

you

and

(Image of boat

trailer here)

your

boat trailer

A GUIDE TO OPERATION AND CARE

Introduction

(image of boat trailer)

Welcome to the versatile world of the boat trailer. Whether your interest is sailing, fishing, water skiing, cruising or whatever a boat trailer will provide you with a new dimension to your boating activity. As the owner of a trailer boat you have the opportunity to tow your boat virtually anywhere in South Australia or interstate to explore and enjoy the many magnificent coastal and inland waterways this country has to offer.

Boat trailer problems however, can take a lot of the enjoyment out of boating. Poorly maintained or adjusted boat trailers can cause substantial damage to boats and if set up incorrectly can be dangerous to tow on the road.

This booklet has been designed to provide you with some helpful tips on boat trailer use and maintenance to maximise your safety and minimise the possibility of encountering problems. The information contained includes towing, launching and retrieval tips and advice on how to properly maintain your trailer to enable it to provide you with many years of safe and reliable service.

Please read and follow the advice contained in this booklet carefully. Also, because all trailers are not exactly the same, be sure to read and comply with any warnings and information provided by the trailer manufacturer about your particular boat trailer make and model.

Ensure too that you are familiar with any legal requirements regarding trailer brakes, load limitations and trailer registration etc as requirements change from State to State.

Safe and happy and trailering.

Boat trailer selection (images of multi roller trailer and trailer with skids)

If you need to purchase a new or second hand boat trailer then choose the right trailer for your boat. More damage is likely to be caused to a boat due to the stress of road travel than by normal operation in the water. A boat hull is designed to be supported evenly by water. When transported on a boat trailer, your boat should be supported structurally as evenly across the hull as possible. It should be long enough to support the whole length of the hull but short enough to allow unrestricted movement of any outboard motor fitted. If you intend to tow your trailer long distances with a heavy load then a heavy duty trailer with a higher weight capacity will be a better option than a trailer loaded right to its limit.

Matching the boat to the trailer -

- The weight of a boat, hull configuration width and length are basic factors to be considered in selecting a suitable trailer. Remember to include the weight of the boat, trailer, engine (if outboard), fuel (approx. 1 kilogram per litre) and all your gear when calculating the gross weight of the trailer.
- Make sure that the gross weight limit specified for the trailer is not exceeded. Check the compliance plate (if fitted). It is better to have a safety margin and minimise the possibility of bearing or structural problems rather than overload the trailer.
- On most trailers the support skids, rollers, winch post and sometimes axle(s) are adjustable to accommodate different types of boats.
- On multi-roller trailers and trailers with support skids each roller or skid should take a proportional share of the weight and the keel rollers (if fitted) should take most of the weight.
- Select a long trailer. The extra distance between the tow hitch and the trailer wheels will make it easier to tow and reverse.

Matching the boat trailer to the towing vehicle –

Make sure that your vehicle is capable of towing the combined weight of the trailer boat and equipment carried and that the tow bar fitted to your vehicle has the correct load rating. Refer to the vehicle and tow bar manufacturers specifications for this information.

Support skids v rollers -

- Ask the dealer or boat manufacturer whether they recommend support skids or rollers. Sometimes this is a personal choice. Generally roller trailer do not have to be reversed as far into the water in order to launch but skids need to be wetted to enable smooth launching and to minimise possible friction damage to the hull.

Selecting the right material and finish -

- Painted trailers look great but they are generally suitable only for freshwater use. If you are planning any salt water launching, a galvanised trailer will suit your long-term needs better.

Trailer equipment -

- The trailer should be fitted with submersible trailer lights
- It is recommended that the trailer wheels are fitted with bearing buddies or similar wheel bearing protectors
- The trailer may be fitted with a bow location device at the rear of the trailer to assist centring of your boat onto the trailer during retrieval
- The trailer must be fitted with a retrieval winch, preferably a heavy duty type to minimise the effort required for pulling the boat onto the trailer. These are available in manual or electric models and with either a cable or webbing.
- Trailer brakes are required for most boat trailers. Requirements vary depending upon the combined weight of the boat, trailer and equipment carried and weight of the towing vehicle (see next section for further details). Suitable brake systems are, vacuum assisted hydraulic or hydraulic override brakes. A trailer handbrake should also be fitted.
- Trailers must be fitted with safety chains designed to prevent breakaway of the trailer in the event of failure of the tow coupling. Safety chains should be crossed over underneath the main coupling and prevent the trailer draw bar from hitting the ground.
- Boat tie-downs should be located to enable the bow of your boat and transom to be properly secured to the trailer to prevent movement during road travel and braking.
- Always carry a spare wheel with correctly inflated tyre, a suitable jack (your car jack may not be suitable) and wheel brace.
- Include wheel chocks and spare wheel bearings if travelling in remote areas.
- A jockey wheel is a must preferably with an inflatable tyre in order to support the front of the trailer when disconnected from the towing vehicle and to enable the trailer to be manoeuvred.
- Ensure that heavy duty tyres are fitted. For larger heavier boats and trailers light truck tyres are ideal.

