BOAT NEBRASKA

A COURSE ON RESPONSIBLE BOATING

Sponsored by

Nebraska Game and Parks Commission

Contents are approved by the National Association of State Boating Law Administrators and recognized by the U.S. Coast Guard.

Nebrask boating regulations require children under 13 to wear a life jacket while on board any vessel.

Distributed by Boat Ed, 10031 Monroe Dr. STE 305, Dallas, TX 75229, tel: (214) 351-0461.

How To Use This Manual

1. Review each chapter of this manual and, if available, the BOAT AMERICA video. Complete that chapter's exercise on pages 54-56.
2. Check your answers for the exercise on page 57.
3. Review the information you may have answered incorrectly.
4. Continue in this manner until all chapters have been covered.
5. Upon successful completion of the Certification Exam, you will receive your boater safety certification card.

What's Included in This Course

This guide includes a wide variety of information. Some of it is:

- General information concerning boats and maintenance
- Information to make your boating experience safer and more comfortable
- Tips on how to be a more courteous boat operator
- Laws and regulations to which you must adhere

In general this information applies to all watercraft (powerboats, personal watercraft, and manually-driven boats such as sailboats, canoes, etc.) However, in some places information may apply *specifically* to personal watercraft. This information will be signified by the icon below.

Information for personal watercraft (PWCs) and those operating PWCs

Where to Find Additional Information

This guide is designed to be an introductory course to meet the boater education needs of recreational boaters who operate personal watercraft (PWCs) and powerboats under 26 feet in length. We encourage you to continue to learn more about boating safety.

- For more advanced information, the following publications may be useful:
  - U.S. Coast Guard's *Navigation Rules*
  - Chapman Piloting: Seamanship and Boat Handling by Elbert S. Maloney
  - The Annapolis Book of Seamanship by Mark Smith and John Rousmaniere.
- For additional courses, contact the following organizations:
  - U.S. Coast Guard Auxiliary
  - U.S. Power Squadrons
  - American Sailing Association
  - U.S. Sailing Association
  - American Red Cross

Stay up to date on new boating laws!

Be sure to stay abreast of new boating laws and requirements.
For state boating law information, contact the Nebraska Game and Parks Commission:

- *Call 1-402-471-0641*
- *Visit www.outdoornebraska.org/boating*

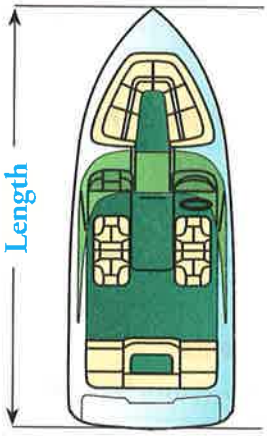
For federal boating laws, call the U.S. Coast Guard's Boating Safety Infoline:

- *1-800-368-5647*

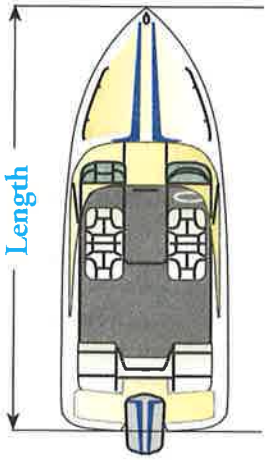
Information in this manual does not replace what is specifically legal for boating in Nebraska, which is found in Nebraska Statutes and Regulations and federal law.

Chapter 1: Know Your Boat

Inboards



Outboards



bow

Front of a vessel

stern

Back of a vessel

hull

Body of a vessel

Length Classes of Vessels

Vessels are divided into classes by length. A vessel's length class dictates the equipment necessary to comply with federal and state laws. Length is measured from the tip of the **bow** in a straight line to the **stern** of the vessel. Bow sprits, rudders, outboard motors and motor brackets, handles, and other fittings, attachments, and extensions are not included in the measurement.

Length Classes

Less than 16 feet . . . . . (also known as Class A)
16 feet to less than 26 feet. . . . . (also known as Class 1)
26 feet to less than 40 feet. . . . . (also known as Class 2)
40 feet to less than 65 feet. . . . . (also known as Class 3)

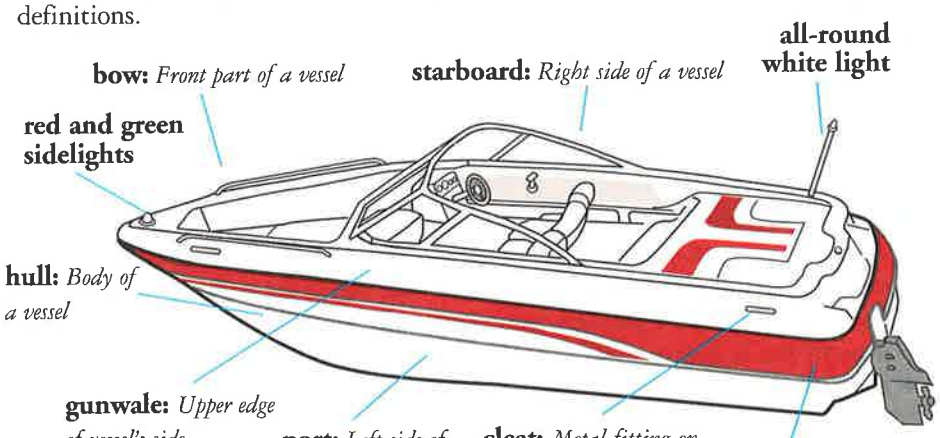
Hull Types of Vessels

Vessel **hulls** are either displacement or planing type hulls. Vessels with displacement hulls are designed to cut through the water with a minimum of propulsion. Vessels with planing hulls are designed to rise up and glide on top of the water when enough power is supplied. Most sailboats and large cruisers have displacement hulls to allow them to travel more smoothly through the water. Most small power-driven vessels, including personal watercraft (PWCs) and some small sailboats, have planing hulls allowing them to skim (plane) and travel more rapidly across the water.

Hull Shapes	Advantages	Disadvantages
Flat Bottom Hull 	This planing hull has a shallow draft, which is good for fishing in small lakes and rivers.	Rides roughly in choppy waters.
Deep Vee Hull 	This planing hull gives a smoother ride than a flat bottom hull in rough water.	Takes more power to move at the same speed as flat bottom hulls. May roll or bank in sharp turns.
Round Bottom Hull 	This typical displacement hull moves easily through the water even at slow speeds.	Has a tendency to roll unless it has a deep keel or stabilizers.
Multi-Hull 	Another example of a displacement hull, the multi-hull has greater stability because of its wide beam.	Needs a large area when turning.

The Many Parts of a Vessel

Vessels come in many styles and shapes, but the names of the different parts remain fairly consistent. Every vessel operator should know the following terms and definitions.



Types of Engines

Outboards

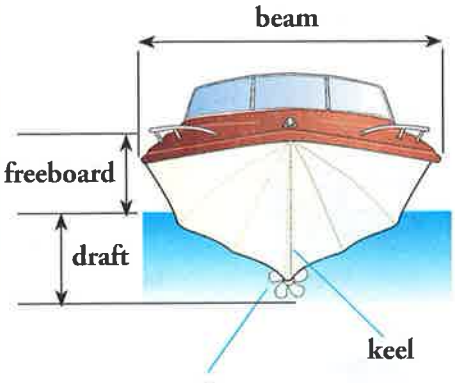
- An outboard is a complete power unit, including an engine, gear case and **propeller,** mounted on the **transom** of the vessel.
- Outboards range in size from under one horsepower (hp) to more than 300 hp.
- Outboards have a higher horsepower-to-weight ratio than other engine types.
- Most outboards have separate fuel tanks that are either portable or built into the vessel, although smaller motors have self-contained fuel tanks.
- Almost all outboards are internal combustion engines. A growing number of outboard engines are of four-stroke design, but most are still two-stroke engines, which require oil to be mixed with the fuel to lubricate the engine.
- Electric trolling motors are also considered to be outboard motors.
- Steering of outboard vessels is controlled by a **tiller** or steering wheel that swivels the entire engine to direct propeller thrust.

Inboards

- Motors are mounted inside the hull's midsection or in front of the transom.
- An inboard on a vessel is a four-stroke automotive engine adapted for marine use. The engine turns a drive shaft that runs through the bottom of the hull and is attached to a propeller at the other end.
- Most personal watercraft (PWCs) have two-stroke inboard engines that require oil to be mixed with the fuel to properly lubricate the engine.
- Steering of most inboard vessels, except PWCs and jet drive boats, is controlled by a **rudder** behind the propeller.

Stern Drives

- Stern drives are also known as inboard/outboards (I/O) because they combine features found on both inboard and outboard engines.
- Stern drive motors are mounted inside the vessel and attached through the transom to a drive unit that resembles the lower section of an outboard.
- Stern drives are four-stroke automotive engines adapted for marine use. The engine turns a drive shaft that runs through the transom and is attached to a propeller at the other end.
- Steering is controlled by a drive unit that swivels like an outboard.



propeller: *Rotates and powers a vessel forward or backwards*

transom

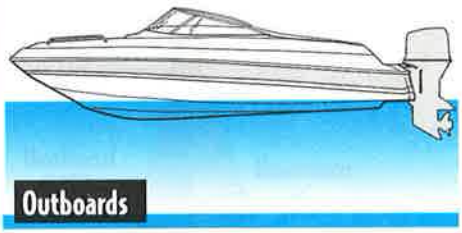
Vertical surface at the back of the hull

tiller

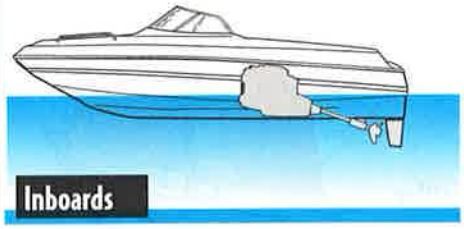
Bar or handle for turning a vessel's rudder or outboard motor

rudder

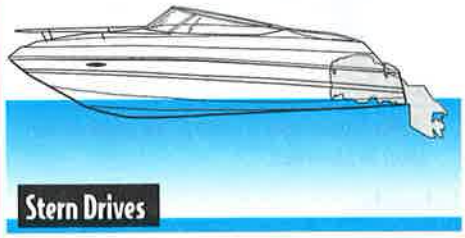
Steering device, usually a vertical blade attached to a post at, or near, the stern of the vessel



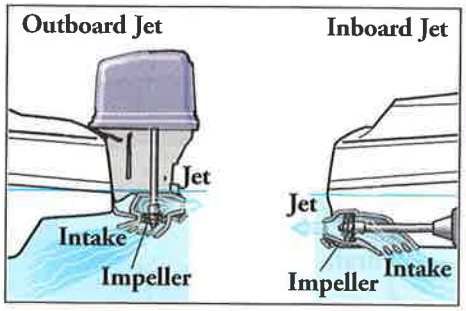
... have more power per pound of weight than do inboard engines.

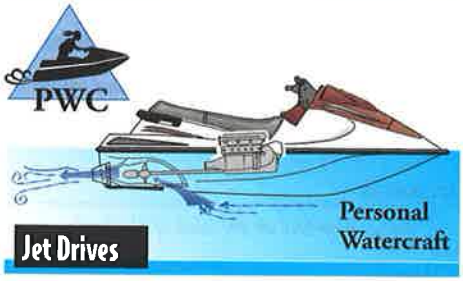


... have automotive engines adapted to operate in marine environments.



... have quieter and more fuel-efficient engines.

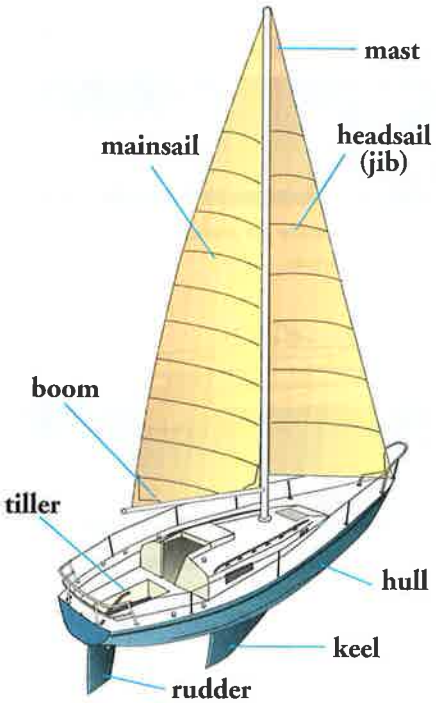




... use an engine to power a strong water pump, which sucks up water and forces the water out the back to thrust the vessel forward.

impeller

Device used to force water in a desired direction under pressure



sheets

Lines (ropes) used to control the angle of the sails to the wind

halyards

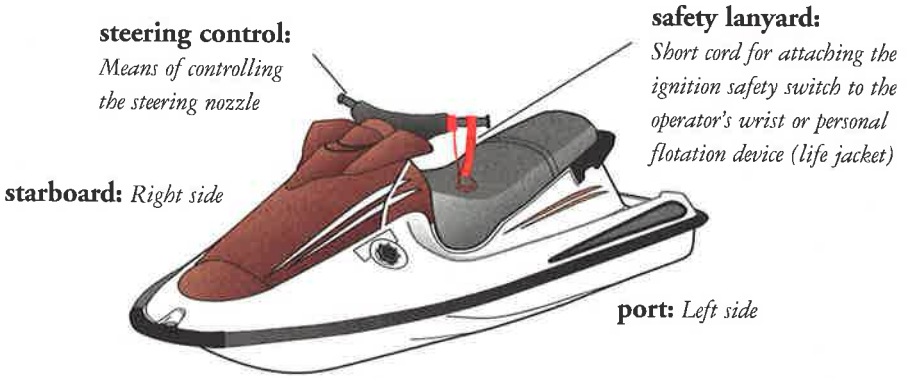
Lines (ropes) used to raise and lower sails

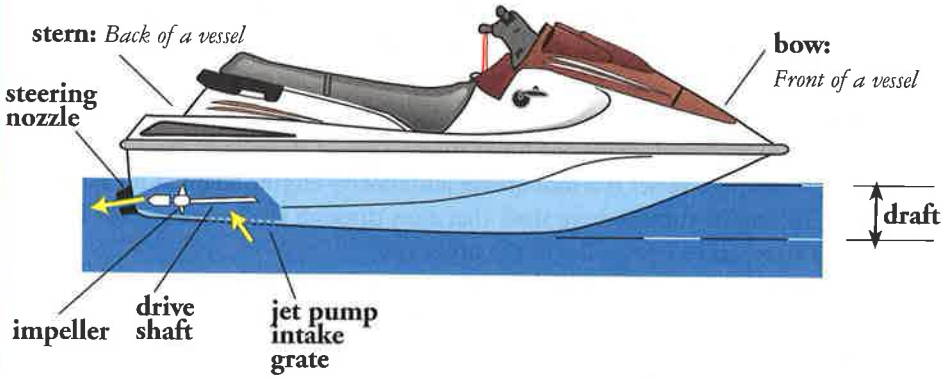
Jet Drives

- Jet drives propel a vessel by a jet of water forced out of the back of the vessel. Directing this jet of water steers the vessel.
- Personal watercraft are the most common type of vessels that use a jet drive.
- Jet drives may also power larger vessels (jet boats) and are used commonly for vessels designed for shallow water conditions. Jet boats can have inboard or outboard jet drives.

