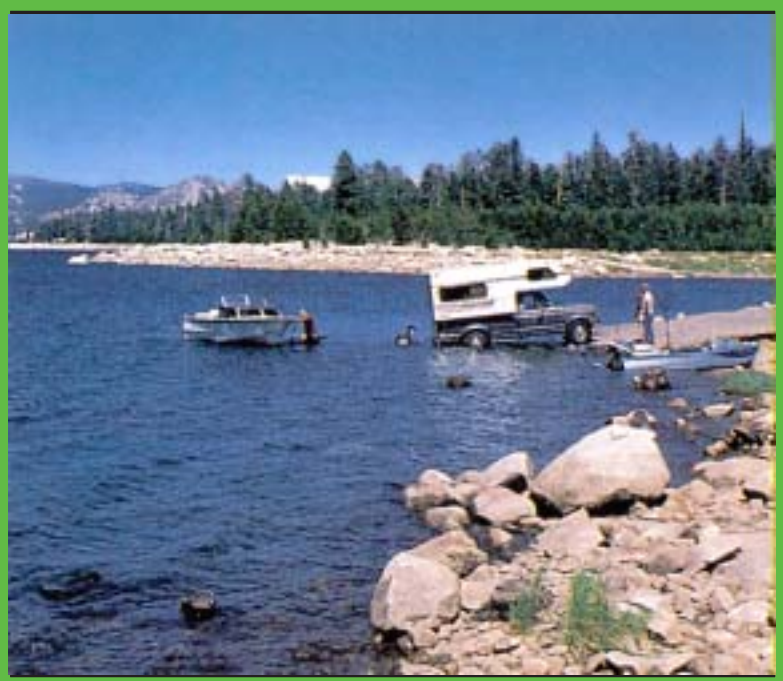




safe towing tips for
trailer sailors



California Natural Resources Agency

California State Parks

DIVISION OF BOATING AND WATERWAYS

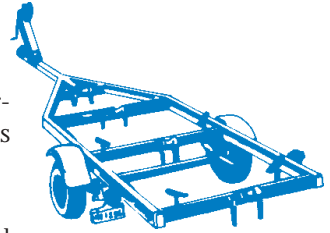
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Your Boat Trailer

Your boat trailer is an important part of your boating equipment. All too often, a trailer does not receive the attention that it demands and deserves. After selecting the appropriate trailer for your boat and tow vehicle, proper maintenance and continual care when hitching and towing are necessary. *If care and maintenance are neglected, you may be endangering the safety of your boat, your car, your family, yourself and others.*

Selecting the Proper Trailer

Two important needs should be considered in determining the proper trailer for your boat: the boat's needs and your needs.



First, the trailer should “fit the boat,” allowing equal distribution of the hull weight. The trailer should be long enough to eliminate any overhang of the boat transom but short enough to accommodate a propulsion unit of the boat in its fully extended or “down” position. The trailer should be designed to carry the total weight of the hull, engine, equipment and extra gear normally carried.

Second, a boat which will always be hoisted in and out of the water does not need a trailer as elaborate as the types of trailers used for launching. Shallow sloping shores or unimproved launch sites may call for a “tilting,” “breakaway,” or extending-tongue trailer. A trailer that meets your boating needs makes launching and retrieving easier and safer.



Hitching Up

Trailer hitches come in a variety of shapes and sizes. Most boat trailers connect to a ball hitch that is bolted or welded to the towing vehicle. Clamp-on bumper hitches are not recommended for heavy loads or continual towing. The weight a loaded trailer places on the hitch of the towing vehicle is called the tongue weight. Special heavy-duty equalizing hitches are recommended for trailer tongue weights of 250 pounds or greater. Improper installation of heavy-duty equalizing hitches on trailers equipped with surge brakes can cause brakes to lock—follow instructions carefully. The trailer hitch itself should match the size of the ball hitch. NEVER use a ball hitch that is too small.

It is recommended that the coupling hitch on the trailer have a lock or similar device to prevent it from vibrating loose. Periodically lubricate the hitch for longer wear and quieter turns. The trailer must be equipped with at least one, preferably two, safety chains strong enough to control the trailer if the hitch should come loose or break. The chains should be securely attached to the towing vehicle at a place separate from the ball and bracket. The chains should be long enough to allow turning but not long enough to drag on the ground.

