

SMALL CRAFT ISSUES

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Loading & Capacity Plates

The terms loading and capacity relate to the weight of people, fuel and gear that can be safely carried. The safe load of a boat in terms of people depends on a number of characteristics, including hull volume and dimension, the weight of the engine and, if an Outboard, how is it mounted? The number of seats in a boat is not an indication of the number of people it can safely carry.

The U.S. Coast Guard safety standard covering Display and Capacity information applies to manufacturers of monohull boats less than 20 feet in length, except sailboats, canoes, kayaks and inflatable's. Capacity plates can generally be found on the inside transom, or next to the helm station. Capacity plates should never be removed, altered, or tampered with. The standard became effective for applicable boats manufactured of monohull boats less than 20 feet in length, except sailboats, canoes, kayaks and inflatable's. The standard became effective for applicable boats manufactured after November 1, 1972. The standards originally required the following:

- Boats powered by outboards:
 1. The maximum person's capacity in pounds and maximum weight capacity (persons, motor and gear) in pounds and maximum horsepower capacity.
 2. Boats powered by inboards and stern drives: the maximum person's capacity in pounds and maximum weight capacity (persons and gear). (The Coast Guard Safe Powering Standard does not apply to inboards, stern drives, etc.)

- Manually propelled boats:
 1. The maximum person's capacity in pounds and maximum weight capacity (persons and gear). Also keep in mind the limits defined on capacity plates apply in good to moderate weather conditions.
 2. In rough waters, keep the weight well below the limit.
 3. People represent a "live" load; moving about affects a boat quite differently than static loads like the engine or fuel tank.
 4. If your boat's capacity is fully used, or if the weather becomes rough, distribute the load evenly; keep the weight low, and avoid abrupt changes in distribution. Shift human or other weight only after stopping or slowing.

Boarding

Stepping on board a small boat without hurting yourself or the boat is an important basic boating skill.

1. If you are boarding from a pier, step into the boat as close to the center as possible, keeping your body weight low. Keep lines tight or have someone steady the boat while you board.
2. If boarding from the beach, come in over the bow.
3. Never jump into a small boat or step on the gunwale.
4. If you must take a motor or any other gear aboard, place it on the edge of the pier where you can easily reach it from the center of the boat.
5. Better yet, after you have boarded the boat, have someone on the pier hand it to you.
6. If stepping into a light dinghy on a beach, don't forget that the unsupported sections of a boat out of the water are quite vulnerable.
7. By stepping in the boat when it is on the beach, a rock could be driven through the hull by your weight all on one foot.

Trailer

Trailer your boat is a great way to avoid slip fees and venture to new cruising grounds.

You'll also maintain a cleaner hull, and avoid giving pesky marine creatures a new home.

Equipment:

- The Tow Vehicle
 1. What type? In order to effectively and efficiently tow your boat, you need a vehicle that is capable of handling the boat and trailer, and all the extra gear that you will have on the boat.
 2. Because of current fuel and pollution efficiency standards, most modern cars do not make good tow vehicles because they lack the power, wheel base length, and weight to effectively pull a trailer.
 3. Pick-ups and Sport Utilities are generally better suited to handle the wear and tear that towing imposes on a vehicle.
 4. Vehicles equipped with tow packages may have features such as heavier shocks and suspension systems, heavy duty brakes, transmissions, cooling systems, and oil coolers.
- Trailer hitches
 1. Trailer hitches are attached to your tow vehicle in one of three ways; Bumper hitches simply attach to your bumper, though most vehicles today do not have the ability to do this. Bumper hitches can carry only the smallest of trailers, and are illegal in many states.
 2. The Weight Carrying hitch bolts to your vehicles' frame and bumper which helps distribute the weight. This is the most common hitch in use.

3. The Weight Distributing hitch is built into your vehicle frame by the manufacturer. This is the strongest trailer hitch available, and is also the safest.

- The Trailer

There are two basic types of trailers.

1. Skid Trailers - Used for small boats with flat or slightly rounded bottoms. This trailer has 2x4 carpeted boards, called skids, along which the boat slides as it is launched. This type of trailer is well suited for flat-bottomed boats.

2. Roller Trailers - so called because the boat sits on a bed of rollers instead of pads or rails.

This is the most widely used trailer, as it is very easy to get a boat on and off of one. This type of trailer is well suited for V-hulled boats or sailboats.