Personal Watercraft

- A PWC is a small vessel that uses an inboard jet drive as its primary source of propulsion, and is designed to be operated by a person or persons sitting, standing, or kneeling on the vessel rather than inside the vessel. The U.S. Coast Guard includes personal watercraft in the group of inboard vessels less than 16 feet in length.
- *PWCs are subject to all of the same laws and requirements of any other vessel plus a few laws specific to PWCs.* See Chapter 4 for the legal requirements for PWCs.





Sailboats

Use of the wind is one of the oldest forms of powering a vessel. Sailboats range in size and complexity, but all have basically the same four components:

- The hull carries the passengers and supports the rigging.
- The rigging includes many parts of the sailboat, such as the lines (**sheets** and **halyards**), mainsail, headsail (jib), boom and mast.
- The keel or centerboard is attached to the bottom of the hull and keeps the vessel from sliding sideways through the water.
- The rudder is used to steer the sailboat, turned by a tiller or steering wheel.

Chapter 2: Before You Get Underway

Your Vessel's Capacity

A vessel operator should never take a vessel on the water with too many people or too much gear on board. Vessels loaded beyond their capacity will more easily **swamp** or **capsize** and will be more difficult to control.

- Look for a capacity plate near the operator's position or on the transom of the vessel. This plate indicates the maximum weight capacity and/or the maximum number of people that the vessel can safely carry in good weather.
  - You should not exceed *either* the stated maximum weight capacity or the maximum number of people.
  - Maximum weight is the combined weight of passengers, gear and motors.
  - In many states it is a violation to exceed capacity (see page 27).
- Federal law requires that single-hull vessels have a capacity plate if less than 20 feet in length. (However, PWC and sailboat manufacturers are not required to attach a capacity plate.) Always follow the recommended capacity found in the owner's manual and on the manufacturer's warning decal. Never exceed these capacity recommendations.
- On vessels with no capacity plate, use the following rule of thumb to calculate the number of persons (weighing 150 lbs. each, on average) the vessel can safely carry in good weather conditions:

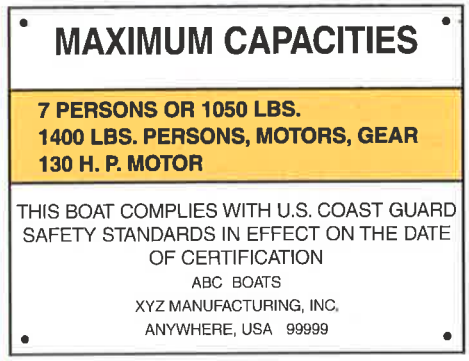
  Number of people = vessel length (ft.) x vessel width (ft.) ÷ 15.

  For example, for a vessel 18 feet long by 6 feet wide, the number of persons is 18 times 6 (or 108) divided by 15, which equals seven 150 lbs. persons (or a total person weight of 7 x 150, or 1050 lbs.).
- Note: On outboard powerboats, the capacity plate will also display the recommended maximum horsepower rating of the boat. Your boat's motor should never exceed this rating.

File a "Float Plan"

Before going out on a vessel, it is always a good idea to tell someone where you are going and ask them to take action if you fail to return on time.

- For shorter daytime outings on the water, at a minimum you should:
  - Contact a responsible person before you go out and tell him or her where you will be boating and when you plan to return.
  - Give your contact the phone number for local authorities in case you fail to return when expected.
  - Contact this person again when you return or if you decide to extend your time out on the water.
- For extended outings on the water, leave a float plan with a relative or friend, or at least a local marina. You should leave a float plan that:
  - Describes the vessel, its number, size, make, horsepower and engine type.
  - States where you are going, the detailed route and your expected return time. Include location of all stopping points, dates and times.
  - Gives the phone number for local authorities in case you fail to return when expected. If boating on waters under U.S. Coast Guard jurisdiction, give the phone number of the U.S. Coast Guard.
  - Gives the number of passengers, their names, addresses and a contact in case of emergency.
  - Includes the description and license plate of the tow vehicle and trailer.



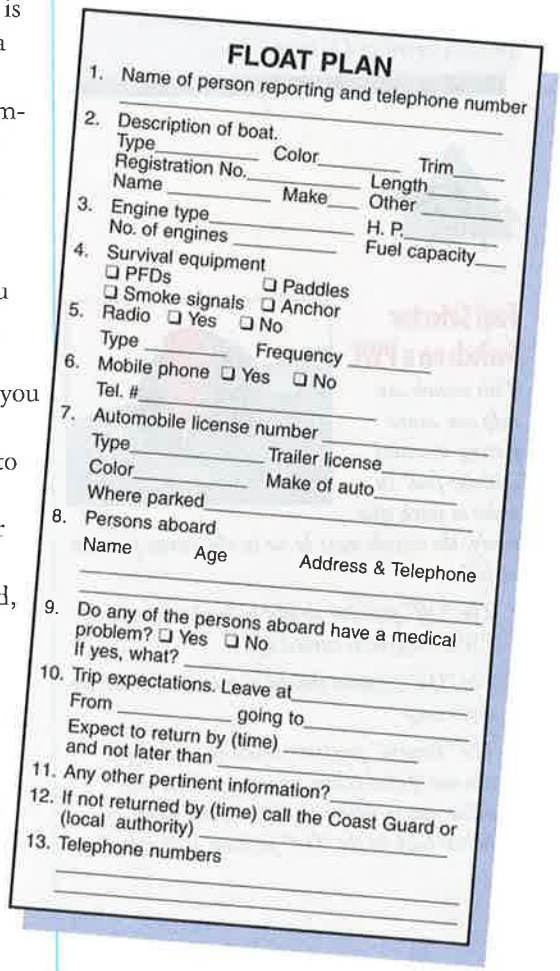
Maximum Capacity Plate

swamp

To fill with water

capsize

To turn on the side or turn completely over



FLOAT PLAN

1. Name of person reporting and telephone number
2. Description of boat.
   Type ____ Color ____ Trim ____
   Registration No. ____ Length ____
   Name ____ Make ____ Other ____
3. Engine type ____ H. P. ____
   No. of engines ____ Fuel capacity ____
4. Survival equipment
   ❑ PFDs ❑ Paddles
   ❑ Smoke signals ❑ Anchor
5. Radio ❑ Yes ❑ No
   Type ____ Frequency ____
6. Mobile phone ❑ Yes ❑ No
   Tel. # ____
7. Automobile license number ____
   Type ____ Trailer license ____
   Color ____ Make of auto ____
   Where parked ____
8. Persons aboard
   Name Age Address & Telephone
9. Do any of the persons aboard have a medical problem? ❑ Yes ❑ No
   If yes, what? ____
10. Trip expectations. Leave at ____
    From ____ going to ____
    Expect to return by (time) ____
    and not later than ____
11. Any other pertinent information? ____
12. If not returned by (time) call the Coast Guard or (local authority) ____
13. Telephone numbers

BOATER'S TIP!

Make sure you have enough fuel before casting off. Operating at two-thirds throttle instead of full throttle will conserve fuel. The following rule will help prevent running out of fuel:

- *one-third to get out*
- *one-third to get back*
- *one-third reserve for emergencies*

bilge

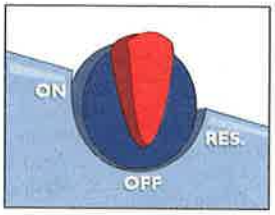
Interior of the hull below the floorboards

Remember...

Evaporating gasoline creates vapors or fumes that are heavier than air. These fumes settle to the bottom of the vessel where they could explode if enclosed areas, such as the bilge, are not properly ventilated to remove fumes.

PWC

Fuel Selector Switch on a PWC



This switch can help you avoid getting stranded without fuel. In order to work effectively, the switch must be set in the correct position as follows:

- *The "Off" position should be used when the PWC's engine is turned off.*
- *The "On" position should be used while you are underway.*
- *The "Reserve" position should be used if you run out of fuel while underway. This will allow you to return to shore. Don't forget to switch back to the "On" position after refueling.*

Fuel Your Vessel...Safely

Serious accidents can occur when fueling. Follow these safety procedures:

- Never smoke or strike a match while fueling or when near a fueling dock.
- Try to fuel in daylight. If light is needed, use a flashlight or spark-proof light.
- Check fuel lines for leaks and replace any cracked hoses before each fueling.
- Tighten fuel line connections frequently. Engine vibration can loosen them.
- Before and during fueling:
  - Turn off all engines and electrical equipment.
  - Shut off all fuel valves.
  - Extinguish all fires.
  - Close all windows, doors and openings to prevent fumes from entering the vessel.
- Before filling a tank or gas can, follow these guidelines:
  - Always remove portable tanks from the vessel. Use caution to prevent spills.
  - Maintain solid contact between the fuel intake pipe or tank and the spout. This prevents build up of static electricity, which could produce a spark.
  - Never fill a tank to the brim. Leave room for gas to expand.
- After fueling, follow these guidelines:
  - Open all windows and hatches.
  - If your vessel is equipped with a power ventilation system (exhaust blower), turn it on for at least four minutes after fueling, before starting your engine. This will help eliminate fuel vapors in the **bilge**.
  - Put the fill cap on tightly to prevent vapors from escaping.
  - Immediately wipe up any spilled gas. Let the rag air out after using it. Never throw the rag in the vessel or the water.
  - Store gas on board in a safety-approved storage tank, away from the engine in an area of good ventilation.
  - Before starting the engine, sniff the bilge and engine compartment for fuel vapors. Consider installing a gas vapor detection and alarm device.
- When fueling on or near the water, be careful not to spill fuel into the water. If practical, refuel away from the water or on a commercial fueling ramp. Don't top off the tank. Promptly mop up any fuel spills.

Fueling Issues for a PWC

Serious accidents can also occur when fueling a personal watercraft (PWC). Spilled or leaked fuel can ignite and explode, especially in an enclosed space. Here are some safety procedures PWC operators should follow:

- Check the entire fuel system for leaks.
- Check connections frequently. Engine vibrations and the pounding from operating on rough water can loosen connections.
- Avoid spills when fueling in or near the water.
- After fueling, open the door of the engine compartment and sniff to check for any evidence of gas fumes. Do this before starting the engine. If you do smell gas fumes, determine the source and make repairs immediately.
- Do not tip the PWC to fill it all the way up. The tank is designed to leave space for the fuel to expand. If the tank is overfilled, the fuel may expand and spill into the water.

Trailering Your Vessel

Have the Right Trailer for Your Vessel

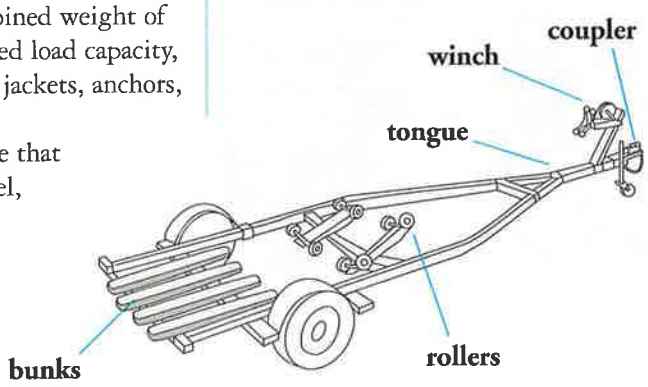
- The width and length of the vessel normally determine the dimensions of the trailer.
- Check out the trailer manufacturer's load capacity. If the combined weight of the vessel and its engine is more than 90% of the recommended load capacity, buy the next larger trailer. This is because your gear (fuel, life jackets, anchors, lines, etc.) will increase the overall weight by at least 10%.
- Check the owner's manual of your towing vehicle to make sure that your vehicle is rated to tow the combined weight of your vessel, motor and trailer.
- Most vessel trailers connect to a ball hitch on the towing vehicle. If you are using a vehicle bumper mounted hitch, do not exceed the weight rating of the bumper.
- Most importantly, the **coupler** size must match the size of the ball hitch. Never use a ball hitch that is too small. Make sure the size rating stamped on the ball matches the size stamped on the trailer's coupler and its gross trailer weight (GTW) rating.
- Tongue weight is the weight the loaded trailer places on the towing hitch. The tongue weight should be 7% - 10% of the combined weight of the vessel and trailer. Too much tongue weight will cause "tail dragging" of the towing vehicle. Too little tongue weight will cause the trailer to sway.
- Couplings may work loose and should be checked frequently. Trailers should be equipped with two safety chains that are strong enough to control the trailer if the hitch or coupling breaks.

Before Leaving Home

- All gear in the vessel should be secured firmly to keep it from shifting, and should be arranged so that the weight is evenly distributed in the vessel.
- Properly secure the vessel with several tie-down straps and/or safety lines to prevent it from shifting. Never trust the bow winch alone to hold your vessel.
- Inspect all lines, tie-downs and the winch. Tighten as necessary. Replace anything that show signs of wear. Use extra tie-down straps in case one fails.
- Tilt and secure the engine to increase road clearance. Use a bracket to support the weight of the outboard or drive unit. This will help prevent damage if you hit a large bump.
- Inspect the hitch and safety chains. Criss-cross the safety chains when attaching them to the towing vehicle to keep the trailer under control if it disconnects. The chains should have a breaking strength of no less than the combined weight of the vessel, motor and trailer.
- Grease the bearings in the hubs of the axles to prevent bearings from seizing.
- Make sure the trailer lights work properly. Check trailer brakes if you have them.
- Make sure you have a spare trailer tire and check the pressure of all tires.
- Tighten the lug bolts on the trailer wheels to the recommended torque.

bunks

Wooden supports on which the vessel rests while on the trailer



It is very important to have proper lighting on trailers, including turn signals, and tail and brake lights. Also make sure you have a jack that fits properly under the trailer—most car jacks are too large to fit under a trailer.

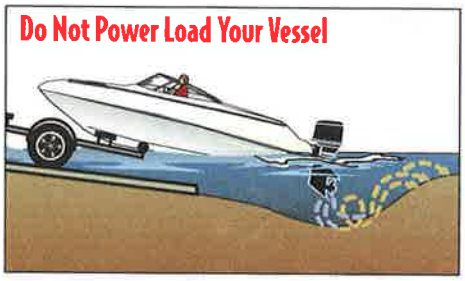
coupler

The part of the trailer that attaches to the ball hitch on a towing vehicle

Criss-cross the safety chains under the trailer tongue when attaching them to the towing vehicle.

Tighten lug nuts on trailer wheels before departing.

Novice boaters should practice towing, especially backing up, in an open field or empty parking lot before their initial launch and retrieval. This will give you a feel for the trailer and how it maneuvers in relation to the towing vehicle.



