

TOWING YOUR TRIDENT

While the Trident is not exactly a trailer-sailer, it is quite feasible to tow one behind a suitable vehicle, given a braked trailer that is strong enough and the means to load and unload when required. Are you thinking of taking to the road to extend your cruising range? Or just bringing her home for winter maintenance? Here Bob Doe and David Blackburn look at some of the legal, safety and practical issues that anyone contemplating using a trailer for a Trident is likely to have to think about.

These notes are the first stab at creating some useful advice on towing a Trident. The hope is that they can eventually be added to the online Trident Owners Manual. Comments and corrections are welcome along with any first hand experiences you have had trailing a Trident. Please send them to the editor (see the address on page 2 of this issue).

Trailer

Capacity: The original specification of the Trident suggests it displaces 1835kg (4040lbs). Any Trident

equipped for cruising is likely to weigh considerably more than this, however, as is one that has been fitted with a diesel engine in place of one of the original Vire 6 or Dolphin 12 petrol engines. Only by weighing the Trident and trailer on a weighbridge can you be really certain of the all-up load. But it is likely that any Trident trailer needs to be capable of carrying at least 2000kgs.

Trailers of that weight must be braked and are likely to be twin-axled to spread the tyre loads over 4 wheels. The tyres used need to be suitable

for the total weight of the trailer and boat. A suitable trailer is itself likely to weigh 4-500kg so the total weight of towed boat and trailer is likely to be in the region of 2,500kg. So the four tyres should have a maximum load rating marked on the tyre wall of at least 625kg.

Design: The construction of the trailer obviously needs to take account of whether the Trident is fin, bilge or drop keel and how the boat is to be loaded and secured. If the Trident is to be floated onto a submerged trailer rather than loaded by crane some means of locating the position of the submerged trailer needs to be



With an all-up weight for trailer and Trident likely to be around 2,500kgs, a substantial tow vehicle is needed and a 4-wheeled braked trailer

incorporated such as docking arms; water-resisting bearings may also be advisable on submerged trailers.

Box section steel components may be susceptible to unseen internal rust. Galvanised trailers are likely to withstand corrosion better. An adjustable jockey wheel is needed to support the unhitched trailer. Also a tow hitch rated for the towing loads involved. Anti-snaking stabilising devices are also available to help to help damp down sideways movement.



Four-wheel drive may be appreciated when negotiating weedy slips or rough ground. General purpose flatbed trailers need to be long enough to enable the Trident to be positioned forward in a nose-heavy position without hitting the towcar

Towcar

A boat and trailer weighing 2,500kgs is unlikely to be legally towable by many ordinary cars. Heavier 4x4s and SUVs like Landcruisers or the Range Rover Discovery are possible towing vehicles, as are some large vans or small trucks.

Four-wheel drive will be appreciated where the trailed Trident has to negotiate slippery ways or soft ground. Front-wheel drive towcars may experience traction problems on roads, particularly on hill starts, where rear wheel drive may benefit from the additional weight of the trailer.

The Vehicle Identification Number (VIN) plate on a vehicle indicates the maximum weight you may tow with that vehicle. The handbook may also provide such information. The VIN plate can usually be found under the bonnet or on a front door sill. As well as carrying the identification number, the VIN plate specifies the *Gross Train Mass*. This is the maximum permissible total weight of the towcar, trailer and boat and must not be exceeded. In addition, vehicle manufacturers may indicate a maximum weight that should be towed by that vehicle, taking account of its construction etc.

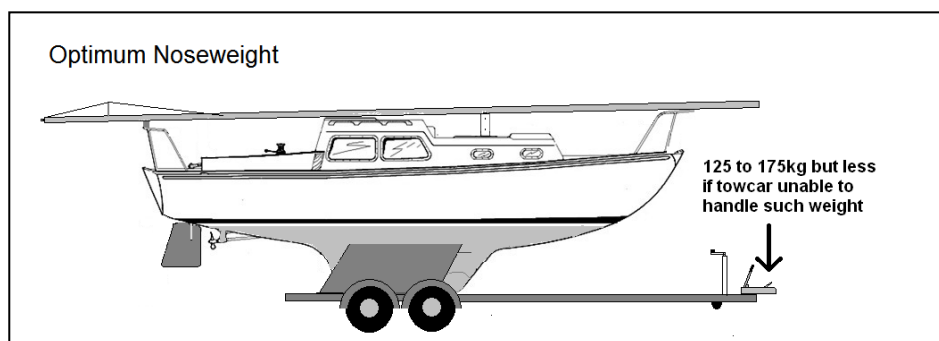
Ideally towcars should be

heavier than their trailed loads to reduce the risk that the trailer will overwhelm the towcar. This may not be feasible with a 2.5tonne load, however. Diesel engines are often preferred for towing as they tend to have higher torque. One rule of thumb for towcars suggests minimum engine power of 40bhp per tonne of towcar+trailed load is advisable.

