Information Bulletin IB-107B

Safe Towing

Everything you need to know for safe towing

There have been many changes in vehicle design over recent years. Modern vehicles are not necessarily stronger than old vehicles in regard to towing. Owners need to understand their vehicle towing capabilities to prevent costly damage and accidents. Owners also need to know how to equip your vehicle and how to fit and load what they intend to tow. This brochure deals with these issues as well as the amendments to traffic regulations and vehicle standards that took effect on 1 November 2002, one issue being changes to some vehicles' towing limits. See the section, "How much can you safely tow?".

Some laws that you need to know

Vehicles, trailers and caravans must meet registration standards and must be roadworthy.

- All trailers or caravans must have a rear number plate and a registration label holder fixed to the left side of the body so that the label faces outwards or forwards.
- The coupling and towbar must not obscure the number plate or lights on the rear of the towing vehicle when no trailer or caravan is attached.
- Regulations prohibit towing more than one trailer at once.
- Nobody is allowed to ride in normally registered trailers or caravans.
- When towing a trailer or caravan the maximum speed at which you may tow is 100 kilometres per hour. You must of course obey the posted speed limits.
- **Following distances outside built-up areas** - On roads outside a built-up area that do not have more than one lane in the direction you are driving, there are specific minimum following distances for long vehicles. If your vehicle is 7.5m long or longer (including any trailer and load) you may not follow closer than 200m to a similar vehicle in front of you. The exception is when you are overtaking.
- **Stopping on carriageways** - If your vehicle including trailers and load is longer than 7.5m or has a total mass of more than 4.5 tonnes you may not:
- Stop on a carriageway in a built-up area for longer than one hour unless engaged in picking up or setting down goods; or
- Stop on a carriageway outside a built-up area except on a shoulder or in a truck bay or other area set aside for parking of goods vehicles.

“Do not overtake turning vehicle” signs

Changes to the traffic regulations have given increased right of way upon turning for long vehicles displaying the sign "Do not overtake turning vehicle".

If your vehicle (meaning the towing vehicle together with the trailer and projecting load) is 7.5m long or longer you may have the sign "Do not overtake turning vehicle" displayed at the rear. This can be either a separate sign or the words can be incorporated on one of a pair of rear marking plates.

Rear marking plates may be fitted to trailers and caravans. The Department of Transport and Major Infrastructure's (DTMI) brochure on 'Rear Marking Plates' provides detailed information on their fitment.

If this sign is attached to the rear of your vehicle, other vehicles must give way whilst your vehicle uses part or all of an adjacent second lane for turning. You will have right of way to complete such turns.

It is an offence not to display this sign on a vehicle (meaning the towing vehicle together with the trailer and projecting load) with a combined length of more than 7.5m long if lanes need to be straddled when turning.

It is an offence to display this sign on a vehicle (meaning the towing vehicle together with the trailer and projecting load) with a combined length less than 7.5m long, however, it is not illegal to use normal rear marking plates without "Do not overtake turning vehicle" on such a vehicle.

How to equip your vehicle for towing

Your vehicle must be suitable and properly equipped for the type of trailer to be towed, with towbars and couplings properly designed and fitted.

Electrical sockets for trailer lights, must be fitted to the towing vehicle, and where necessary suitable brake connections.

If you are towing a wide trailer or caravan extra mirrors may be required on your vehicle. (These should be removed when not towing).

Vehicles with automatic transmission may require extra transmission oil cooling.

To tow heavy loads some vehicles may need strengthening, and/or special transmission and suspension options. A load distributing device may also be required. You should check the vehicle handbook or consult the manufacturer or the vehicle distributor regarding these requirements.

How much can you safely tow?

Most manufacturers specify towing limits for their vehicles in their handbooks. For vehicles of Gross Vehicle Mass 4.5 tonnes or less the following limits are applicable:

- Towing limits specified by the vehicle manufacturer must not be exceeded, otherwise safety will be compromised. Excessive loads may also damage your vehicle.
- If the vehicle's towing capacity cannot be determined, the loaded mass of the trailer must not exceed the empty mass (tare) of the towing vehicle, excepting where the trailer is fitted with brakes in which case the loaded mass of the trailer must not exceed 1.5 times the empty mass of the towing vehicle.
- If the trailer is not fitted with brakes then the loaded mass of the trailer must not exceed 750kg.
- The loaded mass of the trailer must not exceed the towing capacity of any component in the vehicle/trailer combination, including the towbar and towball.