Propeller wash can erode the sediment just beyond the ramp surface, creating a large hole. The eroded sediment is deposited behind the propeller, creating a mound. Trailer tires can get stuck in these holes and vessels can run aground on the mound.

On the Road with a Trailer

- Steer wider on corners to clear curbs.
- Allow more time and greater distances for stopping.
- Remember the length added by your trailer when passing other vehicles.
- On long trips, pull over periodically to check the rigging, tires and bearings.

Launching Your Vessel from a Trailer

- *Prepare your vessel well away from the boat ramp* so you don't block ramp traffic.
  - Transfer all equipment and supplies to the vessel.
  - Disconnect trailer lights from the towing vehicle. To extend the life of the bulbs, allow them time to cool down before launching.
  - Remove all tie-downs except the winch line before backing down the ramp.
  - Make sure your vessel's drain plug is in place.
  - Tie a line to the bow to maintain control of the vessel while launching.
- Initially back the vessel into the water far enough so that the lower unit of the engine can be lowered and submerged with the vessel still on the trailer.
  - As an added precaution always set the parking brake on the towing vehicle.
  - Start the vessel's engine with the lower unit submerged. If your vessel is still on the trailer and you have engine trouble, you can easily retrieve the vessel.
- Once the engine is warmed up, back the trailer further into the water until the vessel floats. Undo the winch line, put the vessel engine in reverse and back slowly off the trailer.
- When launching (and retrieving) a sailboat with a raised mast, watch for overhead wires.

Retrieving Your Vessel

- Back the trailer into the water so that approximately two-thirds of the rollers or bunks are submerged in the water. Set the parking brake of the towing vehicle and put it in park (or first gear if you have a manual transmission).
- Drive the vessel onto the trailer far enough to attach the winch line to the bow eye of the vessel. Finish pulling the vessel onto the trailer by cranking the winch. Stay out of the way of the direct line of the winch cable in case it snaps or you lose control of the winch. Do not load a vessel using engine power because this can cause damage (see diagram on left).
- Shut off the engine and raise the outboard or stern drive.
- Tow the vessel out of the water and off the ramp well out of the way of others.
- While still at the landing, remove and dispose of all weeds from the vessel and trailer; remove the drain plug to release bilge water, and drain any live wells. This will help prevent the spread of aquatic nuisance plants and animals.
- Secure items inside the vessel.
- Reattach tie-downs and plug in the trailer lights. Check to see that the trailer lights are working before departing.

Courtesy on the Boat Ramp

Boat ramp traffic jams can be prevented if everyone practices common courtesy at the ramp! Be sure you observe these simple courtesies:

- Prepare your vessel for launching well away from the ramp.
- Use at least two experienced people to launch and retrieve the vessel—one to drive the towing vehicle and one to operate the vessel.
- Never block a ramp with an unattended vessel or vehicle. The vessel operator should move the vessel away from the launch lane immediately after removing it from the trailer. Return briefly to pick up the vehicle driver once he or she has parked and is at the ramp.
- When retrieving, do not pull your vessel into a launch lane until the towing vehicle is at the ramp. The line is formed by vehicles with trailers, not by vessels in the water. Drop off the vehicle driver and wait off shore and clear of the ramp until he or she arrives with the trailer.
- After retrieving your vessel from the water, pull it out well away from the ramp before preparing the vessel for the drive home.

Vessel Maintenance

Keeping your vessel well maintained will extend its life and give you and your family many more years of enjoyment.

- Examine the interior and exterior of the hull when it is out of the water.
  - Oxidation, a common problem on aluminum hulls, appears as white powder spots. Use fine sandpaper on oxidized areas until spots are replaced by bright shiny metal.
  - Use environmentally-safe detergents to remove oil and algae from fiberglass hulls. Avoid abrasive materials, which can remove the shiny top layer (gel coat). Patch holes immediately with a fiberglass patching compound.
  - Check through-hull fittings to make sure they are not cracked or leaking.
  - Remove all puddles from the interior before and after every outing.
- Hang canoes upside down.
- Store vessels in a dry area out of the sun. If you must store the vessel for a long period of time, place the trailer on blocks to preserve the tires. Keep it covered, leaving an opening to circulate air.
- Clean lines and ropes. Keep them out of the sun when not in use. Replace old lines. Dirt and sand cause deterioration.
- Clean sails with a soft brush. Examine them for small tears or open seams that can be repaired by taping or sewing.
- Refer to the owner's manual for a maintenance schedule.

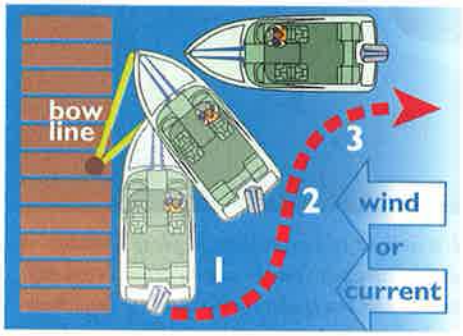
Use at least two experienced people to launch and retrieve your vessel—one to drive the towing vehicle and one to operate the vessel. If launching and retrieving by yourself, it is recommended to use wheel chocks to place behind the wheels of the towing vehicle.

Engine Maintenance

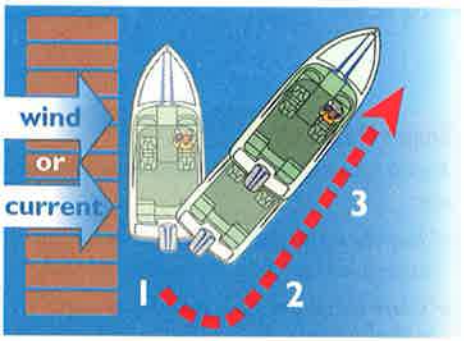
Engine maintenance is important. Here are some tips:

- ✔ *Keep the engine well-tuned. Refer to the owner's manual for a maintenance schedule.*
- ✔ *Check the oil and fluid levels before every outing.*
- ✔ *Change the oil according to the owner's manual. As the engine ages, increase the frequency of oil changes. Clean oil extends engine life.*
- ✔ *Make sure battery connections are tight, clean and free of corrosion.*
- ✔ *If the battery is weak when you start the engine, recharge it.*
- ✔ *Keep the exterior of the engine clean. Grease and oil buildup absorbs moisture and conducts electricity.*
- ✔ *Check the engine for anything that requires tightening, repairing or replacing: hoses, nuts, bolts, belts, screws, and anything else. Make sure everything is properly fitted, including the engine cover.*
- ✔ *Never use automotive electrical parts. Use marine parts only. Use of automotive parts rather than sealed marine parts (such as alternators, starters, fuel pumps and other electrical parts) could cause a spark that could ignite a fire.*

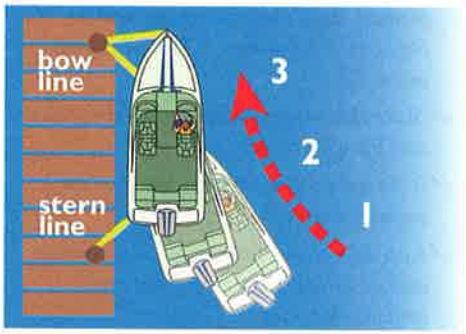
Chapter 3: Operating Your Boat...Safely



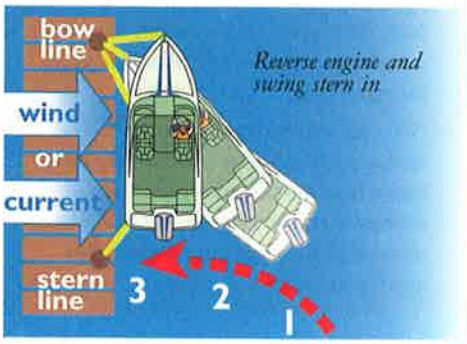
Casting Off *Wind holding vessel to dock*



Casting Off *Wind pushing vessel from dock*



Docking *No wind or current*



Docking *Wind pushing vessel from dock*

fenders

Cushioning device placed between vessels or between a vessel and a dock to prevent damage

Before Casting Off

- Keep mooring lines secured to the dock while starting the engine. Always start in neutral. If you have a pull starter, remain seated when starting.
- Once the engine is running smoothly, make sure the departure area is clear before casting off. On your first cruise, it's a good idea to take along an experienced vessel operator.

Casting Off

- If the wind or current is holding the vessel to the dock:
  1) Cast off the stern line. Make sure **fenders** are in place. Move and secure the bow line to a mid-vessel position on the dock.
  2) Put the vessel into forward gear briefly and slowly steer the bow into the dock (turning the steering wheel or tiller as far as possible). Increase the speed slowly if needed to move the stern away from the dock.
  3) After the stern swings away, cast off the bow line, and back away.
- If the wind or current is pushing the vessel away from the dock:
  1) Cast off all lines.
  2) Push the vessel away from the dock, making sure that there is sufficient clearance. The stern must be free to move in order to turn the vessel.
  3) Shift to forward and slowly leave the area.

Docking

Since vessels do not have brakes, move slowly. When idling, bring the vessel to a stop by using the reverse gear. Never try to stop a moving vessel with your arms or legs. Follow these steps to dock your vessel:

- Determine the wind and/or current direction. If possible, make your approach into the wind or current. This will give you more control.
- If you must approach with the wind or the current:
  1) Move as slowly as possible while still retaining control.
  2) Be ready to use reverse to stop and maintain your position.
  3) Secure the stern line first and then the bow line.
- With boat fenders and lines in place, slowly ease the vessel to the landing.
- If there is no wind or current:
  1) Approach the dock slowly at a narrow angle (10 to 20 degrees).
  2) When close enough, step ashore and secure the bow line.
  3) Swing the stern in with a line or hook, and secure it. Don't shut off the engine until the stern and bow lines are secure.
- If the wind or current is pushing you toward the dock:
  1) Approach parallel to the dock.
  2) Allow the wind or current to push you to the dock.
  3) Secure the bow and stern lines.
- If the wind or current is pushing you away from the dock:
  1) Point the bow toward the dock at a sharp angle (40 to 50 degrees). Approach the dock slowly and secure the bow line.
  2) Use reverse to slowly swing in the stern.
  3) Secure the stern line.

Navigation Rules ... Traffic Laws of the Waterways

Collisions can be easily prevented if every vessel operator fulfills these three major responsibilities:

1) Practice good seamanship.

It is the responsibility of every vessel operator to take all necessary action to avoid a collision, taking into account the weather, vessel traffic and limits of other vessels. Such action should be taken in ample time to avoid a collision and at a safe distance from other vessels.

2) Keep a proper lookout.

Failing to keep a sharp lookout is the most common cause of collisions. Every operator must keep a proper lookout, using both sight and hearing, at all times. Watch and listen for other vessels, radio communications, navigational hazards and others involved in water activities.

3) Maintain a safe speed.

Safe speed is the speed that ensures you will have ample time to avoid a collision and can stop within an appropriate distance. Safe speed will vary depending on conditions such as wind, water conditions, navigational hazards, visibility, surrounding vessel traffic and the maneuverability of your vessel. Always reduce speed and navigate with extreme caution at night and when visibility is restricted.

Encountering Other Vessels

There are rules that every operator must follow when encountering other vessels.

- Two terms help explain these rules:
  - **Give-way vessel:** The vessel that is required to take early and substantial action to keep well away from other vessels by stopping, slowing down or changing course. Avoid crossing in front of other vessels. Any change of course and/or speed should be large enough to be readily apparent to another vessel. (A series of small changes should be avoided.)
  - **Stand-on vessel:** The vessel that must maintain its course and speed unless it becomes apparent that the give-way vessel is not taking appropriate action. If you must take action, do not turn toward the give-way vessel or cross in front of it.
- The action a vessel operator should take when encountering another vessel depends on the answers to two questions:
  - How are the two vessels propelled?
    - Two power-driven vessels
    - Two sailing vessels
    - A power-driven vessel and a sailing vessel
  - How are the two vessels approaching one another?
    - Meeting head-on: a vessel operator sees another vessel ahead or nearly ahead
    - Paths that cross: two vessels are on crossing paths so as to involve risk of collision
    - Overtaking: a vessel is coming upon another vessel from behind or nearly behind the other vessel
- The rules that follow cover most of the situations you will encounter as a recreational boater. Some exceptions to these rules include:
  - If you approach a vessel that has less maneuverability than your vessel, the other vessel will usually be the stand-on vessel (see sidebar on page 12, "Responsibilities Between Vessels").
  - If you are operating in a narrow channel, there are special considerations (see sidebar on page 13, "Operating In Narrow Channels").

Additional Information

The navigation rules summarized here cover the most common situations for the recreational boater. Additional and more in-depth rules apply regarding various types of waterways and operation in relation to commercial vessels and other watercraft. It is the responsibility of an operator to know and follow all the navigation rules. For a complete listing of the navigation rules, refer to the U.S. Coast Guard publication, "Navigation Rules" that can be obtained by writing to: Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402
Or you can download the rules at: www.navcen.uscg.gov/mwv/navrules/navrules.htm. For state-specific navigation requirements, refer to the state laws where you intend to boat.

Navigation Rules: Definitions

For the purpose of the navigation rules, the following definitions apply:

- ***Vessel:*** *Every kind of watercraft capable of being used as a means of transportation on water, including seaplanes*
- ***Power-driven vessel:*** *Any vessel propelled by machinery, including a sailboat using an engine*
- ***Sailing vessel:*** *Any vessel under sail and with no engine in use*
- ***Vessel engaged in fishing:*** *Any vessel fishing with nets, lines, trawls, or other fishing equipment that restricts maneuverability; however, does not include a vessel fishing with trolling lines or other fishing equipment that do not restrict manageability*
- ***Underway:*** *Not anchored, tied to shore or aground*
- ***Vessels in sight of one another:*** *One vessel can be observed visually from the other*
- ***Restricted visibility:*** *Any condition in which visibility is restricted by fog, mist, falling snow, heavy rainstorms, sandstorms or any other similar causes*
- ***Risk of collision:*** *Any situation when an approaching vessel continues on a collision course (the bearing of the approaching vessel does not change), or when you are approaching a very large vessel*

Remember...

Every operator is responsible for avoiding a collision. In complying with the navigation rules, operators must consider all dangers of navigation, risk of collisions and any special conditions, including the limitations of the vessels involved. These considerations may make a departure from the navigation rules necessary to avoid immediate danger.

Responsibilities Between Vessels

If operating a power-driven vessel, you must give way to:

- *Any vessel not under command, such as an anchored or disabled vessel*
- *Any vessel restricted in its ability to maneuver, such as a vessel towing, laying cable or picking up navigation markers or a vessel constrained by its draft such as a large ship in a channel*
- *A vessel engaged in commercial fishing*
- *A sailing vessel unless it is overtaking*

If operating a sailing vessel, you must give way to:

- *Any vessel not under command*
- *Any vessel restricted in its ability to maneuver*
- *A vessel engaged in commercial fishing*

leeward

Direction toward which the wind is blowing, or downwind. Leeward vessel refers to the vessel that is downwind of the other.