Loading the Trailer

The weight of the boat, equipment, and additional gear should never exceed the manufacturer's rated weight capacity. Proper distribution of the load is of vital importance.

Too much weight on the hitch will cause "tail dragging" of the towing vehicle, impair steering and raise the beam of your car's headlights into the eyes of oncoming traffic.

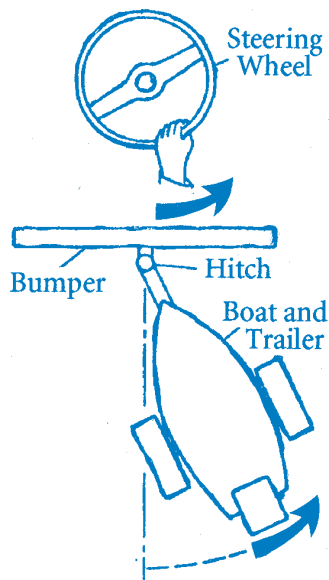
Too little, or negative, weight on the hitch will cause the trailer to sway or "fishtail."

The solution to proper distribution of the load is to adjust the wheel carriage either forward or back. If the carriage cannot be adjusted, relocate movable gear. If this fails to correct the problem, consider another trailer of a different design or consult a trailer specialist who may recommend corrective measures.

Towing

Under California law, it is an infraction to tow a vessel containing a passenger, except when engaged in launching or retrieving the vessel.

Extra caution is necessary when towing any trailer. The heavier the rig, the more time it takes to accelerate, pass, and stop. A long rig requires a larger turning radius. Curbs and obstructions should be given wide clearance. Most boats on trailers obstruct the rear view of the driver. In this case, a rear-view mirror on each side of the towing vehicle is required by law. The trailer boater should be familiar with traffic and highway laws relating to the towing of trailers. Contact the local California Highway Patrol office for further information.



If you are unfamiliar with your trailer or haven't towed before, spend some time practicing in a place that is spacious and free of traffic. Take a friend along and practice accelerating, braking, turning, and backing. Learning to back a trailer can be confusing at first. A helpful hint: while grasping the bottom of the steering wheel, move your hand in the direction you want the trailer to go. Place some markers out for spacing and practice parking, and if possible, simulate a passing situation so you get an idea of the time and distance required.

Test the brakes before getting on the open road. Watch the trailer in the rear view mirrors and listen for unusual noises.

After 5 or 10 miles of towing, stop and check the trailer, hitch, chain, tires, lights, wheel bearings and gear in the boat. On a long-distance tow, repeat this inspection about every 100 miles.

Launching and Retrieving



Launch facilities are often crowded and busy. Occupying the ramp for preliminary launching steps is a discourtesy to waiting boaters. The following tips are offered to ensure safe launching and retrieving.

- Before you leave home make sure accessories (blower, bilge pump, lights) are in good working condition.
- Prepare the boat for launching in an adjacent parking area (or at the top of an uncrowded ramp). Remove all tie-down straps, disconnect trailer wiring plug from car. Keep winch line connected until just entering the water. This will prevent the boat from coming off the trailer in the event of an emergency stop while launching. Load safety equipment and gear into boat. Check drain plugs.
- Don't let the noise and confusion of a busy ramp rush you. You will make fewer mistakes if you proceed with a careful and deliberate launch.
- Back the trailer to the left if possible. This will allow better launching visibility.
- If you must leave your vehicle on the ramp, set the parking brake, block the wheels, and set the transmission in "park" or first gear.
- If the launching facility has a floating dock you may wish to secure a line at the bow of the boat and assign someone to stand on the dock while you "float" the boat off the trailer.
- In retrieving your boat, make sure the boat is properly placed on the trailer. If the boat has an outboard engine, or an inboard/outboard (I/O) unit, raise it before placing the boat on the trailer. Pull the trailer up steadily to prevent spinning the wheels.
- Never allow a person to stand in line with the winch cable when it is loaded or is taut.
- Before entering a roadway, make sure lights are connected and working, the tie-down straps or clamps are in place, and the lower I/O unit or outboard is in its trailering position. Double check your hitch and safety chains. Remove or secure gear inside the boat to prevent damage from shifting or to prevent lightweight items from blowing out.