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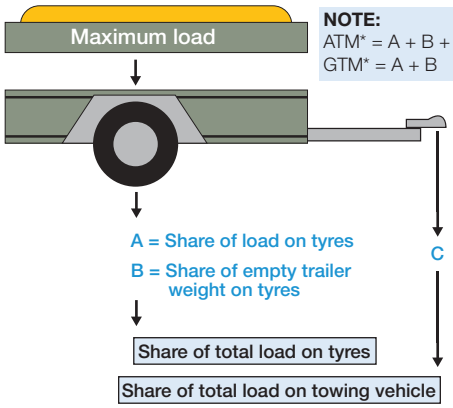
- The loaded mass of the trailer must never exceed the trailer's ATM.



NOTE:
ATM* = A + B + C
GTM* = A + B

ATM: Reference to Aggregate Trailer Mass (ATM) means the trailer manufacturer's maximum load permitted on the trailer's axles when coupled to the vehicle together with the load imposed on the coupling. Recently manufactured trailers have this ATM shown on the metal information plate on the trailer.

GTM: Reference to Gross Trailer Mass (GTM) means the trailer manufacturer;s maximum load permitted on the trailer's axles alone when evenly loaded.

Towbar safety requirements

Your towbar must comply with Australian Design Rules, Standards and Regulations.

- The capacity of your towbar and coupling must be at least equal to the loaded mass of the trailer. A towbar fitted to a vehicle built after January 1992 must be marked with its load capacity and either the vehicle model for which it is designed or the towbar manufacturer's part number.
- The towbar must not protrude dangerously, or have sharp corners that could be a safety hazard when no trailer is fitted to your vehicle.
- Towbar chain attachments must be able to withstand the rated load capacity of the towbar.
- The safety chain attachments must be mounted adjacent to the tow coupling and arranged so as to maintain the direction of the trailer in the event of coupling failure or disconnection.
- In the event of coupling failure or disconnection, the safety chain(s) should support the drawbar and prevent it dropping to the ground.
- Towbars with a removable towing lug should be fitted with safety chain connections on the non-removable part of the towbar. If the chain connections are on the removable lug then the lug must be restrained by an additional chain to prevent disconnection from the towbar if the lug attachment fails.

Trailer safety requirements

- Your trailer must meet all the standards required for registration. New trailers must comply with the Australian Design Rules as summarised for small trailers in the Vehicle Standards Bulletin No. 1 issued by the Department of Infrastructure and Regional Development.
- The coupling must be properly designed in accordance with the appropriate Australian Standard for couplings to match the full trailer load capacity and it must be marked with the load capacity and the manufacturer's name or trade mark.
- "Quick Release Couplings" which can be engaged or disengaged without the use of tools must be used when the trailer's ATM is less than 3500kg.
- Typical approved couplings include 50mm Ball couplings for trailers with ATM up to 2300kg (standard duty ball) and up to 3500kg (heavy duty ball), and Pintle Hook couplings for trailers with ATM up to 4500kg.
- Trailers of ATM up to and including 2500kg must be fitted with at least one safety chain for connection to the towing vehicle. Trailers of ATM over 2500kg must be fitted with two safety chains.
- Trailers having only a single axle and a GTM not exceeding 750kg do not require brakes.
- Trailers of GTM over 750kg must have brakes. Trailers of GTM over 750kg and not exceeding 2000kg must have braking on the wheels of at least one axle. Trailers of GTM over 2000kg must have braking on all wheels.
- Over-ride brakes may be used on trailers of GTM up to and including 2000kg.
- Trailers of GTM over 2000kg must have brakes operated from the driver's seated position. Over-ride brakes are not permitted. These trailers must have a breakaway system by which the brakes are automatically applied if the trailer becomes detached from the towing vehicle.
- Electrical lighting, wiring and reflectors must be manufactured and installed in accordance with Australian Design Rules.