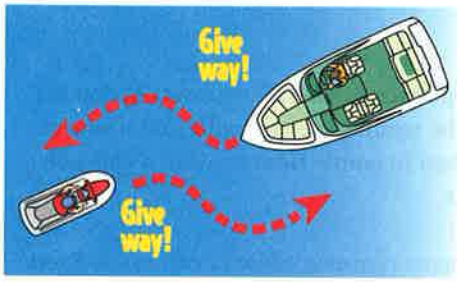
windward

Direction from which the wind is blowing, or upwind. Windward vessel refers to the vessel that is upwind of the other.

Rendering Assistance

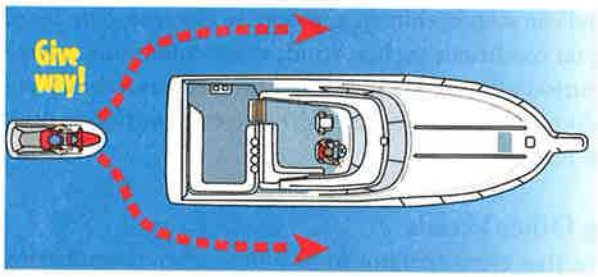
The navigation rules also require operators to stop and render assistance to a vessel in distress unless doing so would endanger their own vessel or passengers.

Power-Driven Vessel Encountering Power-Driven Vessel



Meeting Head-On
Neither vessel is the stand-on vessel. Both vessels should turn to starboard (the right).

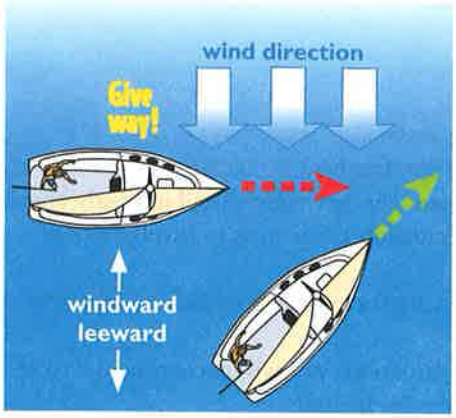
Paths That Cross
The vessel on the port (left) is the give-way vessel. The vessel on the starboard (right) is the stand-on vessel.



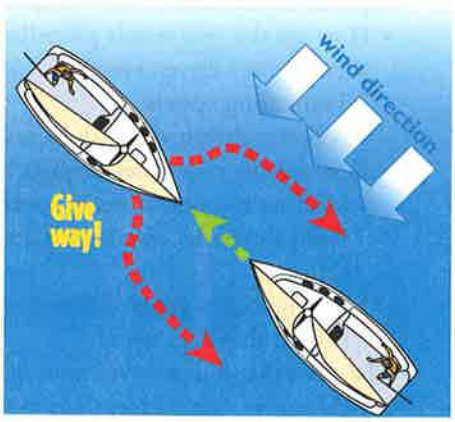
Overtaking
The vessel that is overtaking another vessel is the give-way vessel. The vessel being overtaken is the stand-on vessel.

Sailing Vessel Encountering Sailing Vessel

If a sailing vessel with the wind on its port (left) side cannot determine whether a windward sailing vessel has the wind on the left or the right, it should give way to the windward vessel.

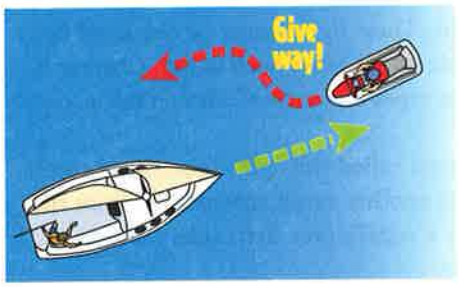


Wind On Same Side
When two sailing vessels are approaching one another with the wind on the same side, the leeward sailing vessel is the stand-on vessel.

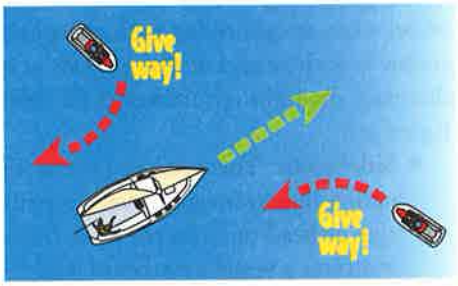


Wind On Different Sides
When two sailing vessels are approaching one another with the wind on different sides, the sailing vessel with the wind on its starboard (right) side is the stand-on vessel.

Power-Driven Vessel Encountering Sailing Vessel



Meeting Head-On
The power-driven vessel is the give-way vessel. The sailing vessel is the stand-on vessel.



Paths That Cross
The power-driven vessel is the give-way vessel. The sailing vessel is the stand-on vessel.

Overtaking
The vessel that is overtaking another vessel is the give-way vessel, regardless of whether it is a sailing vessel or a power-driven vessel. The vessel being overtaken is always the stand-on vessel.

Remember...

If operating a power-driven vessel, you must always give way to a sailing vessel unless the sailing vessel is overtaking your vessel.

Operating in Narrow Channels

- *A vessel in a narrow channel must keep as far to the edge of the channel on the vessel's starboard side as is safe and practical.*
- *If you are operating a power-driven vessel heading upstream (against the direction of the current) on the Mississippi River system, then all power-driven vessels coming toward you from the opposite direction have the right-of-way and you must give way.*
- *If operating a vessel less than 20 meters (65.6 ft.) in length, a sailing vessel or a vessel engaged in fishing, or a vessel crossing the channel, you may not get in the way of vessels that can only navigate within the channel (such as a large ship).*
- *You must not anchor in a narrow channel, unless the circumstances require anchoring.*
- *You must use the appropriate sound signals and use caution while operating in a narrow channel when:*
  - *Overtaking or being overtaken*
  - *When your view is obstructed such as when you approach a bend in the channel*
- *If you are leaving a dock, slip or tie-up mooring, you must give way to all approaching vessels.*

Operating During Restricted Visibility

All operators should navigate with extreme caution if visibility is restricted. The following applies to vessels not in sight of one another:

- *Every vessel must proceed at a safe speed given the conditions of restricted visibility. A power-driven vessel must have its engines ready to immediately maneuver.*
- *Unless a risk of collision does not exist, an operator who hears the fog signal of another vessel ahead, is in a close-quarters situation with another vessel ahead or detects the presence of another vessel by radar must reduce speed to the minimum at which the vessel can be kept on course. If necessary, the operator should reduce speed to idle speed.*

Precautions at Night

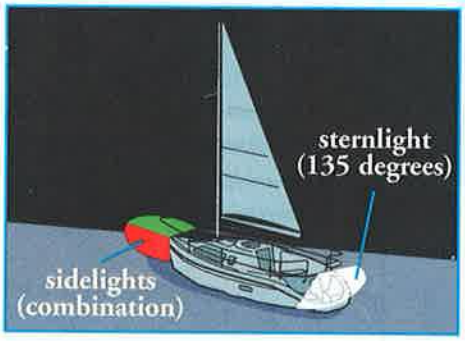
- ✔ *Make sure your navigation lights are working correctly and carry extra bulbs.*
- ✔ *Use an all-round white light whenever the vessel is at anchor.*
- ✔ *Reduce speed and proceed with caution. Never be in a hurry.*
- ✔ *Be especially alert for everything in front of you. Avoid traveling alone at night; extra eyes can help you navigate.*
- ✔ *Stop if visibility is severely restricted and use your sound signals to alert others in the area.*

Navigation Lights

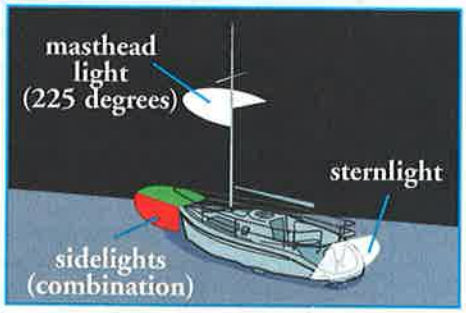
Navigation lights help you and other boaters determine which is the give-way vessel when encountering each other at night. These lights must be displayed from sunset to sunrise and during periods of restricted visibility such as fog. Chapter 4 discusses the light requirements for different types of vessels. Common navigation lights are:

- **Sidelights:** These red and green lights are called sidelights (also called combination lights) because they are visible to another vessel approaching from the side or head-on. The red light indicates a vessel's port (left) side; the green indicates a vessel's starboard (right) side.
- **Sternlight:** A white light seen only from behind or nearly behind the vessel.
- **Masthead Light:** A white light that shines forward and to both sides, required on all power-driven vessels. (On power-driven vessels less than 39.4 feet in length, the masthead light and sternlight may be combined into an all-round white light; power-driven vessels 39.4 feet in length or longer must have a separate masthead light.) A masthead light must be used by all vessels when under engine power. The absence of this light identifies a sailing vessel, because sailboats under sail display only sidelights and a sternlight.
- **All-Round White Light:** On power-driven vessels less than 39.4 feet in length, this light may be used to combine a masthead and sternlight into a single white light able to be seen by other vessels from any direction. This light serves as an anchor light when sidelights are extinguished.

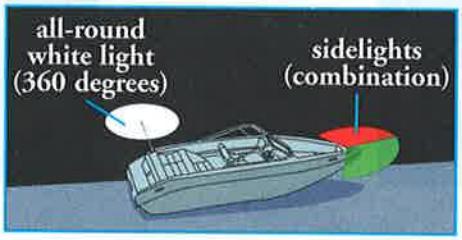
Typical Recreation Vessels' Navigation Lights



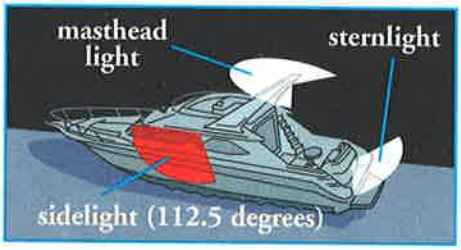
Navigation lights of a sailing vessel



Navigation lights of a sailboat ***under power***



Navigation lights of a power-driven vessel with an all-round white light and combination sidelights placed on the bow



Navigation lights of a power-driven vessel with masthead light, sternlight and separate sidelights

All-round white light indicating a vessel anchored away from the dock

Night Navigation

Night navigation presents additional challenges. You should always operate at a slower speed at night and be on sharp lookout for the lights of other vessels. Lights displayed by other vessels will help you determine whether they are operating under power or sail, and their direction of travel. Once you've determined this, you apply the same navigational rules used in the daytime. However, never assume that the lights of other vessels are working properly. Allow plenty of time and distance to give way if needed, even if the lights indicate you are the stand-on vessel.

Power-Driven Vessel Encountering Other Vessels at Night

When you see a white and a green light you are the stand-on vessel. You should remain alert in case the other vessel operator does not see you or does not know navigational rules.

When you see only a white light, you are overtaking another vessel or it is anchored. It is the stand-on vessel, whether underway or anchored. You may go around it on either side.

When you see a red and a white light, you must give way to the other vessel! Slow down and allow the vessel to pass or you may turn to the right and pass behind the other vessel.

When you see a red, a green and a white light you are approaching another power-driven vessel head-on and so both vessels must give way.

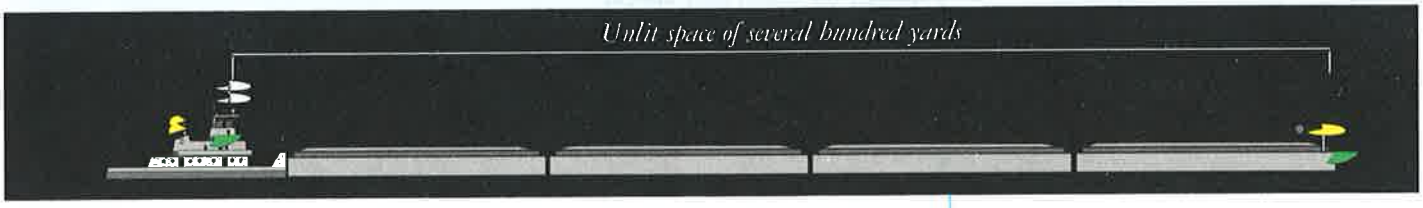
If you see only a red and a green light, you are approaching a sailing vessel head-on and you must give way.

Encountering Sailing Vessel at Night

When you see ***only a green or only a red light***, you may be approaching a sailing vessel and you must give way. A sailing vessel is always the stand-on vessel except when it is overtaking or in a narrow channel.

Towing Lights

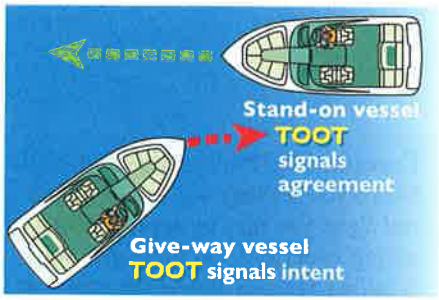
When commercial vessels are towing, they display one or more yellow lights in place of a sternlight. There may be an unlit space of several hundred yards between the lights displayed on the bow and stern of the vessel with its tow. Learn to recognize commercial vessel lights if boating on rivers, harbors or coastal waters.



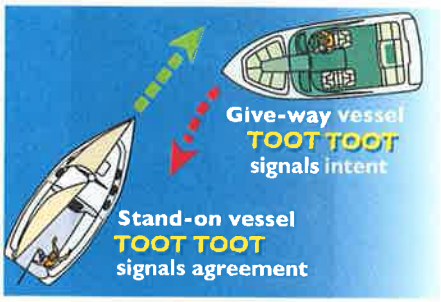
Sound Signals for Encountering Situations

Navigation rules include use of sound signals to communicate with other boaters.

- *TOOT (one short blast) tells other boaters "I intend to pass you on my port (left) side."*



- *TOOT TOOT (two short blasts) tell other boaters "I intend to pass you on my starboard (right) side."*



The other vessel will sound the same signal if in agreement with the proposed maneuver.

Examples of Lateral Markers

Buoys

Can
Green With
Odd Numbers

Nun
Red With
Even Numbers

Sound Signals

Sound signals used on the waterways are like the turn light indicators used to signal intentions on the highways. Sound signals are also like an automobile's horn used to let other drivers know you are near or to alert them of danger. Chapter 4 discusses the sound signal equipment requirements for different types of vessels. All boaters should know proper sound signals, but especially those boaters operating near commercial vessel traffic.

- Sound signals must be audible for at least one-half mile. Sound signals are composed of short and long blasts:
  - *Short blast* - about one second in duration
  - *Prolonged blast* - 4-6 seconds in duration
- Vessel operators use sound signals to communicate a change in direction to other boaters:
  - *One short blast* tells other boaters "I intend to pass you on my port (left) side."
  - *Two short blasts* tell other boaters "I intend to pass you on my starboard (right) side."
  - *Three short blasts* tell other boaters "I am backing up."
- Sound signals let other boaters know where you are located during periods of restricted visibility such as extreme fog. If you hear the fog signal of a vessel you cannot see, slow to a minimum speed until you are sure there is not a risk of collision.
  - *One prolonged blast at intervals of not more than two minutes* is the signal used by power-driven vessels when underway.
  - *One prolonged plus two short blasts at intervals of not more than two minutes* is the signal used by sailing vessels.
- Sound signals are used to warn other boaters or alert them to danger:
  - *One prolonged blast* is a warning signal (for example, used when coming around a blind bend or leaving the dock).
  - *Five (or more) short, rapid blasts* are used to signal danger or to signal that you do not understand or disagree with the other boater's intentions.