Lights

California law requires a trailer to have two red taillights on the rear that may be combined with the stop and turn signals. Trailers over 80 inches wide require clearance lights and rear brake lights visible for 500 feet. A car towing a heavy trailer must have its headlight beams adjusted to compensate for the upward tilt.

If the lights will be submerged, waterproof light fixtures should be used. Water promotes contact corrosion and may cause the lamp to crack and short out the entire lighting system, so it is a good idea to carry spare lamps. The wire coupling to the towing vehicle should be high enough to stay dry, or disconnected when the trailer is launched.

Never rely on the trailer hitch for electrical ground connection. Four-pole connectors should be used.

Wheels

Tires should be inflated to the manufacturer's recommended pressure. Carry a spare tire and wheel, and a jack that fits the boat trailer.

If the wheel bearings are submerged, waterproof bearings and caps should be considered. If water gets into the hub, lubricating grease will wash away and the bearings will eventually burn out or seize, causing damage and creating a safety hazard. Waterproofed bearings should be inspected prior to each boating season and periodically during the season. Non-waterproofed bearings should be checked more often.

Carry a spare set of wheel bearings, seals, and grease.

Special care should be given when traveling with small-diameter wheels on unimproved roads.

Trailers over 3,000 pounds gross weight (combined weight of boat, trailer, and gear) must have a braking system.

If a trailer has electric or other power brakes, the braking system must be operated from the towing vehicle and the two vehicles must be able to stop within 40 feet from 20 M.P.H.

Frame and Roller or Pads

Rust should not be allowed to accumulate on the trailer frame and roller parts. If rust forms, remove the rust and repaint with an antirust paint. Some trailers offer galvanized coatings to prevent rust. Rollers should roll freely and should not have cracks or flat spots. Pads should not have cracks or flattened areas. Rollers and pads can be adjusted both up and down, and forward and backward to provide the best support. For most hulls, the vital support points are:

- Just under the bow
- The line of the keel and the planking on each side
- Where the bottom meets the side and where interior weights are concentrated
- The transom

Towing Vehicles



Most vehicles are limited in towing capacity. They are designed to carry people and small loads only. Towing heavy loads places extra demands on the engine, transmission, brakes and other systems.

The essentials for any vehicle used for trailer towing are:

- Adequate power to merge with traffic and climb with a load.
- Heavy-duty engine cooling system.
- Properly running transmission, possibly equipped with a transmission cooler.
- Brakes with premium lining.
- Heavy-duty springs or air shocks to strengthen suspension.
- Heavy-duty shock absorbers.

Towing “packages” are available through most automobile dealers and should be considered for towing heavy boats. A towing package includes such things as non-slip differential, heavy-duty cooling system, heavy-duty flasher, oversize battery and alternator, heavy-duty suspension, special wiring, special rear-axle ratio, and larger ties and wheels.

Storage

If the boat is stored outside, the drain plug should be removed and the trailer and boat tilted slightly to allow any accumulation of water to drain.

If a boat cover is used, it should be tailored for the boat. Water can “puddle” on an improperly fitted cover. The weight of puddled water can rip the cover or allow the cover to slip off, funneling the water inside the boat. A top drawstring can pull the cover high to prevent puddling. A bottom drawstring with tiedowns and weights placed along the bottom will keep the cover from whipping in the wind during towing. Tires may be covered during storage to eliminate sun damage but covers should be removed during wet weather to prevent damage from dampness.

BOATING SAFETY CLASSES explaining required and recommended equipment for small boats and offering training in good seamanship are conducted throughout California by the U.S. Coast Guard Auxiliary, the U.S. Power Squadrons and certain chapters of the American Red Cross. For information on Coast Guard Auxiliary and Power Squadron classes, call (800) SEA-SKIL (732-7545) or (800) 368-5647. The Division of Boating and Waterways offers a free home study course entitled *California Boating Safety Course*. For more information, e-mail us at pubinfo@dbw.ca.gov, or call tollfree at (888) 326-2822, or write: California State Parks, Division of Boating and Waterways, P.O. Box 942896, Sacramento, California 94296-0001. Visit our Website at www.dbw.ca.gov.