Safety tips for drivers

The following procedures will help reduce risks and improve towing safety:

- Remember to allow for the extra length and width of trailers and caravans, and their tendency to "cut in" on corners and curves.
- The extra weight of your vehicle and trailer combination requires greater stopping distance when braking. Always allow for this when towing.
- Brakes should not be applied more than very lightly when cornering or travelling around a curve, particularly when the road is wet or slippery.
- Reversing a trailer can be difficult and requires extra care and practice. Directions from an outside observer watching the rear of the trailer can be helpful.
- Trailers reduce a towing vehicle's performance therefore greater care is needed when overtaking.
- Accelerator, brake and steering must be operated smoothly when towing. Unnecessary steering wheel movement should be avoided because sway or "snaking" of the vehicle and trailer can result. If sway occurs the trailer brakes should be applied gently if they can be operated separately from the towing vehicle, otherwise a steady speed or slight acceleration should be maintained if possible, until the sway ceases. The tow vehicle's brakes should only be applied as a last resort.
- Drivers must heed any "Dangerous Crosswinds" signs. Road Authorities install these signs in areas where wind gusts can affect the stability of caravans. Reduce your speed accordingly.
- When travelling downhill with a trailer or caravan, a lower gear should be engaged. This gives you greater vehicle control and reduces the load on your brakes.
- Ensure your mirrors on both sides of your towing vehicle are properly adjusted to give a clear view of vehicles approaching from the rear.
- To avoid a build-up of following traffic that is unable to overtake, consider pulling off the road where suitable to allow the faster traffic to clear.

Dealing with trucks

Encounters with road trains and other large trucks are inevitable for anyone driving in the country. To ensure these encounters are as safe as possible you should:

- Only overtake if the road is clear and visible a long way ahead (at least 1km - even more if towing). Once you have made the decision to pass, do so quickly and positively.
- Be ready for the effect of wind buffeting as you pass a truck.
- Remember that the stopping ability of a heavy vehicle is not the same as a standard car.
- Not attempt to overtake a large truck near an intersection - they often require two lanes to turn a corner.
- Slow down and move as far left as practical when meeting a road train or other heavy vehicle on a narrow bitumen road. This will prevent flying debris and dust from the oncoming truck, which can impair vision and possibly cause windscreen damage.

Safe loading tips

The manufacturer's recommended trailer load and tyre loads must not be exceeded.

The load on a vehicle must not be placed in a way that makes the vehicle unstable or unsafe.

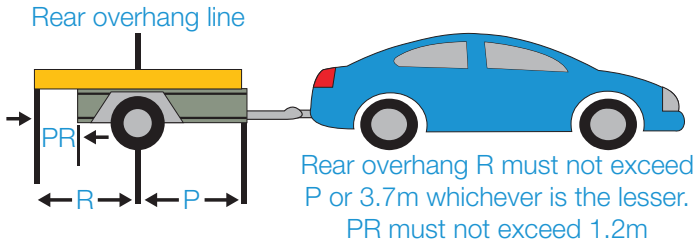
The load must be properly secured to your trailer. The Road Traffic Code 2000 specifies details on the securing of loads. For people who frequently carry loads, or people who need to carry an unusual load, it is recommended that they refer to the Load Restraint Guide.

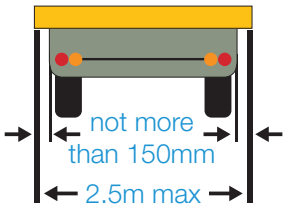
The load should preferably be kept within the confines of the trailer. If a rear projection is permissible (see below) the projection should never exceed 1.2m.

Projecting loads

Should projection of the load be required:

- All projecting loads must be made easily visible and be unlikely to cause injury, obstruction or damage.
- The load must not project more than 150mm beyond the trailer's width or to more than 2.5m overall width, whichever is the lesser (Loads in excess of 2.5m width can only be carried when a permit is issued by Main Roads WA).





- The distance from the centre of the axle or wheel group to the rear of the load must not exceed 3.7m.
- The distance from the centre of the axle or wheel group to the rear of the load must be equal or less than equal to the distance from the centre of the axle or wheel group to the front of the load.

At night a red lamp should be attached to a projecting load which cannot be easily seen.

Note: If your trailer is built to the maximum allowable dimensions, you cannot carry any projecting load.