U.S. Aids to Navigation System (ATON)

Buoys and markers are the "traffic signals" that guide vessel operators safely along some waterways. They also identify dangerous or controlled areas and give directions and information. As a recreational vessel operator, you will need to know the lateral navigation markers and non-lateral markers of the U.S. Aids to Navigation System.

Lateral Markers

These navigation aids are used to mark the edges of safe water areas; for example, to direct travel within a channel. The markers use a combination of colors and numbers, which may be applied to buoys or permanently placed markers.

Colors and Numbers

The colors and numbers mean the same thing regardless of what kind of buoy or marker on which they appear:

- **Red Colors, Red Lights and Even Numbers:** These mark the edge of the channel on your starboard (right) side as you enter from the open sea or head upstream. Numbers will usually increase consecutively as you return from the open sea or head upstream.

- **Green Colors, Green Lights and Odd Numbers:** These mark the edge of the channel on your port (left) side as you enter from the open sea or head upstream. Numbers will usually increase consecutively as you return from the open sea or head upstream.
- **Red and Green Colors and/or Lights:** These are placed at the junction of two channels to indicate the preferred (primary) channel when a channel splits. If green is on top, the preferred channel is to the right. If red is on top, the preferred channel is to the left. These are also sometimes referred to as "junction buoys."

Shapes

- **Nun Buoys:** These cone-shaped buoys are always marked with red markings and even numbers. They mark the edge of the channel on a boater's starboard (right) side when entering from the open sea or heading upstream.
- **Can Buoys:** These cylindrical-shaped buoys are always marked with green markings and odd numbers. They mark the edge of the channel on a boater's port (left) side when entering from the open sea or heading upstream.

Other Kinds of Buoys and Markers

- **Lighted Buoys:** These buoys use the lateral marker shapes, colors and numbers discussed above. In addition, they have a matching colored light.
- **Daymarks:** These are permanently placed signs attached to structures such as posts in the water. Common daymarks are red triangles (equivalent to nuns) and green squares (equivalent to cans). These may also be lighted.

Variations on the U.S. Aids to Navigation System

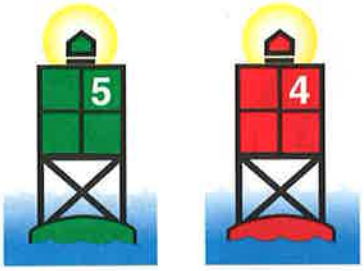
Some waters of the United States have slight variations on the lateral navigation markers. You should be aware of these if you boat on these waters.

Intracoastal Waterway (ICW)

The Intracoastal Waterway (ICW) is a chain of local channels linked together to provide an inland passage along the Atlantic and Gulf of Mexico coasts.

- Channels that are part of the ICW are identified by yellow symbols on channel buoys and markers. Buoys and markers that bear these yellow symbols are serving a dual purpose—they are navigational aids for both the U.S. Aids to Navigation System and the Intracoastal Waterway.
- When following the Intracoastal Waterway in a clockwise direction starting from New Jersey and heading to Brownsville, Texas:
  - Any marker displaying a yellow triangle should be passed by keeping it on the starboard (right) side of the vessel.
  - Any marker displaying a yellow square should be passed by keeping it on the port (left) of the vessel.
- This is true regardless of the shape or color of the channel marker or buoy on which the ICW symbols are displayed. When you are following the Intracoastal Waterway, the yellow triangles and squares should be used as guides, rather than the colors and shapes of the lateral navigation markers on which they appear.

Lighted Buoys



Green Colors and Lights | Red Colors and Lights

Daymarks (on a Fixed Post or Piling)

Reflective Green, Odd Numbers | Reflective Red, Even Numbers

ICW Symbols on Daymarks

Intracoastal Waterway (ICW) symbols are most commonly found on daymarks.

BOATER'S TIP!

In most circumstances you can use this phrase as a reminder of the correct course when returning from open waters or heading upstream:

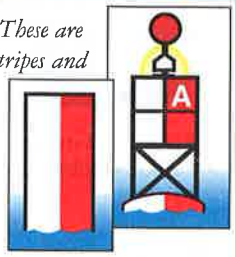
"Red Right Returning"

Western Rivers System Marker

On the Western Rivers System, this daymark indicates the right side of the channel as a boater heads upstream. The number below the marker indicates that the boater is 73.5 miles from the river's mouth.

Other Non-Lateral Markers

Safe Water Marker: *These are white with red vertical stripes and indicate unobstructed water on all sides. They mark mid-channels or fairways and may be passed on either side.*



Inland Waters Obstruction Marker: *These are white with black vertical stripes and indicate an obstruction to navigation. You should not pass between these buoys and the shore.*

Mooring Buoy: *These are white with a blue horizontal band. They are usually placed in marinas and other areas where vessels are allowed to anchor. These are the only buoys you may legally tie up to.*

Western Rivers System

This system of markers is used on the Mississippi River and its tributaries above Baton Rouge, Louisiana, and on some other rivers that flow toward the Gulf of Mexico. The major difference from the U.S. Aids to Navigation System lateral markers shown on the previous page is that navigation markers on the Western Rivers System are not numbered. Numbers displayed below daymarks along this system are not associated with the right or left side of the channel; these numbers indicate distance from the river mouth (except on the Ohio River where the numbers indicate distance from the headwaters).

Non-Lateral Markers

Non-lateral markers are navigational aids that give information other than the edges of safe water areas. The most common are regulatory markers that are white and use orange markings and black lettering. These markers are found on lakes and rivers and are used to:

- Give direction and information
- Warn of hazards and obstructions
- Mark controlled areas
- Mark closed areas

Information

Squares provide information such as places to find food, supplies and repairs, and they give directions, distances and other non-regulatory information.

Danger Area

Diamonds warn of dangers such as rocks, shoals, construction, dams or stumps. Always proceed with caution and keep a safe distance. Never assume every hazard will be marked by a buoy.

Controlled Area

Circles indicate a controlled area such as no wake, idle speed, speed limit or ski zone.

Exclusion Area

Crossed diamonds indicate areas off-limits to all vessels, such as swimming areas, dams and spillways.

Anchoring

Even though anchors are most often used by recreational boaters to "park" their vessel while swimming or fishing, anchors are also critical equipment in times of emergency. Anchoring may be a safety measure if your vessel becomes disabled.

- Commonly available anchors are described below:
  - The plow style anchor is good for most vessels and gets its holding power by digging itself into bottom sediments.
  - The fluke style anchor (commonly referred to as Danforth®) is similar to the plow style, but more lightweight. It is also good for most vessels and gets its holding power by burying itself into bottom sediments.

- Mushroom anchors should not be used to anchor vessels larger than a small canoe, rowboat, small sailboat or inflatable vessel since mushroom anchors have little holding power. You should never depend on a mushroom anchor to hold your vessel in rough water or weather.

✦ Follow these anchoring guidelines before you set out on your vessel:

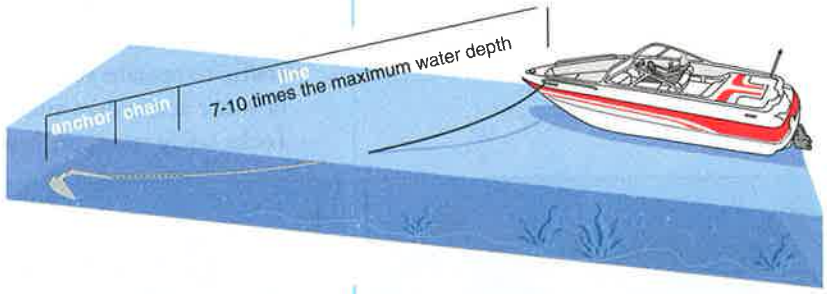
- Attach 7-8 feet of galvanized chain to the anchor. The chain aids in setting the anchor by lowering the angle of the pull as the chain sinks and lies on the bottom. It will also help prevent abrasion of the anchor line from sand or rock on the bottom. Most anchors grip by digging into the bottom when the line is pulled horizontally. Any upward pull may break the anchor loose.
- Be sure the anchor line is strong and long enough to anchor your vessel. A good rule of thumb is that the length of the line should be seven to ten times the depth of the water where you are setting anchor.
- Since anchoring can be an emergency procedure, store the anchor and its lines in an accessible area. Use the anchor immediately to avoid drifting aground if the engine breaks down.

✦ Follow these steps to anchor your vessel:

- Select an area with little current, protected from the weather, preferably with a flat bottom. The area should be well upwind or upcurrent of where you want to end up. Make your approach slowly into the wind or current.
- When you are at the spot where you wish to anchor, stop the vessel, slowly lower the anchor over the bow to the bottom, then slowly back the vessel away, downwind or downcurrent.
- ***Never anchor from the stern as this can cause the vessel to swamp.*** The square stern may be hit by waves and water will splash in. The weight of the motor will add to this problem.
- Let out about seven to ten times as much line as the depth of the water, depending on the wind strength and wave size. Tie off the line around a bow cleat, and pull on the anchor to make sure it is secure. After anchoring, check your position with local landmarks. While at anchor, recheck these landmarks periodically to make sure you aren't moving.
- Periodically check connecting knots on your anchor line. When possible, use splices instead of knots. Knots weaken a line more than splices.

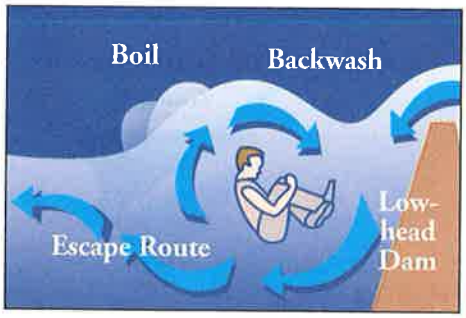
✦ Follow these guidelines when retrieving your anchor:

- Always retrieve your anchor into the vessel before leaving the area.
- To retrieve the anchor, move the vessel over the anchor while pulling in the line. Pulling the anchor straight up should break it free. If the anchor is stuck, turn your vessel in a circle while under power.
- When the anchor breaks loose, stop the vessel, and retrieve the anchor. Never drag the anchor behind the vessel.



You should never anchor or otherwise obstruct passage through channels or areas such as launching ramps or any other high-traffic areas.

Be aware that the vessel will swing downwind or downcurrent from the anchor. Allow "swing room" for any change in wind or current!



Low-head dams pose a serious danger to vessel operators. Surface currents below low-head dams can suck vessels toward the face of the dam. Currents above low-head dams can sweep vessels over the dam. The recirculating currents and turbulent waters below can swamp vessels and drown boaters.

River Navigation, Dams, Locks and Bridges

Vessel operators may encounter physical structures such as dams, bridges and locks. You need to take extra caution in these situations.

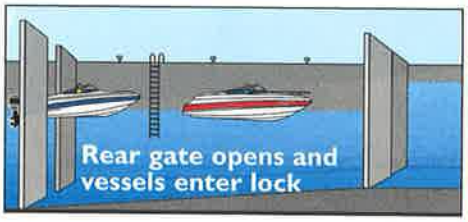
Dams

- Low-head and conventional dams pose dangers both above and below the dams. Low-head dams vary in height from one to several feet below the water's surface. Though their drop may be small, you must never assume you can go over without danger. And remember that water going over a low-head dam creates a strong recirculating current or backroller (sometimes referred to as the "boil") at the base of the dam. Even on small rivers, the force of the backroller can trap your vessel against the face of the dam, and pull you under water—even while wearing your personal flotation device (life jacket). Be aware that on large rivers or at high water the backroller or boil may be located more than 100 feet downstream of the dam. ***Avoid low-head dams.***
- Conventional dams with their powerhouses and spillways are easily recognizable. You should stay clear both above and below the dams. These areas are usually off-limits. Obey all warning signs and signals.

Locks

By learning how to use locks, you will have a host of new opportunities for pleasure boating on the rivers of North America. Lock attendants are present at most locks to help you safely through.

- A series of dams on a river help maintain enough water depth to allow river traffic to operate year-round. As a result of the dam, there will be two levels of water at the dam site—one level above the dam and a different one below. Locks safely transport boats from one water level to another, like an elevator.



- When approaching the lock:
  - Be aware that commercial traffic always has priority over recreational vessels.
  - Wait at least 400 feet away from the lock for the signal to enter the lock.
  - You can alert the lock attendant that you wish to go through the lock by sounding one prolonged blast followed by one short blast of your vessel's whistle. You may also contact the lock attendant using your VHF marine radio on Channel 13, but never interrupt commercial communication.
  - Enter the lock only after you've been signaled to enter by the lock's traffic lights or by the lock attendant. Otherwise, stay well clear of the lock.
- When using locks, boaters should:
  - Have at least 100 feet of rope and fenders to use in securing your vessel inside the lock.
  - Follow the lock attendant's instructions and proceed slowly.
  - Avoid passing another vessel when inside the lock, unless directed to do so by the lock attendant.
  - Wait for the lock attendant's signal to exit the lock.

Traffic Signal Lights at Locks

Flashing red light means stand well clear of the lock and do not enter. Allow plenty of room for vessels to exit the lock.

Flashing amber light means approach the lock at a safe speed and under full control.

Flashing green light means enter the lock.

Bridges

- Many bridges are high enough to provide for normal vessel passage.
- Most states have laws requiring that you pass under bridges at a slow speed. You should always reduce your speed and proceed with caution near any bridge or man-made structure that decreases visibility and passage.
- Some bridges provide only low clearance during normal conditions or periods of high water.
- Many drawbridges open and close when a vessel arrives. Contact the bridge operator by sound signals or VHF marine radio to request passage.
- Debris can collect around pilings of bridges and create obstructions.

Sailboat operators should always check clearance of the boat's mast before passing under bridges. This can be very difficult to determine from the operator's position on the boat. On charted waters, the chart will indicate bridge clearance at a particular water level. Current water level and tide must be factored in to determine current clearance.

Changing Water Levels

Fluctuating water levels can cause special hazards for boaters. Water levels can change rapidly due to tides, flooding rivers or water released through dams. Any of these conditions can cause vessels to run aground in areas where earlier navigation may have been safe. Any change in water level also can affect docking to a fixed pier.

Tides on Coastal Waters

- Tides are created by the sun and moon exerting a pull on the earth. High tides and low tides are predictable and normally occur twice each daily, at approximately six-hour intervals.
- Vessel operators in coastal waters need to be mindful of the effect of tides. The rise and fall of tides can cause water levels to fluctuate by several feet and also can generate strong currents. Some tidal currents are strong enough that some vessels cannot make headway against the current.
- As a vessel operator, you need knowledge of the tides in your local area. It is a good idea to learn how to read tide tables found in many newspapers in coastal areas. Tide schedules can also be found on weather radio channels.