Boat trailer brakes – legal requirements

Boat trailers built before July 1990 are exempt from the requirement to have brakes fitted provided:

- The laden mass of the trailer does not exceed 2 tonnes
- The unladen mass of the towing vehicle is at least 1.2 times greater than the laden mass of the boat trailer which includes the boat, trailer and all other equipment
- The speed of the vehicle and boat trailer does not exceed 90 km/h
- The boat trailer complies with all other requirements of the Road Traffic Act, Rules and Regulations
- The towing capacity specified by the manufacturer of the towing vehicle is not exceeded

Note – the above exemption expires at midnight on 30 September 2003

The following legal requirements apply to boat trailers in South Australia built after July 1990 or which do not meet any of the above conditions:

- Boat trailers of gross trailer mass (GTM) not exceeding 750kg do not require brakes. (GTM is the combined weight of the boat, trailer and equipment transmitted to the ground through the axle(s) and wheels).
- Boat trailers of GTM between 750kg – 2 tonne must have brakes fitted on both wheels of one axle (hydraulic overrun brakes are normally used)
- Boat trailers of GTM in excess of 2 tonne must have brakes fitted to the wheels of all axles **and** be operable from the normal driving position of the towing vehicle **and** be activated automatically and quickly if the trailer breaks away from the towing vehicle

Before you head off

Before each trip with your boat trailer, be sure to check -

- Tyres are in good order and correctly inflated. Tyre manufacturers often show recommended inflation pressures on the side of the tyre. Under inflated tyres cause more blowouts on the road than anything else.
- Tow coupling between the trailer and car is the correct size and securely connected. 50mm diameter balls are the most common size.
- Safety chains are correctly attached

- Electrical plug is connected to the vehicle and all lights are operating correctly – it only takes a minute to check that the tail lights, indicators and stop lights are operating
- All wheel studs are present and correctly tensioned.
- Your boat is secured to the boat trailer – make sure the bow eye safety chain is secure and transom or gunwale tie-downs are correctly tensioned to hold the boat solidly on the trailer
- Wheel bearings are full of grease – waterproof grease is best
- The boat trailer is loaded evenly from front to rear and side to side. Also ensure that loose objects are secured or stored away where they cannot become missiles in the event of an accident. Too much weight on the rear of the trailer will cause it to fishtail and may reduce traction on the rear wheels of your car
- That your side mirrors are properly adjusted and large enough to provide a clear view to the rear. You may need to fit additional mirrors to achieve this.
- Remember to drain away any accumulated water as a result of washing or rain from inside the boat. Water weighs about 1 kilogram per litre and will shift with the movement of the boat during towing.
- Make sure that your brakes are working, are properly adjusted, master cylinder fluid level checked and the braking system inspected to ensure there are no signs of air or hydraulic fluid leaks.

On the road

Take a ‘shakedown’ cruise before you make your first trip with your boat trailer to familiarise yourself with the handling characteristics and to make sure everything is working correctly. Practise reversing and braking in a quiet secluded area. Once you get onto the highway -

- Keep to a moderate speed – remember there is much less strain on your boat, boat trailer, car and yourself when driving at moderate to slow speeds.
- Avoid sudden braking and turns – remember that your towing vehicle has to slow not only itself but also several hundred kilograms of boat and trailer. Remember to leave plenty of room in front of you, behind you and beside you when on the road.
- Shift to a lower gear when travelling up or down hill and avoid using overdrive (if fitted). Using a lower gear when travelling downhill will reduce the load on your brakes
- If your car is fitted with a hand control adjustment for your trailer brakes adjust it so that your trailer brakes come on just before your car brakes when braking. This will ensure efficient straight line braking and minimise the chance of jack-knifing your trailer