To reduce the chances of sway, large masses should not be located towards the ends of the trailer, even if the correct balance can be obtained.

Loads should be kept as low as possible, and as close as possible to the axle. About 60% of the total mass should be forward of the axle centre.

For light trailers about 5% to 10% of the total mass of the loaded trailer should be supported by the tow vehicle coupling. The trailer drawbar should be level or slightly nose down.

However the downward force on the towbar should never exceed the maximum recommended downwards load on the towbar specified in the vehicle handbook. This can usually be achieved by careful repositioning of the load.

Load equalisers can transfer load from the towball to the front and rear suspension of the towing vehicle. This helps retain vehicle trim height and steering control. Consult manufacturers or dealers before you use load equalisers, as they can reduce the effectiveness of over-ride brakes and can overload the towbar.

Projecting loads must not obscure lights/reflectors.

Towing is different from everyday driving

Towing requires more knowledge and skill than normal driving. It can be more stressful and is likely to cause the early onset of fatigue. Be sure to plan your trip, get plenty of rest before embarking, and take regular breaks to avoid fatigue.

Remember, the correct matching of the towing vehicle and the trailer or caravan is essential for safe towing. Check your vehicle handbook and consult your vehicle, trailer and caravan dealers on all towing performance and safety aspects.

Related documents and links

- Australian Design Rules are available on the Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts website: www.infrastructure.gov.au
- Load Restraint Guide can be accessed on the National Transport Commission website: www.ntc.gov.au
- Main Roads WA: www.mainroads.wa.gov.au
- *Road Traffic Code 2000* can be accessed on State Law Publisher website: www.legislation.wa.gov.au
- *Road Traffic (Vehicles) Regulations 2014* can be accessed on State Law Publisher website: www.legislation.wa.gov.au
- Vehicle Standards Bulletin 1 is available on the Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts website: www.infrastructure.gov.au
- Vehicle Standards Bulletin 12 on rear marking plates is available on the Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts website: www.infrastructure.gov.au

Correspondence and enquiries

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For enquiries contact DTMI on 13 11 56

Towing Checklist

Inspect the towing vehicle before the trip:

Roadworthiness	Is the vehicle generally roadworthy?
Suitability	Is it suitable to tow the particular load?
Tyre inflation	Check the vehicle handbook or the tyre placard for recommended tyre pressures when towing. If these figures are not available, the tyres should be inflated to about 15 kPa above normal.
Towbar	Is the towbar rating and coupling type correct for the trailer?

Check the trailer before the trip:

Wheel bearings	Firmly grasp the tyres and rock. Is there excessive movement that requires further investigation?
Load Mass	Does the trailer suspension look right, is the load properly distributed and balanced, and is it below the allowed weight limit?
Load Dimensions	Is the distance from the wheel hub (single axle) or centre of the trailer's axle group to the end of the load less than 3.7m? Is this rear overhang equal or less than the front overhang? Confirm the projection cannot be deemed dangerous and is less than 1.2m Is the load width constrained to the trailer width plus 300mm, that is no more than 150mm on each side? Is the width less than 2.5m?
Load Restraint	Is the load properly restrained? If in doubt, refer to the Load Restraint Guide.
Brakes	Do brakes function correctly? Make one or two test stops from low speed to check the trailer brakes operate correctly.
Lights	Do all lights work properly? First check brake lamps, then left indicators, then right indicators, then park lamps, finally others. Carry spare globes. Check all lamps with tail lamps on.
Tyre inflation	Are tyres correctly inflated? Check the trailer handbook or the tyre placard.
Tyres	Do all the tyre sizes match?
Trailer coupling	Are the trailer coupling and safety chains securely fastened?
Chains	If two safety chains are fitted, are they crossed to help prevent the drawbar from contacting the road if the trailer becomes disconnected?

Inspect the trailer or caravan before the trip, soon after commencing a journey and during test stops:

Overheating	Check that brakes and wheel bearings are not excessively hot.
Coupling	Are the coupling and safety chains still secured?
Tyres	Are the tyres still correctly inflated?
Lamps	Are all lamps still functional?
Load secured	Is the trailer load still restrained correctly?
Accessories secured	For a caravan, are the doors, windows and hatches all still secure?