Compasses and Charts

A good compass and **chart** are always useful. Vessel operators will be glad they brought their compass along when darkness, fog or a storm occurs, assuming they know how to use it. It's a good idea to take a basic course in navigation, usually available from the U.S. Coast Guard Auxiliary, U.S. Power Squadrons, American Sailing Association and others.

chart

Map used for navigation

Steering Compass

- A compass, which is used to assist in navigation, is an instrument that shows magnetic north. You must apply a correction to determine the direction of true north. The ability to steer a vessel by a compass is useful if land is out of sight, visibility is reduced or the vessel operator is disoriented.
- Use a vessel compass mounted away from iron, magnets or electrical wiring and equipment. Practice with your compass and other navigation equipment in good weather. Make sure you know how to use them. This will give you confidence during bad weather.

A vessel's compass can be invaluable in bad weather and at night. Make sure you know how to use it.

Nautical Charts

- Charts contain important information such as water depths and locations of channels, sand bars, rocks and vegetation. This is especially helpful when boating in bays or in large lakes. They also can be used to determine the most direct course possible for fuel conservation.
- Check with the local marina for charts. If none are available, obtain local knowledge before boating in an unfamiliar area.

wake

Waves that a vessel leaves behind as it moves through the water

Before You Go Out on Your PWC

Operating a personal watercraft carries the same responsibilities as operating any other vessel. Before taking your PWC out on the water you should:

- ✔ *Read and understand the owner's manual.*
- ✔ *Take time to review the video most PWC manufacturers provide.*
- ✔ *Inspect your PWC periodically and perform necessary maintenance to keep it in good operating condition.*
- ✔ *Be aware of all local, state and federal laws that apply to PWCs. See Chapter 4 for more about these legal requirements.*
- ✔ *Do not forget that in addition to obeying all boating laws, the PWC operator must adhere to laws specific to personal watercraft.*

Operating a Personal Watercraft

Although a personal watercraft (PWC) is considered an inboard powerboat and operators must follow the same rules and requirements that apply to any other power-driven vessel, there are specific considerations for the PWC operator.

Steering and Stopping a PWC

- As discussed in Chapter 1, most PWCs have a steering nozzle at the back of the unit. The nozzle is controlled by a handle bar that directs the stream of water from right to left. When the steering control is turned right, the steering nozzle is turned right. The force of the water stream leaving the nozzle then pushes the back of the vessel to the left, which causes the PWC to turn right.
- The most important thing to remember about steering most PWCs, and other jet-drive vessels, is that you must always have power in order to maintain control. ***If you allow the engine to return to idle or shut-off during operation, you lose all steering control.*** The PWC will continue in the direction it was headed before the throttle was released or the engine was shut off, no matter which way the steering control is turned.
- Always allow plenty of room for stopping. Just because you release the throttle or shut off the engine does not mean you will stop immediately.

Courtesy on the Water

While these rules of courteous operation are especially important for PWC operators, they apply to all other vessel operators as well.

- Jumping the **wake** of a passing vessel, or riding too close to another vessel, creates special risks and is restricted or even prohibited in some states. (See page 35 for your state's specific laws.) Here's why:
  - The vessel making the wake may block the PWC operator's view of oncoming traffic and also conceal the PWC operator from approaching vessels.
  - It can be very stressful for vessel operators to have PWCs continually in close proximity to their vessels.
  - Wake jumping and riding too close to other vessels are common complaints boaters have against PWC operators.
- Do not attempt to spray others with the wake of your PWC. Not only is this discourteous, it is also dangerous and reckless operation.
- Excessive noise from personal watercraft often makes them unwelcome with other vessel operators, as well as with people onshore. Here are some tips on how you can be a courteous PWC operator:
  - Vary your operating area and do not keep repeating the same maneuver.
  - Avoid congregating with other PWC operators near shore, which increases annoying noise levels.
  - Avoid making excessive noise near residential and camping areas, particularly early in the morning. Excessive use in one area can be an irritant to people who are there to enjoy a quiet and relaxing time.
  - Avoid maneuvers that cause the engine exhaust to lift out of the water because it increases noise levels.
  - Do not modify your engine exhaust system if it increases the noise. Improperly modified exhausts will not make your PWC faster and may raise the noise to an illegal level.
- Share the waterways responsibly with other boaters, fishermen, swimmers, surfers or skiers. Respect their right to use the waterways safely and enjoyably.

Environmental Considerations

When operating your personal watercraft, always consider the effect you may have on the environment:

- Do not operate a PWC in shallow water. Bottom sediments or aquatic vegetation can be sucked into the water pump and damage your PWC and the environment.
- Avoid creating a wake, which can cause erosion when operating near shore or in narrow streams or rivers.
- Do not dock or beach your PWC in reeds and grasses. This could damage fragile environments.
- Take extra care when fueling your PWC in or near the water. Oil and gasoline spills are very detrimental to the aquatic environment. Fuel on land if possible.
- Never use your PWC to disturb, chase or harass wildlife.

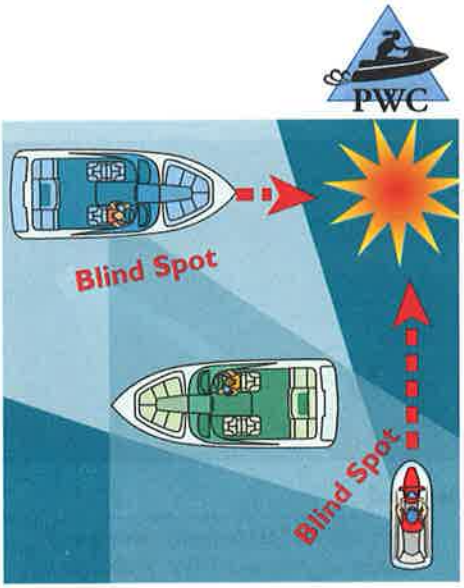
Other PWC Considerations

- Regulations concerning PWCs can vary from state to state. See Chapter 4 for regulations specific to your state.
- Most states require that everyone on board a PWC wear a personal flotation device (life jacket). Check Chapter 4 for the law in your state.
- Frequently inspect your PWC's electrical systems (e.g., starter and engine gauge connections) to ensure there is no potential for electrical spark. This is important because gas fumes could collect in the engine compartment and an explosion could occur if a spark from the electrical system ignited the fumes. After fueling, sniff the engine compartment for any evidence of gas fumes.
- A PWC is very maneuverable and responsive to slight turns of the steering control. At high speeds, a quick turn can make the PWC unstable, causing the operator and passengers to fall off. This is why wearing a personal flotation device is mandatory for everyone on board a PWC.
- Keep hands, feet and hair away from the pump intake area. When cleaning debris away from the pump intake, always shut off the engine.
- Never exceed the manufacturer's recommended capacity for your PWC.
- Know your limits and ride according to your abilities.

Reboarding a Capsized PWC

PWCs are designed to allow you to fall off and reboard from the rear of the craft. Sometimes after a fall, the PWC could be completely overturned. When this occurs, you should be familiar with the proper procedure to right the PWC.

- Most manufacturers have placed a decal at the rear or bottom of the craft that indicates the direction to roll your PWC to an upright position. If no decal exists, check your owner's manual or ask the dealer. With this information you should be able to roll the PWC over and reboard with little trouble. If you roll it over the wrong way, you could cause serious damage to your PWC.
- It is a good idea to practice reboarding with someone else around to make sure you can handle it alone. Also, avoid riding your PWC when you are very tired, because reboarding will be difficult. Also avoid riding where there are strong currents or winds, which could hamper your reboarding efforts.



PWC operators need to beware of passing too closely behind another vessel. The vessel will block his or her view of oncoming vessels, as well as the oncoming vessel's view of the PWC.

BOATER'S TIP!

Because a PWC is very maneuverable it is possible for a PWC to get into trouble fast. Here are some important things to do when operating a PWC:

- *Do not ride too closely behind another PWC. If it turns sharply or if it stalls you could collide with it; if the other rider falls off you could run over him or her.*
- *Always look behind you over both shoulders before making turns; another vessel may be too close behind you.*
- *Be aware of all traffic in your boating area; don't focus just on the short distance ahead.*
- *Always remember that operating a PWC has the same responsibilities as operating any other vessel.*

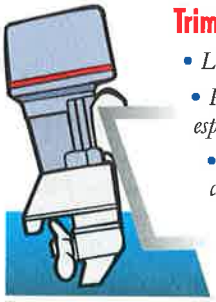
Look for the decal on the rear of the PWC to determine that direction to roll it back to an upright position.

lanyard

Short cord used for fastening something or securing rigging; on a PWC it attaches the ignition safety switch to the operator's wrist or personal flotation device (life jacket)

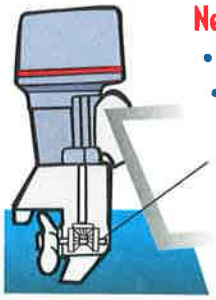
trim

Term that refers to the running position of the engine drive unit



Trimming In (Down)

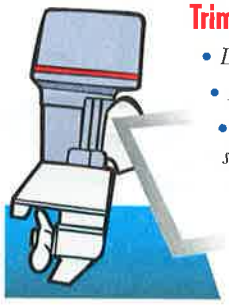
- *Lowers the bow*
- *Results in quicker planing, especially with a heavy load*
- *Improves the ride in choppy water*
- *Increases steering torque or pull to the right*



Neutral Trimming

- *Levels the bow*
- *Normally results in greater efficiency*

Note that the propeller shaft, which connects the propeller to the drive shaft, is parallel to the water surface



Trimming Out (Up)

- *Lifts the bow*
- *Increases top speed*
- *Increases clearance in shallow waters*
- *Increases steering torque or pull to the left*
- *In excess, causes the boat to bounce*

Ignition Safety (Engine Shut-Off) Switches

Some powerboats and most PWCs come equipped with an emergency ignition safety switch. This is a safety device that is designed to shut the engine down if the operator is thrown from the proper operating position.

- A **lanyard** is attached to the safety switch and the operator's wrist or PFD. The safety switch shuts down the engine if the operator falls off the PWC.
- Even though some states do not require attaching the safety lanyard, many lives could be saved if operators would do so. (Note that in most states, an operator of a PWC equipped with an ignition safety switch is required to attach the safety lanyard—see page 35 for your state-specific law.) If your powerboat or PWC does not come equipped with an ignition safety switch, you should have one installed.
- PWCs either have an ignition safety switch or have a self-circling feature if the operator falls off. If the operator is thrown from the operating position of a PWC with the self-circling safety feature, the engine will run at idle speed while the PWC slowly circles so that the operator can reboard. Be sure that the idle speed is always set correctly.

Steering Pull ("Torque") on Outboard Engines

Many outboard engines come equipped with power **trim**, which raises or lowers the drive unit. Using the power trim can increase power on take off and improve your powerboat's performance.

- When you trim your outboard engine either "in" or "out," you may feel a pull on the steering wheel either to the right or left. If the steering pull grows beyond a slight pull, an accidental release of the steering wheel can cause the powerboat to go into a sharp turn and occupants could tossed around the boat or thrown overboard. *Always keep a firm grip on the steering wheel.*
- Some powerboats are equipped with no feedback steering, which can eliminate steering pull. Check your owner's manual. If your powerboat is not equipped with these features, see your dealer for installation details.

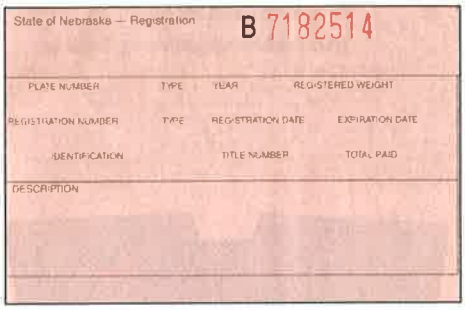
Chapter 4: The Legal Requirements Of Boating

Your Vessel's Registration

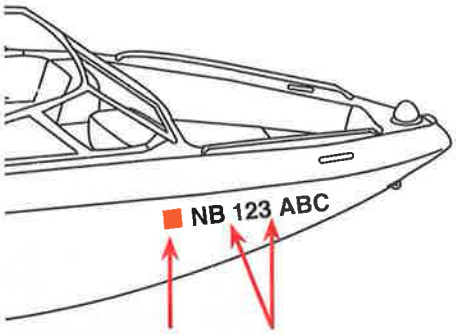
- Requirements for vessel registration vary from state to state. In Nebraska, you must have a Nebraska Certificate of Number (registration) and validation stickers to legally operate a vessel propelled by a mechanical device on any public or private waters, including the Missouri River and Lewis and Clark Lake. Exceptions to the requirement to register include:
  - Vessels not powered by machinery at any time
  - Vessels properly registered in another state and using Nebraska waters for less than 60 consecutive days
  - Vessels documented with the U.S. Coast Guard
- If your vessel requires registration, it is illegal to operate or allow others to operate your vessel unless it is registered and numbered.
- Registration application forms are available from the county treasurer of the boater's county of residence. Current registrations may be renewed online at the Nebraska Game and Parks Commission website: www.outdoornebraska.org/boating.
- After registering a vessel, an owner will receive a *Certificate of Number (registration card) that must be available for law enforcement inspection whenever the vessel is operated.*
- Registration is valid for three years and expires on December 31 at the end of each three-year period. No vessel may be operated after December 31 without renewing the registration.
- If a Certificate of Number is lost or destroyed, the vessel owner must apply to the county treasurer to replace it with a duplicate Certificate of Number.
- The owner of a registered vessel must notify the Game and Parks Commission within 15 days of the following events:
  - The owner changes his or her address
  - The owner transfers all or any part of his or her interest in the vessel
  - The vessel is destroyed or abandoned
- Larger recreational vessels, owned by U.S. citizens, may also (at the option of the owner) be documented by the U.S. Coast Guard. Call the USCG at 1-800-799-8362 for more information.

Displaying the Assigned Number and Validation Stickers

- The registration number and validation stickers must be displayed as follows:
  - Number must be placed on each side of the forward half of the vessel.
  - Number must read from left to right on one line, starting with the validation sticker followed by two capital letters—"NB"—followed by a 2-inch space and three or four digits followed by a 2-inch space and two or three capital letters. For example: NB 123 ABC.
  - Letters and numerals must be **BLOCK** figures at least three inches high, of a color that contrasts with its background and visible from 100 feet.
- No numerals and letters other than the registration numerals, letters and validation stickers may be displayed on either side of the forward half of any mechanically-powered vessel.

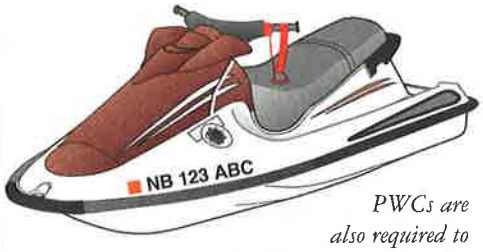


Certificate of Number (Registration)
The Certificate of Number must be carried on board whenever the vessel is operated.