- Allow more time to brake, accelerate, overtake and stop
- Don't cut corners – you will need to allow more room when turning corners as the turning radius whilst towing a boat trailer is much greater. Running over kerbs will damage the sidewalls of your tyres, which could result in a blowout.
- Watch the wind as towing during windy conditions or when buffeted by the back draft from semi-trailers etc can make towing your boat trailer a little more challenging.
- Signal your intention well before turning or changing lanes. Always check your rear view mirrors particularly before turning or changing lanes to avoid any nasty surprises for yourself or other drivers.
- Always drive courteously – allow faster moving vehicles to pass you whenever you can. Keep to the left side of the road and be prepared to slow down if necessary to allow passing traffic to quickly return to the correct side of the road.
- If a problem occurs – stay calm and avoid any sudden violent manoeuvres or braking. A sudden bumping or fishtailing may be the result of a flat tyre. Don't jam on the brakes or flatten the accelerator to drive out of it. Apply gentle braking pressure and stop in as straight a line as possible.

At the launching area

Once you arrive at the ramp find a quiet area in the car park away from the ramp or in the area set aside for rigging/de-rigging, if there is one. This is where you should load your gear and prepare your boat for launching **NOT** at the ramp. Blocking the ramp is bad ramp etiquette and is likely to result in a confrontation at the ramp – guaranteed to ruin your day:

- Check the boat to ensure that no damage was caused by the trip
- Load all your equipment, fishing gear etc on board now. Don't wait until you have launched to do this as this will unnecessarily occupy a jetty or floating pontoon area and inconvenience others waiting to use the facility.
- Remove the stern tie-downs **but** make sure that the winch cable is properly attached to the boat bow eye and locked in position. Loosen the bow tie-down so that it can be easily removed **and** leave connected to the bow eye so that if the boat commences to move backwards on the trailer too soon the tie down will prevent the boat from launching on the ramp – this happens more than you think.
- Raise the motor outboard leg (unless an inboard motor) to ensure that it does not hit the bottom during launching
- Ensure that the drain plug(s) is in and tightened correctly
- Disconnect the trailer lights unless they are submersible lights

- Attach bow and stern lines to your boat to enable you to manoeuvre your boat once it is floated off the trailer. The bow line will prevent your boat from drifting too far once launched and the stern line will prevent the wind or current pushing the stern of the boat sideways perhaps into another boat.
- If not familiar with the launch ramp take the time to inspect it for condition, gradient, depth and other features and plan your launch strategy. A couple of minutes spent doing this could save you some time and embarrassment later. Make a note of the wind direction, strength and current and determine how this will effect your boat once launched

Launching

It is suggested that you get some assistance from a passenger or bystander before backing down the ramp. This will make your job easier and safer. Most people are willing to help and when others need a hand you can return the favour. Get your helper to stand where you can see them either through your rear view mirrors or elsewhere. Remember you cannot see the area **directly** behind your boat and an extra pair of eyes may prevent injury or damage:

- When backing the trailer drive **slowly** there is no need to rush. The slower you go the easier it is to correct as you reverse down the ramp. One technique is to put your hand on the bottom of the steering wheel, use your mirrors and turn the wheel slowly in the direction you want the trailer to go. Practice this in the driveway a few times and you'll get the hang of it.
- Usually you just need to keep gentle pressure on the footbrake as you ease the rig down the ramp. When you have determined where you need to stop just gently increase the braking pressure until stopped. Sudden hard braking pressure could cause a lock up on a slippery ramp and cause the whole rig to slide further down the ramp. You only need to launch your boat remember – not the whole rig.
- Stop so that the rear wheels of your vehicle are clear of the water. This will generally keep the exhaust pipes out of the water. If the exhaust pipes become immersed you have gone too far and your engine may stall.
- Only reverse the trailer as far as you need to enable the boat to roll or float off the trailer without striking the bottom. The gradient of the ramp and design of the trailer and boat will determine how far this needs to be. Generally multi roller trailers do not have to be reversed as far into the water as trailers fitted with support skids which need to be wetted to enable smooth friction free launching.
- Engage the vehicle handbrake, select park if an automatic and put chocks behind the rear wheels of your vehicle. This will keep your rig safely on the ramp right where you left it when you get out of your vehicle – too many people just rely on the vehicle handbrake to retain several tonnes of vehicle boat and trailer. You do not need the handbrake to fail when you are standing between the rear of the vehicle and the trailer.
- Release the winch, remove the winch cable hook and bow tie-down from the bow eye. If the boat doesn't start moving off the trailer a push should get it going.