Loading

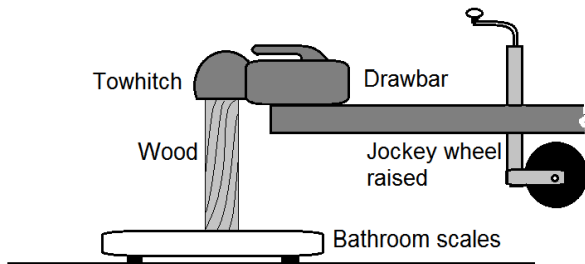
Towing stability is said to be optimised with a loading of 5 to 7% of the weight of the trailer and load bearing down on the towbar. This “noseweight” for a Trident trailer (125-175kgs for a 2,500kg trailer) may exceed the rated capacity of the towbar or the manufacturer’s limit on the vertical towbar load the vehicle is capable of bearing. So the noseweight may need to be lowered below this optimum accordingly.

This nose-heavy arrangement is largely achieved by positioning the centre of gravity of the boat slightly ahead of that of the trailer. This may



require the position of the loaded boat to be adjustable fore or aft once loaded on the trailer with mast and gear stowed ready for trailing. The noseweight can be checked on level ground by positioning a suitable length of wood vertically between the tow hitch socket and a set of bathroom scales on the ground underneath it. Raise the jockey wheel off the ground to measure the weight exerted on the towball.

CHECKING THE NOSEWEIGHT

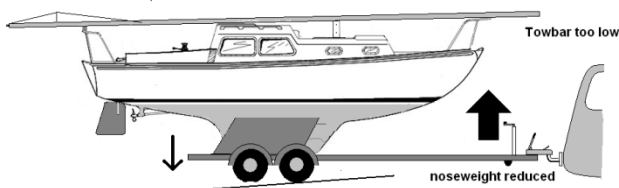


Minor adjustments to noseweight may be possible by repositioning heavy items (e.g. gas bottles and trailer spare wheels) aboard the boat or trailer. But towing stability is also helped by ensuring heavy items are positioned over the wheels; weight right aft increases the tendency of the trailer and load to swing from side to side (like a pendulum) and makes snaking more likely.

Once the boat has been correctly positioned on the trailer, some means are then required to keep it in place, and particularly to prevent it sliding forwards when braking. Heavy duty ratchet straps are used by some or blocks that can be fixed down in the channels in which the keels rest.

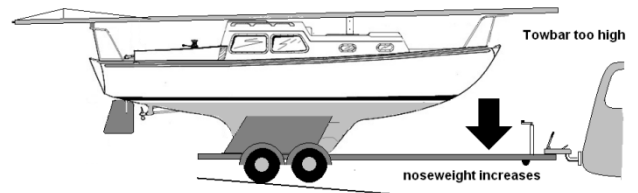
Matching towbar and hitch

With a rigid drawbar or A-frame, the correct noseweight measured at the hitch will only be transferred to the towcar if the tow hitch and tow bar are both at the correct height. Exactly matching the height of the towball to that of the trailer hitch is not normally necessary with a single axled trailer as the load pivots on the axle.



With a four-wheeled trailer, however, if the tow hitch is too high for the towball, the trailer will have to be tilted forward to connect the hitch, effectively shifting weight onto the forward axle. Transferring weight to the front wheels and

lifting the back ones in this way will reduce the noseweight. If the trailer tow hitch is too low so that it has to be lifted (along with the front trailer wheels) to reach the towbar, the hitch weight will increase.



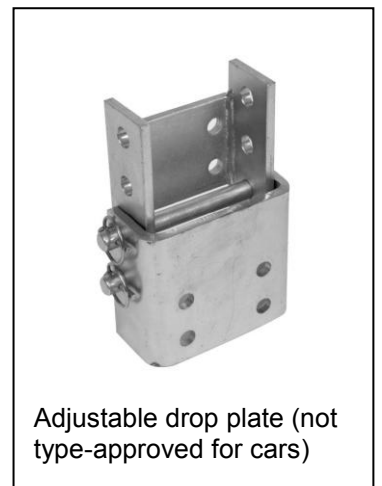
It may be possible to lower a towball using a drop plate. But towbars fitted to cars must now be type-approved to be EU compliant, including any drop plates used to adjust the towball height. Commercial vehicle towbars are apparently not required to be EU compliant at present so may be more readily modified to suit the trailer. This potential mismatch may make hiring a suitable towing vehicle for occasional tows problematical unless it comes with towbar at the right height or one that is readily adjustable.



