vehicles wider than 4.5m need at least one class 1 pilot.

All vehicles with a forward distance greater than 13.3m need at least one class 1 pilot.

Vehicles with a width of 2.55~4.5m have the maximum allowable forward distance (shown on the sloping line between category 2 and category 3).

(Category 3 vehicles need at least one class 1 pilot, but category 1 and 2 only need class 2 pilot(s).)

Figure 27. Pilot requirements for width/forward distance thresholds
**Category 1**
No pilot unless:
- exceeds 3.1m wide and 40km/h
- exceeds 3.1m wide and travels during hours of darkness.

**Category 2**
- One class 2 pilot (3.1, 10.5).
- Additional class 2 pilot required if rear overhang exceeds 7m.

**Category 3**
- One class 2 pilot plus one class 1 pilot.
- Additional class 2 pilot required if rear overhang exceeds 7m.

**Category 4**
- Two class 2 pilots plus one class 1 pilot.

*Here are some examples of using the graph to find out what pilots and how many are required.*

**Question:** What pilots are required for an oversize vehicle with the width/FD combination 3.5m/13m?
Method: First find the 3.5m mark on the width axis (left-hand vertical line). Next, draw an imaginary horizontal line from the 3.5m mark across the page and stop at an imaginary line rising from 13m on the forward distance axis (bottom horizontal line). (Figure 28)

**Question:** What is the maximum FD of a vehicle 3.5m wide before a class 1 pilot is also required to escort the oversize vehicle?
Method: First find the 3.5m mark on the width axis (left-hand vertical line). Next, draw an imaginary horizontal line from the 3.5m mark across the page and stop at the boundary between category 2 and 3. Drop an imaginary vertical line down. (Figure 29)
Question: What pilots are required for an oversize vehicle with the width/FD combination 3.7m/15m?
Method: First, find the 3.7m mark on the width axis (left-hand vertical line). Next, draw an imaginary horizontal line from the 3.7m mark across the page and stop at an imaginary line rising from 15m on the forward distance axis (bottom horizontal line). (Figure 30)

Question: What pilots are required for an oversize vehicle with the width/FD combination 2.7m/12m and 8m of rear overhang?
Method: First, find the 2.7m mark on the width axis (left-hand vertical line). Next, draw an imaginary horizontal line from the 2.7m mark across the page and stop at an imaginary line rising from 12m on the forward distance axis (bottom horizontal line). (Figure 31)

What pilots are required for an oversize vehicle with the width/FD combination 3.7m/9.5m during the day? What extra pilot is required at night?
Method: First, find the 3.7m mark on the width axis (left-hand vertical line). Next, draw an imaginary horizontal line from the 3.7m mark across the page and stop at an imaginary line rising from 9.5m on the forward distance axis (bottom horizontal line). (Figure 32)
9 HOW TO BECOME A CLASS 1 LOAD PILOT

9.1 INTRODUCTION
The rule requires pilots trained to a higher level than class 2 pilots to escort the very large loads.

Although this book has covered a number of traffic management methods, smaller loads won’t have such a large impact on other road users – so, in general, the degree of traffic management skills required will be less.

Class 1 pilots have intensive training on technical and practical issues associated with managing traffic.

9.2 WHAT YOU NEED
You need:

- to complete the class 2 load pilot course
- at least three years’ piloting experience since gaining class 2 certification, or to have helped a class 1 pilot on at least 25 loads. You need to supply written evidence of this when you apply for a class 1 pilot driver course
- to complete a class 1 load pilot application form.

Note: while it is not a legal requirement to hold a driver licence to be a load pilot, load pilots must still meet legal requirements when driving on New Zealand roads (eg hold a class 1 licence when driving a pilot vehicle).

To apply for a class 1 pilot driver course, contact:

Overdimension Permit Issuing Agency
NZ Transport Agency
Private Bag 11777
Palmerston North 4442.
10 OTHER SOURCES OF INFORMATION

NZ Transport Agency
Private Bag 11777
Palmerston North 4442
T 0800 683 774
F 06 953 6313

The following information relating to vehicle dimension and mass limits and operating vehicles over the normal limits can be found on the Transport Agency’s website:
www.nzta.govt.nz

Land Transport Rule Vehicle Dimensions and Mass 2016

Factsheet series 13
www.nzta.govt.nz/resources/factsheets/13

Factsheet 53a Overdimension vehicles and loads
www.nzta.govt.nz/resources/factsheets/53

Factsheet 53b Roles, responsibilities and permit requirements for overdimension loads
www.nzta.govt.nz/resources/factsheets/53b

Alternatively, hard copies are available from the Transport Agency’s offices (listed on the next page).
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