- Ensure that you or someone is holding the bow and stern lines and ease the boat off the trailer. This should not require too much effort as gravity and the gradient of the ramp should make this a simple task. If the boat is difficult to get off the trailer you will need to get your rollers or skids condition and settings checked.
- Once launched manoeuvre your boat further down the jetty or pontoon (if provided) before securing it so that the mooring area immediately next to the ramp is kept clear. This will enable others to use the ramp while you are parking your vehicle. If there is no jetty or pontoon just manoeuvre your boat clear of the immediate launching area.

Retrieval

The steps for retrieving your boat from the water are basically the reverse of the launch procedure. Keep in mind however that some conditions may have changed since you launched. As you approach the ramp area take a note of factors such as:

- A change in the wind direction and strength
- A change in the current, tide or available depth of water. Slime may be present on the ramp at low tide making it slippery.
- Any increase in boating traffic

Once you have manoeuvred your boat back onto the trailer and secured the winch cable and bow tie down to the bow eye of your boat, accelerate gently up the ramp. If the rear wheels spin traction has been lost and it will be difficult to remove the trailer from the ramp. Try to add more weight to the rear of the towing vehicle.

Once back at the rigging/de-rigging area prepare your boat and trailer for the road, as it was when you previously arrived at the ramp.

If washing facilities are provided this is a good time to wash your trailer with fresh water. Be sure to wash all salt water from the vicinity of the brakes, brake callipers, wheel bearings and springs. Salt water has a tendency to collect and cause corrosion in these areas.

When driving away from the rigging/de-rigging area periodically apply gentle pressure to the brakes to dry off any residual moisture. When you need to operate your brakes further down the road you need them to be dry and to operate efficiently.

Maintenance & storage

If there were no wash-down facilities back at the boat ramp thoroughly wash your trailer etc at home or wherever it is normally stored.

Follow the manufacturer's instructions for regular maintenance and remember to:

- Check and ensure that the wheel bearings are full of grease and that there is no evidence of free play in the bearings

- Pump grease into any grease nipples in the springs (if fitted). Be careful not to overfill the wheel bearings with grease as this could blow out the 'O' ring seals
- Trailers and wheels are often galvanised but this does not make them impervious to rust. Coat springs, axles and other metal components subject to immersion with fish oil
- Check the tow bar assembly at least quarterly for wear and tear. Lubricate the ball and coupling with RP7 or similar or grease
- Check the trailer for stress cracks and corrosion. Remove any corrosion with a wire brush and paint with re-galvanising paint
- Regularly inspect tyres for signs of wear, ensure wheel studs are correctly tensioned and correct tyre pressures maintained
- Keep the brakes serviced and cables and rollers lubricated
- Keep the trailer clean and remove dirt and road grime from the springs and frame
- Spray the winch with RP7 or similar and lubricate all shackles. Immediately replace any frayed cables. Check all nuts and bolts
- Replace deteriorated rollers or skids and ensure that they are adjusted to the correct height. Lubricate the securing bolts
- If possible keep the boat and trailer under cover and parked on a paved area
- If the boat and trailer is going to remain idle for an extended period jack the trailer frame up onto blocks to relieve the load on the springs and to avoid flat spots on the tyres

If you do not feel confident with some aspects of trailer maintenance or do not have the time then you should periodically have your trailer serviced by a recognised manufacturer or service outlet.

Security

Your boat and boat trailer are an expensive investment and could be a target for thieves. To minimise the possibility of theft it is recommended that your boat and boat trailer is secured away under cover when not in use.

When your car and boat trailer are unattended at remote boat ramps they are vulnerable. It is a good idea therefore to obtain a trailer coupling lock so that when your trailer is unattended it is difficult for a thief to merely hook up your boat trailer to their vehicle and drive off.

Some trailer manufacturers sell these locks or you can make up your own using a section of heavy duty chain or cable and padlock. This can be used to secure the trailer to your car and/or prevent the trailer coupling from being removed from the tow ball of your vehicle. A trailer coupling lock can also be used to prevent the trailer coupling mechanism from operation when not connected to your car. Wheels too can be fitted with lockable wheel studs to prevent removal of wheels.

It is a good idea to make a note of your trailer serial number. This number should also be welded or engraved onto the trailer frame as the specification and registration number plates can be easily removed.

From 1 September 2001 a new hull identification number (HIN) system known as BoatCode was introduced for recreational vessels in South Australia. Further details of this system can be obtained from your nearest Transport SA Customer Service Centre or by contacting the Transport SA website – www.marine.transport.sa.gov.au