Trailers are classified based on their weight and the weight of their loads. If your boat and trailer are close to the maximum weight for that class, you should consider the next higher class of trailer. A good rule of thumb would be to go to the next size if your trailer and load hit 85% of the rated capacity. Overloaded trailers become hard to handle on the road, and may wear out more quickly.

THE RULE OF "G"

If you trailer your boat, there are three "G" phrases that you need to know:

- Gross Vehicle Weight (GVW) --The most weight your car is designed to carry. This weight includes all cargo, people and boat/trailer you may be towing. This information may be found in the vehicle owner's manual.
- Gross Axle Weight (GAW) --The maximum weight your vehicle axles are designed to carry. In other words, all weight supported by the axles, including the trailer tongue weight. This information may be found in the vehicle owner's manual.
- Gross trailer weight (GTW) --This is the weight of the trailer including the boat, and all the gear on the boat. This figure may be found on the trailer capacity plate.

The "rules" are

1. You should never violate any of these weight restrictions; doing so could place your vehicle, your boat, and your life in jeopardy.
2. You should also have a good idea of what the "tongue weight" of your trailer is.
3. Tongue weight is the weight of the fully loaded boat on the trailers' hitch, or tongue.
4. The ideal tongue weight should be no more (and no less) than 5 to 10 percent of the Gross Trailer Weight.
5. Having too much weight on the tongue can overly fatigue your tow vehicle, and make handling difficult. Having too little weight on the tongue can make the trailer fishtail as you are driving, and pull up on the rear bumper.

6. To determine tongue weight, a heavy duty bathroom scale under the jack wheel (for boat under 3,000 to 4,000 pounds) will work fine. For heavier boats, a commercial truck scale is your best bet.

To adjust tongue weight, most trailers are made so that you may move the axle's forwards or backwards--thus shifting the weight balance.

Class Gross Weight of Trailer and Load

1. Class 1 Not to Exceed 2000 lbs.
2. Class 2 2001 lbs. through 3500 lbs.
3. Class 3 3501 lbs. through 5000 lbs.
4. Class 4 Over 5000 lbs.

Trailers, like the boats they carry, must have a capacity plate attached. This plate will tell you what the Gross Vehicle Weight Rating and the recommended tire is for that particular trailer and load.

Single vs. Tandem-Axle

Boat owners who have traded up to tandem-axle trailers almost always report that they are pleased with the results, especially with larger boats. For one thing, tandem trailers handle better, with better tracking and less tendency to fishtail. The extra wheels also mean a much smoother ride and safer handling in the event of a blowout. The size of the tires (larger is better) contributes to the smoothness of the ride. It is also easier to find replacements for larger tires, though you should never use automobile tires on a trailer.

Painted trailers vs. Galvanized trailers

Many manufacturers offer a choice of galvanized steel or painted steel trailers. The painted trailers are fine for freshwater, but are vulnerable to corrosion in salt water. Galvanized trailers cost slightly more, but require less maintenance, especially if they will be dunked in salt water. Galvanized trailers offer the most durability in the salt water environment.

Related equipment

1. Spare tires - you probably wouldn't go anywhere with out a spare tire for your car would you? Trailer tires are often much harder to purchase from tire stores, and it is often much harder to get service for a stranded trailer. Carrying a spare tire will almost always save you trouble if you get a flat.
2. Brake Lights - some states require these if the trailer and boat obscure your car's lights.
3. They're relatively inexpensive, and should be considered, even if not required, especially if you're towing after dark. Lights commonly required include sidelights, taillights, stop lights and turn signals.
4. Safety Chains - Safety chains connect the tongue of the trailer to the towing hitch. If your coupler fails, the chains will prevent the trailer from falling forward and potentially cart wheeling over your car. They are required in most states, and should ALWAYS be used.
5. The chains should be crossed under the hitch to form a cradle.
6. Mirrors - some states require extended outside mirrors if your view is obscured by

- the boat and/or trailer. If they are not required in your state, consider getting them anyway.
7. Legal Considerations
 8. Most states require a license for a trailer, and may have equipment requirements for lights and mirrors. Check with your state motor vehicle authority.
 9. In most states, the maximum trailer width allowed on roads is 8 feet. A special permit is necessary for wider trailers. On federally supported and interstate highways with 12 foot lanes, you're allowed 8.5 feet.