2-inch spaces should appear here.

Validation Sticker

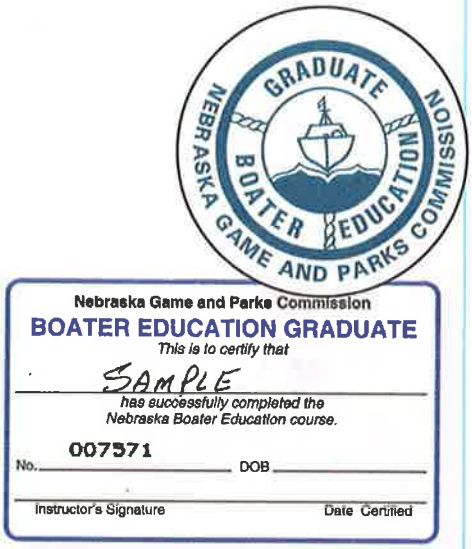


PWCs are also required to display the registration number and validation stickers.

Registration Questions?

Call Nebraska Game and Parks Commission at 1-402-471-0641 or visit our website at www.outdoornebraska.org/boating

Manufacturer's Identification Code (MIC) *Hull Serial Number* *Date of Manufacture* *Model Year*



Boating Safety Certificate

Operators required to have a boating safety certificate must carry the wallet-sized certificate issued by the Nebraska Game and Parks Commission on board the vessel.

Your Vessel's Title

- All first-time owners of newly acquired motorized vessels must obtain a title from the County Clerk in the county where the owner resides before the County Treasurer will issue or renew registration.
- No person may sell a motorized vessel without providing a Certificate of Title that assigns the title to the purchaser.
- All vessels manufactured prior to Nov. 1, 1972, are exempt from titling but not from registration.

Hull Identification Number

- The Hull Identification Number (HIN) is a unique, 12-digit number, assigned by the manufacturer.
- Hull Identification Numbers:
  - Distinguish one vessel from another—the same as serial numbers distinguish one car from another
  - Are engraved in the fiberglass or on a metal plate permanently attached to the transom
  - Should be recorded by the owner and put in a place other than the vessel in case warranty problems arise or the vessel is lost or stolen.
- All vessels built after November 1, 1972, including home-made boats, must have a Hull Identification Number (HIN). The HIN is required by federal law and it must appear on the registration application.
- If a vessel has no HIN, one must be obtained from the Nebraska Department of Motor Vehicles before a title and registration can be issued.

Who May Operate a Vessel

- No one under the age of 14 may operate a motorboat or personal watercraft (PWC) on Nebraska's public waters.
- No one under the age of 16 is allowed to tow an individual with a vessel.
- No one under the age of 18 is allowed to operate a motorboat or personal watercraft on the waters of Nebraska unless he or she has successfully completed a boater safety course and has been issued a valid boating safety certificate.
  - The boater safety course must be one that is approved by the Nebraska Game and Parks Commission.
  - Individuals who are required to complete a boater safety course before operating a vessel must carry the course certificate on board the vessel.
- No one under the age of 18 may rent or lease a PWC.

Unlawful Operation

Nebraska law states that these dangerous operating practices are illegal:

- **Negligent or Reckless Operation** of a vessel or the reckless manipulation of water-skis, a surfboard or similar device is operating in a manner that causes danger to the life, limb, or property of any person. Examples of negligent or reckless operation are:
  - Jumping a wake with a motorized vessel within 50 yards of another vessel
  - Jumping the wake of any vessel that is towing a skier, tuber, wakeboarder, etc.
  - Operating a vessel within any area marked off or set aside as a prohibited area
  - Weaving your vessel through congested waterway traffic
  - Steering toward another object or person in the water and swerving at the last possible moment in order to avoid collision
  - Chasing, harassing or disturbing wildlife with your vessel
- **Improper Speed or Distance** is not maintaining a proper speed and/or distance while operating a vessel. Specifically, it is illegal to:
  - Operate a vessel at a distance from other vessels or at a speed that exceeds safe and reasonable limits given the waterway traffic, marked speed limits, weather and other boating conditions
  - Exceed the speeds posted or charted in any specific zone or area
  - Exceed speeds of 5 mph (**no wake speed**) within 30 yards of any vessel, harbor, marina, landing pier, fishing pier, anchorage, or bathing beach
- **Riding on Bow or Gunwales** is allowing passengers to ride on the bow decking, **gunwales**, or any other position where there is a danger of falling **overboard**.
- **Overloading** is defined as operating a vessel that has been loaded beyond the recommended capacity shown on the capacity plate installed by the vessel manufacturer. At least one half of a vessel's total depth, measured at the center of the vessel, must remain above water.
- **Unsafe Condition** is placing or leaving in public waters any vessel that is not safe to operate. Law enforcement officers may instruct the operator to take immediate corrective action or return to mooring if any of the following "unsafe conditions" exist:
  - The vessel is overloaded
  - There are insufficient personal flotation devices, fire extinguishers, backfire flame arrestors, ventilation or navigation lights
  - The vessel is leaking fuel or has fuel in the bilges
- **Operating on Wildlife Refuge Areas** is operating a motorboat from October 15 through January 15 on any the following state wildlife refuges:
  - Garden County Refuge, North Platte River
  - Lincoln County Refuge, North Platte River
  - Dodge-Saunders County Refuge, Platte River
  - Boyd-Holt County Refuge, Niobrara River
  - Lake Babcock, Platte County, closed to all vessels during the open waterfowl season

Remember...

As an owner of a vessel, you are responsible for any injury or damage caused by the reckless or negligent operation of others you allow to use your vessel.

No Swimming Areas

Swimming or bathing is forbidden in any marinas or within 20 yards of launching, mooring, or docking areas.

gunwale

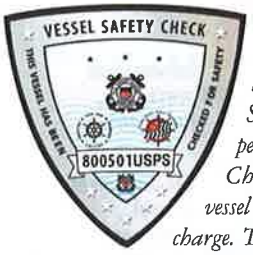
Upper edge of vessel's side (generally pronounced gunnel)

overboard

Over the side or out of the vessel

no wake speed

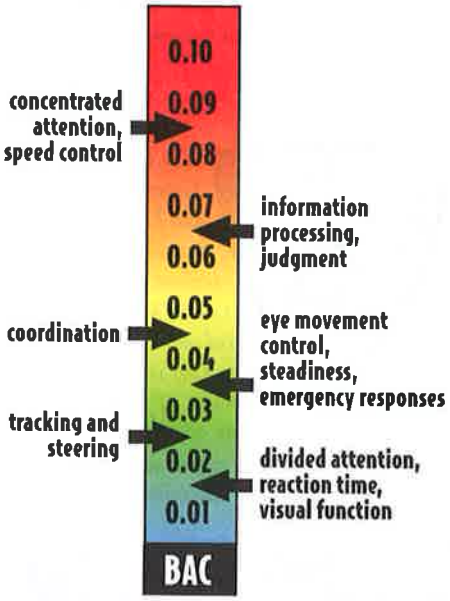
A speed at which the vessel does not produce an excessive wake, not to exceed 5 miles per hour



The U.S. Coast Guard Auxiliary and U.S. Power Squadrons will perform a Vessel Safety Check (VSC) of your vessel and equipment free of charge. This inspection covers federal and state requirements. If your vessel meets all VSC requirements, you will receive a VSC decal. If your vessel fails to meet all requirements, no report is made to any law enforcement agency.

Because you can drink faster than your system can burn the alcohol off, there is an increasing level of alcohol in your blood. This level is referred to as Blood Alcohol Concentration (BAC). Learn more about the effects and risks of consuming alcohol while boating in Chapter 5.

Areas of Impairment Due to Blood Alcohol Concentration (BAC)



moor

To keep a vessel in place by setting anchor or tying the vessel to a fixed object or buoy

Alcohol and Drugs

Nebraska law prohibits operating a motorboat while under the influence of alcohol or drugs. Alcohol and drugs cause impaired balance, blurred vision, poor coordination, impaired judgment and slow reaction time. Alcohol contributes to about one-third of all boating accidents nationwide. Read more about the effects and risks of consuming alcohol in Chapter 5.

- Anyone who operates or attempts to operate a vessel is deemed to have given consent to an alcohol and/or drug test. Any person who refuses to submit to a preliminary breath test will be found guilty of a Class III misdemeanor.
- Nebraska law states that a person is considered to be operating a vessel under the influence of alcohol or drugs if he or she:
  - Has a blood or breath alcohol concentration of 0.08% or greater *or*...
  - Is under the influence of any controlled substance or any other drug, or any combination of alcohol, controlled substance, or drugs that renders that person incapable of operating safely
- Any person who is operating a vessel while under the influence of alcohol or a controlled substance is guilty of Boating Under the Influence (BUI), a Class II misdemeanor. The penalty for BUI includes a fine up $1,000, jail time up to six months and the loss of boating privileges for six months.
- If the court places a person on probation or suspends the sentence, a person may not operate a vessel for 60 days from the date of the order. The court may also require a convicted person to attend and pay for an alcoholism treatment program as a term of probation.

Obstructing Navigation

Vessel operators should always be considerate of other vessel operators even when stopping to anchor or **moor**. Keep in mind that it is illegal to:

- Operate any vessel in such a way that it will unnecessarily interfere with the safe navigation of other vessels on the waterway
- Anchor a vessel in the traveled portion of a river or channel that will prevent or interfere with any other vessel passing through the same area
- Moor or attach a vessel to a buoy (other than a mooring buoy), beacon, light, or any other navigational aid placed on public waters by proper authorities
- Move, displace, tamper with, damage, or destroy any navigational aid

Homeland Security Restrictions

Recreational boaters have a role in keeping our waterways safe and secure.

- Observe and avoid all security zones, including restricted areas near dams and power plants. Do not stop or anchor beneath bridges or in the channel. Violators can expect a swift and severe response.
- Keep a sharp eye out for anything that looks peculiar or out of the ordinary. Report all suspicious activities to local authorities or the U.S. Coast Guard.

Personal Flotation Devices (Life Jackets)

All vessels must be equipped with U.S. Coast Guard (USCG) approved life jackets called personal flotation devices or PFDs. The quantity and type depends on the length of your vessel and the number of people on board and/or being towed. Each life jacket must be in good condition, the proper size for the intended wearer, and very importantly, must be readily accessible! Readily accessible means you must be able to put the life jacket on in a reasonable amount of time in an emergency (vessel sinking, on fire, etc.). Life jackets should not be stowed in plastic bags, in locked or closed compartments or have other gear stowed on top of them.

Vessel operators should ask everyone on their vessel to wear a life jacket (life jacket) whenever on the water. Life jackets can save lives, but only if they are worn!

PFD Requirements

- All vessels must have at least one USCG-approved Type I, II, III or V life jacket for each person on board and being towed. All vessels, except personal watercraft, canoes and kayaks, must also carry one USCG-approved Type IV throwable device.
- Persons less than 13 years of age must wear a USCG-approved Type I, II or III life jacket while on board or being towed by a vessel. A life belt or ring will not satisfy the requirement.
- A personal watercraft may not be operated unless each person on board is wearing a USCG-approved Type I, II, III or V life jacket.
- Sailboarders are not required to wear a life jacket, but it is recommended.
- Inflatable life jackets should not be used by nonswimmers or anyone under the age of 16. USCG-approved inflatable life jackets are fairly new and caution should be practiced when using one.
- All life jackets must be in good and serviceable condition and readily accessible. The life jackets must be of the proper size for the intended wearer. Sizing for life jackets is based on body weight and chest size.

PFD Descriptions

TYPE I: ***Offshore Life Jackets***
These vests are geared for rough or remote waters where rescue may take awhile. They provide the most buoyancy, are excellent for flotation and will turn most unconscious persons face up in the water.

TYPE II: ***Near-Shore Vests***
These vests are good for calm waters when quick assistance or rescue is likely. Type II vests will turn some unconscious wearers face-up in the water, but the turning is not as pronounced as a Type I.

TYPE III: ***Flotation Aids***
These vests or full-sleeved jackets are good for calm waters when quick assistance or rescue is likely. They are not for rough waters since they will not turn most unconscious persons face up. This type of life jacket is generally used for water sports. Some Type III life jackets are designed to inflate when you enter the water.

TYPE IV: ***Throwable Devices***
These cushions or ring buoys are designed to be thrown to someone in trouble. They are not for long hours in rough waters, non-swimmers or the unconscious.

TYPE V: ***Special-Use Devices***
These windsurfing vests, deck suits, hybrid life jackets and others are designed for specific activities, such as kayaking or water-skiing. Some Type V life jackets are designed to inflate when you enter the water. *To be acceptable, Type V life jackets must be used in accordance with their label.*

BOATER'S TIP!

Others who should wear life jackets include:

- *Anyone boating at night*
- *All persons during rough weather*
- *Persons who cannot swim*
- *Persons boating in cold water*
- *Hunters and anglers.*

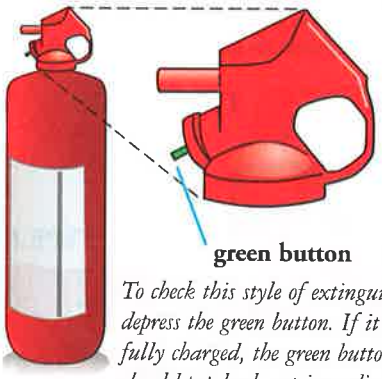
Types of Personal Flotation Devices

Read and follow the label restrictions on all PFDs.

PWC operators need to take special steps in case of fire. Because their fire extinguisher may not be easily accessible, they should simply swim away fast and use another operator's extinguisher.

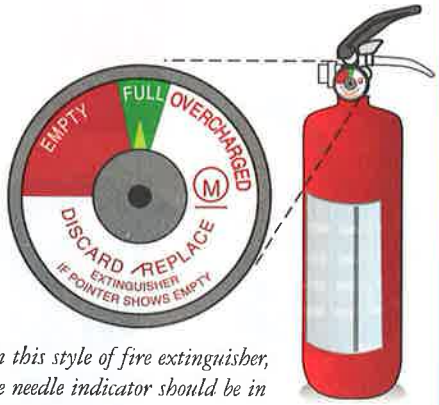
Fire Extinguisher Charge Indicators

Check the charge level of your fire extinguishers regularly. Replace them immediately if they are not fully charged.



green button

To check this style of extinguisher, depress the green button. If it is fully charged, the green button should pop back out immediately.



On this style of fire extinguisher, the needle indicator should be in the "full" range.