The drop plate on this Land Rover towbar allows the towball height to be adjusted to match the trailer hitch

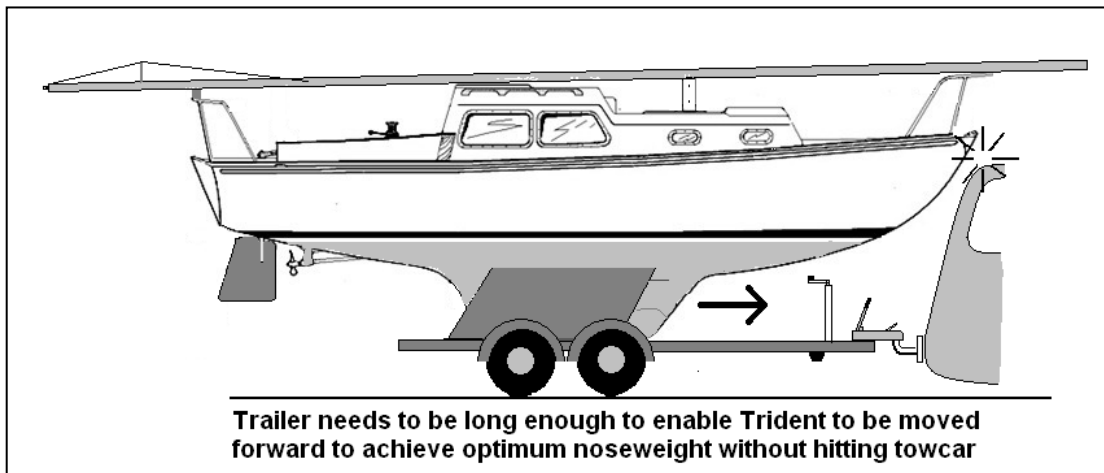
Are you licensed to tow a Trident?

If you passed your driving test on or after 1 January 1997, you can usually only tow an outfit (car and trailer) with a combined maximum weight of 3,500kg unless you have taken an additional driving test. Any feasible car, trailer and Trident combination is likely to exceed 3,500kg. Licences issued prior to that date normally entitled you to move a gross train



Adjustable drop plate (not type-approved for cars)

weight up to 8,250kg. If you have such a licence replaced (due to loss or change of address etc) you need to check this entitlement has been included on the replacement.



Stay legal

The rules on who can tow what have become very complex in recent years. The Police meanwhile have announced a crackdown on illegal towing and vehicles with trailers are likely to find themselves targeted for roadside checks (sometimes with mobile vehicle weighing equipment). For uptodate guidance on towing law see: <http://www.ntta.co.uk/law/>

Trailer tyres that do little mileage are more likely to perish than to wear out. Their walls can become weak and sag. It is recommended they be replaced every 5 years regardless of tread wear. They are particularly susceptible to failure if left standing for months in strong sunlight with 2000kg of Trident bearing down on them. Modern tyres are marked with a DOT code which indicates when they were manufactured.



Orla's trailer has angled plates to guide the central ballast keel into position when floating her forwards onto the immersed trailer. The central keel is about an inch deeper than the bilge plates which are supported on wooden boards to make up the difference and keep the hull level.



Docking arms show where the submerged trailer is lying and the stem post helps to locate *Orla* correctly fore and aft. Markings on the docking arm show when the falling tide has reached just the right level to float her onto the trailer. But immersion in seawater can increase trailer corrosion and damage brakes and wheel bearings. Hose down afterwards and service regularly.

Boat fuel and water tanks should be emptied to lighten the tow and prevent the contents slopping around to make it more stable. Remove the winch handle before towing; that is how they get lost. Use extending wing mirrors; apart from the legal requirements of field of rear vision, they are also a useful guide of your width to both other traffic and yourself.

Launching:

It may be useful to use a rope to extend the distance between the towing vehicle and trailer when launching on slipways, especially on slippery or shallow ramps that could take the vehicle too far into the water. Don't forget to take the lighting board off before you launch. They don't like water and it means you are still tied to the trailer.

A tyre made in the 1980's should have something like **DOT 108**. That means made in the 10th week of 1988. A tyre made in the 1990's might say **DOT 026**. That's the 2nd week of 1996. A tyre made in the 2000's might have something like **DOT 2705**. That's the 27th week of 2005.

Securing gear onboard

The mast may require a secure crutch to support it aft and at a midpoint. Don't forget your mast will overhang the boat and can be difficult to gauge when turning as it may protrude. You can use insulation tape to wrap the halyards, wires and stays to the mast. This will keep them tight, tidy and secure.

Any loose hatches or seat slats that could be blown or shaken off at speed should be fixed down or stowed inside as well. Any loose gear aboard could be thrown about or subjected to severe jolting.

Shifting as much gear (such as sails and outboards) as possible from the boat to the towcar, provided it has the capacity for this, helps to increase the stability of the towed outfit.

The National Trailer and Towing Association advice on boat trailers recommends:

- Hubs and brakes should not be immersed in water, particularly salt water.
- If they have to be immersed, do not do so when the hub is hot as this increases the ingress of water.
- Keep immersion times to the very minimum and do not leave the trailer standing in water after the boat has been launched.
- After immersion in salt water, the hub assembly and whole trailer should be thoroughly hosed down with fresh water.
- Do not park the trailer for prolonged periods with the handbrake fully on, particularly when the hub is wet. If necessary, chock the wheels.
- It is recommended that the trailer is serviced more regularly than otherwise would be the case and certainly at least every 3 months irrespective of mileage. This must include a brake strip down and re greasing of bearings.
- Hubs with unitised bearings cannot be greased and whilst they are more resistant to the ingress of water, particularly if allowed to cool before immersion, they are not waterproof. Repeated immersion will eventually lead to their failure.