Making the Connection

Hitching your trailer to the back of your vehicle isn't hard, but requires attention to detail. With practice, it can become second nature. There are also devices available that help line up your tow vehicle with the trailer.

Balancing the Load

Once you've determined that your vehicle is capable of pulling the weight of your boat and trailer, make sure the weight load is balanced. Between 5 to 7 percent of the total weight of the tow, including boat, motor, contents and trailer, should rest on the tongue. With more weight, the front of your car will lift up, and with less, the trailer may fishtail. If you've never handled a trailer before, find an empty parking lot and practice. Pay special attention to turning, backing, and parking. You may have limited room to maneuver at your launch ramp so it's wise to be prepared. See how the trailer reacts to braking or turning to get a handle on how your rig will act on the road. Finding out the handling characteristics before you hit the highway will help make your driving a much more comfortable thing to do.

Launching

If the ramp is crowded, and it usually is on weekends, don't despair; use the extra time to prepare your boat and trailer before it is your turn to launch. Make sure the lower unit/outboard is raised to avoid scraping; install the drain plug; release the securing straps; disconnect the trailer's lights; and rig a line so the boat doesn't drift away after it is launched.

If you are stepping a mast, make sure there are no overhead power lines between you and the ramp. If you don't have bearing protectors, make sure hubs are cool.

Next, you'll have to back the trailer onto the launch ramp. To a novice, backing a trailer can be like standing on your head and reading a book upside down in a mirror. It takes practice!

Learning can be rough on the blood pressure--yours and that of the other people at the ramp waiting to launch their own boats.

To avoid disagreeable encounters with your fellow boaters, practice backing the trailer in the quiet safety of your driveway or, better yet, an empty parking lot.

Keep a tire stop handy, leave the car's engine running in case you need power quickly, and don't forget your parking brake!

Tips:

1. Push the bottom of the car's steering wheel in the direction you want the trailer to go.
2. Tie-down straps off
3. Drain plugs in
4. Gear stowed properly
5. Line to tie boat to dock
 - On the ramp, launch carefully and then move the boat to a nearby outfitting dock if available while the car and trailer clear the ramp.
 - Load and leave the dock as quickly as you can to make room for the next boat. Include a safety brief for your passengers before leaving, covering the following subjects:
 1. Importance of PFDs or other floatation aids
 2. Crew overboard procedures to be followed
 3. Necessity to keep the boat in trim by distribution of passengers
 4. Protection from the sun for eyes and skin
 5. Location of fire extinguishers
 6. Flares and other emergency equipment
 7. How to call for help in case skipper is overboard or incapacitated
 8. Recovery

Congratulations on a successful trailering and launching. Now it's time to get the boat out of the water and head for home.

At outfitting dock:

1. Unload passengers and gear.
2. Get in line for recovery. Have one member of crew remain with boat while another fetches trailer and towing vehicle.
3. Minimize time on ramp. Pull clear of other recovery vehicles to drain and clean the boat.
4. Prepare the boat for the road.

On the Road

1. Remember that you have a long, heavy and awkward tail end. Drive carefully, periodically checking the trailer in the rear view mirror and listening for any unusual sounds.
2. Give yourself room to maneuver around corners and curbs. And, make sure to give yourself more stopping time and room.

Care and maintenance

1. Trailers, especially those used in a salt-water environment, need proper maintenance to ensure peak performance.
2. Clean your trailer - Cleaning your trailer includes washing the wheels, frame, and

- electrical assembly. This will help decrease the effects of salt water, and will help cut down the spread of zebra mussels and other nuisance plants and organisms.
3. Hub maintenance - Trailer hubs need to be cleaned and greased regularly, especially if your trailer is used in a salt water environment. When you use your trailer, the hubs heat up and expand, which can let water into the hubs when you launch. This can corrode the hub, and force out grease. To prevent this, take some time before you launch to allow the hubs to cool down. Using Bearing Buddies will also help prevent damage to your hubs. Also, carry a spare bearing set in case of an emergency.
 4. Wheel maintenance - Making sure your tires are properly inflated and have adequate tread will make your drive safer, and save you money on gas. Trailers that sit for extended periods should have their tires covered -or better yet, removed--to prevent UV damage and dry rot.