Fire Extinguishers

- Extinguishers are classified by a letter and number symbol. The number indicates the relative size of the extinguisher and the letter indicates the type of fire it will extinguish:
  - **Type A** extinguishers are for fires are of combustible solids like wood.
  - **Type B** extinguishers are for fires are of flammable liquids like gasoline or oil.
  - **Type C** extinguishers are for fires are electrical fires.
- All vessels are required to have a Type B fire extinguisher(s) on board if one or more of the following conditions exist:
  - Inboard/outboard or inboard engine
  - Closed compartments
  - Closed living spaces
  - Closed storage compartments in which flammable or combustible materials may be stored
  - Permanently installed fuel tanks
- Approved types of fire extinguishers are identified by the following marking on the label—"Marine Type USCG Approved"—followed by the size and type symbols and the approval number.

Use this chart to determine the type and quantity required for your vessel:

Length of Vessel	Without Fixed System	With Fixed System*
Less than 26 feet	one B-I	None
26 feet to less than 40 feet	two B-I ***or*** 1 B-II	one B-I
40 feet to less than 65 feet	three B-I ***or*** one B-II and one B-I	two B-I ***or*** one B-II

** refers to a permanently installed fire extinguisher system*

- Extinguishers should be placed in an accessible area—not near the engine or in a compartment, but where they can be reached immediately. Be sure you know how to operate them.
- Fire extinguishers must be maintained in usable condition. Inspect extinguishers regularly to make sure that:
  - Seals and tamper indicators are not broken or missing
  - Pressure gauges or indicators read in the operable range
  - There is no physical damage, corrosion, leakage or clogged nozzles

Backfire Flame Arrestors

Because vessel engines may **backfire,** all powerboats (except outboards) fueled with gasoline must have an approved backfire flame arrestor on each carburetor. Backfire flame arrestors are designed to prevent the ignition of gasoline vapors in case the engine backfires.

- Backfire flame arrestors must be:
  - In good and serviceable condition
  - U.S. Coast Guard-approved, or must comply with SAE J-1928 or UL 1111 standards
- Periodically clean the flame arrestor and check for any damage.

Ventilation Systems

The importance of ventilation is crucial. The purpose of ventilation systems is to avoid explosions by removing flammable gases. Properly installed ventilation systems greatly reduce the chance of a life-threatening explosion.

- All gasoline-powered vessels, constructed in a way that would entrap fumes, must have at least two ventilation ducts fitted with **cowls** to remove the fumes. At least one exhaust duct must extend from the open atmosphere to the lower bilge. At least one intake duct must extend from a point at least midway to the bilge or below the level of the carburetor air intake.
- If your vessel is equipped with a power ventilation system, turn it on for at least four minutes after fueling, prior to starting your engine.
- If your vessel is not equipped with a power ventilation system (such as personal watercraft), open the engine compartment and sniff for gasoline fumes before starting the engine.

Mufflers and Noise Level Limits

Excessive noise can prevent a vessel operator from hearing signals and voices.

- The exhaust of every internal combustion engine on any vessel must be effectively muffled. That is, the engine's exhaust must be muffled or suppressed at all times so as not to create excessive noise.
- It is unlawful to operate a vessel that exceeds a noise level of 96db when measured at 100 feet while the vessel is traveling on plane.
- The use of cutouts is prohibited.

WARNING:
Gasoline vapors can explode. Before starting an engine, operate the blower for four minutes and sniff the engine compartment to check for the odor of gasoline.

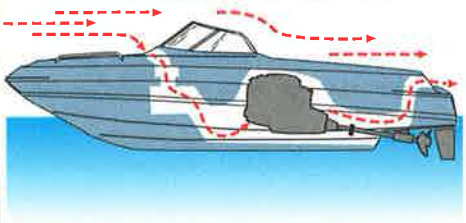
Vessels built after July 31, 1980, which contain power exhaust blowers in gasoline engine compartments, must have the above warning decal near the instrument panel.

backfire

Explosion of prematurely ignited fuel or of unburned exhaust gases in an internal combustion engine

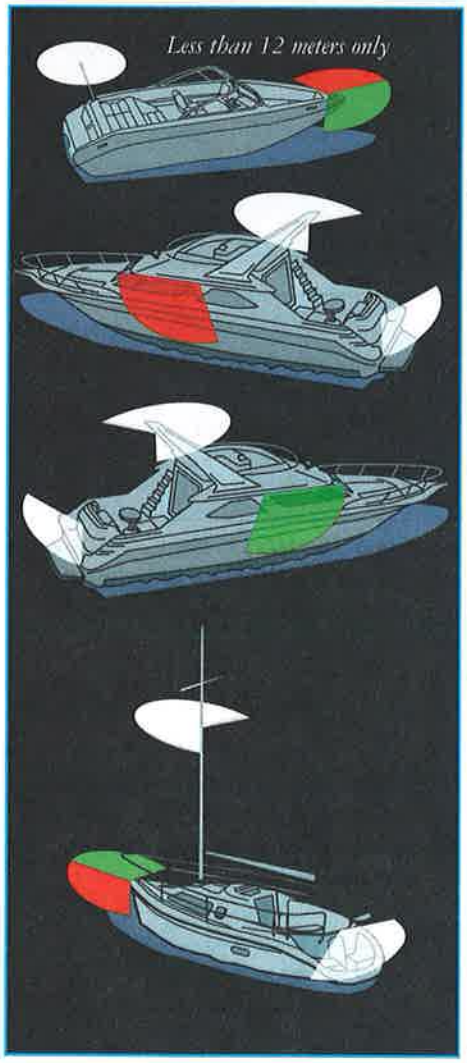
cowl

Hooded opening used for ventilation



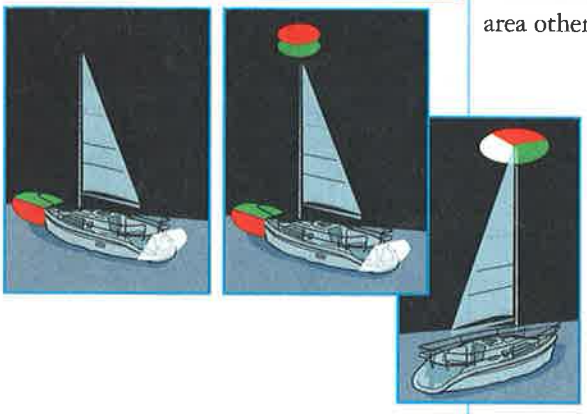
Powerboats are built to ventilate the engine when underway. As the powerboat moves along, an air intake scoops up fresh air and forces it down the air duct into the engine compartment. The exhaust sucks out the explosive fumes from the lowest part of the engine and fuel compartments.

1. Power-Driven Vessels Less Than 20 Meters



The red and green lighting must conform to the above illustration. Red should be on the left side of the bow and green on the right side of the bow.

2. Unpowered Vessels Less Than 20 Meters



An alternative to the sidelights and sternlight is a combination red, green and white light, which must be exhibited near the top of the mast.

Navigation Lights

- Vessel operators must make sure that their vessels are equipped with the proper navigation lights and use the lights during these conditions:
  - When away from the dock between sunset and sunrise.
  - During periods of restricted visibility, such as fog or heavy rain.
- The different types of navigation lights are described in "Night Navigation" in Chapter 3. Don't exhibit any other lights that may be mistaken for required navigation lights. Note: Blue or red flashing lights are restricted to law enforcement vessels only.
- The federal requirements listed below for navigation lights differ depending on the type and size of your vessel. Nebraska state law differs slightly but also accepts these federal requirements. Nebraska law requires also that all vessels carry on board a flashlight or lantern for emergencies. For requirements for larger vessels, see the U.S. Coast Guard's "Navigation Rules."

Power-Driven Vessels Less Than 20 Meters Long When Underway

Vessels less than 20 meters (65.6 ft.) long must exhibit lights as shown in illustration 1. Remember, power-driven vessels include sailboats operating under power. The required lights are:

- Red and green sidelights visible from a distance of at least two miles – or if less than 12 meters (39.4 ft.) long, at least one mile – on a dark, clear night.
- An all-round white light or both a masthead light and a sternlight. These lights must be visible from a distance of at least two miles on a dark, clear night. The all-round white light (or the masthead light) must be at least one meter (3.3 ft.) higher than the sidelights.

Unpowered Vessels When Underway

Unpowered vessels are sailing vessels or those that are paddled, poled and rowed.

- Vessels less than 20 meters (65.6 ft.) long must exhibit the lights as shown in illustration 2:
  - Red and green sidelights visible from a distance of at least two miles – or if less than 12 meters (39.4 ft.) long, at least one mile – on a dark, clear night
  - A sternlight visible from a distance of at least two miles.
- Vessels less than 7 meters (23 ft.) long should:
  - If practical, exhibit the same lights as required for unpowered vessels less than 20 meters (65.6 ft.) in length.
  - If not practical, shine a white light from a lantern or flashlight as shown in illustration 3.

All Vessels When Not Underway

Between sunset and sunrise, all vessels are required to display a white light visible from all directions whenever they are anchored away from a dock or moored in an area other than a designated mooring area.

3. Unpowered Vessels Less Than 7 Meters

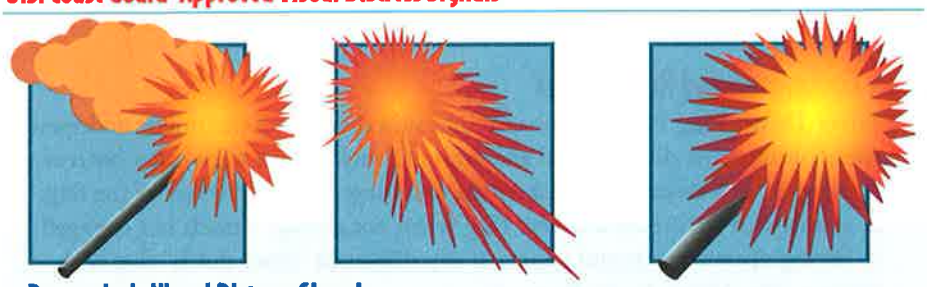
To prevent a collision, vessel operators should never leave shore without a flashlight. Even if you plan to return before dark, unforeseen developments might delay your return past nightfall.

Visual Distress Signals

Visual Distress Signals (VDSs) allow vessel operators to signal for help in the event of an emergency. VDSs are classified as day signals (visible in bright sunlight), night signals (visible at night) or both day and night signals. VDSs are either pyrotechnic (smoke and flames) or non-pyrotechnic (non-combustible). All VDSs must be in serviceable condition, readily accessible, and certified as complying with USCG requirements.

- Vessels on **federally controlled waters** must be equipped with U.S. Coast Guard-approved visual distress signals. All vessels, regardless of length or type, are required to carry night signals when operating between sunset and sunrise. Most vessels must also carry day signals; exceptions to the requirement for day signals are:
  - Recreational vessels that are less than 16 feet in length
  - Non-motorized open sailboats that are less than 26 feet in length
  - Manually-propelled vessels
- If pyrotechnic VDSs are used, a minimum of three must be on board.

U.S. Coast Guard-Approved Visual Distress Signals

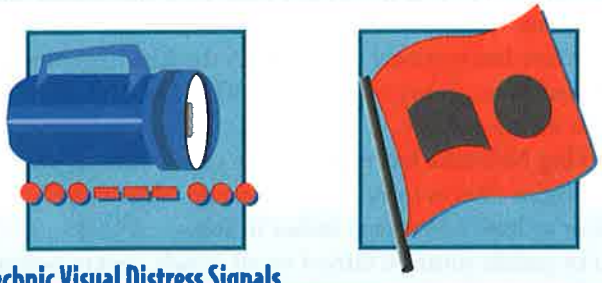


Pyrotechnic Visual Distress Signals

Orange Smoke
Day Signal

Red Meteor
Day and Night Signal

Red Flare
Day and Night Signal



Non-Pyrotechnic Visual Distress Signals

Electric Light
Night Signal

Orange Flag
Day Signal

- The following combinations of signals are examples of VDSs that can be carried on board to satisfy U.S. Coast Guard requirements:
  - Three hand-held red flares (day and night)
  - One hand-held red flare and two red meteors (day and night)
  - One hand-held orange smoke signal (day), two floating orange smoke signals (day) and one electric light (night only)
- It is prohibited to display VDSs on the water, except when assistance is required to prevent immediate or potential danger to persons on board a vessel.

Pyrotechnic Devices

- *Pyrotechnics are excellent distress signals. However, there is potential for injury and property damage if not properly handled. These devices produce a very hot flame and the residue can cause burns and ignite flammable materials.*
- *Pistol launched and hand-held parachute flares and meteors have many characteristics of a firearm and must be handled with caution. In some states they are considered a firearm and are prohibited from use.*
- *Pyrotechnic devices should be stored in a cool, dry, and prominently marked location.*

Non-Pyrotechnic Devices

- *The distress flag is a day signal only. It must be at least 3 x 3 feet with a black square and ball on an orange background.*
- *The electric distress light is accepted for night use only and must automatically flash the international SOS distress signal.*

Arm Signal
Although not a U.S. Coast Guard-approved VDS, use this arm action to summon help if you do not have other visual distress signals available.

federally controlled waters

Waters on which vessels must observe federal requirements, including VDS requirements. These waters include:

- *Coastal waters*
- *The Great Lakes*
- *Territorial seas*
- *Waters which are two miles wide or wider and are directly connected to one of the above.*

Common Sound Signals

Sound signals must be audible for at least one-half mile. Some common sound signals that you should be familiar with as a recreational boater are:

Changing Direction

- *One short blast tells other boaters "I intend to pass you on my port (left) side."*
- *Two short blasts tell other boaters "I intend to pass you on my starboard (right) side."*
- *Three short blasts tell other boaters "I am backing up."*

Restricted Visibility

- *One prolonged blast at intervals of not more than two minutes is the signal used by power-driven vessels when underway.*
- *One prolonged plus two short blasts at intervals of not more than two minutes is the signal used by sailing vessels.*

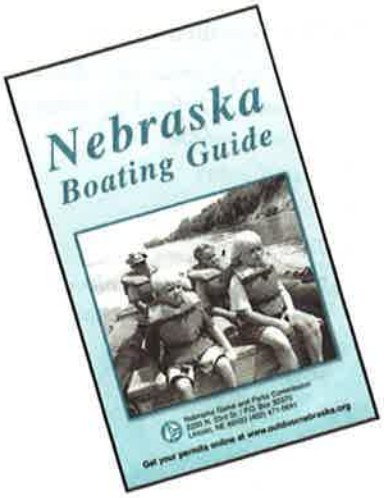
Warning

- *One prolonged blast is a warning signal (for example, used when coming around a blind bend or exiting a slip).*
- *Five (or more) short, rapid blasts signal danger or signal that you do not understand or disagree with the other boater's intentions.*

Divers Flag

Alfa Flag

Divers should not place a flag in an area already occupied by other boaters or where their diving operation will impede the normal flow of waterway traffic.



Sound Producing Devices

A sound producing device is essential in periods of reduced visibility or whenever a vessel operator needs to signal his or her intentions or position. For example, sound signals are required when meeting head-on, crossing and overtaking (described in Chapter 3). Unnecessary sounding of whistles, horns bells or other sound-producing devices is prohibited.

- On Nebraska state waters, requirements for sound producing devices are:
  - All vessels less than 26 feet in length, which includes PWCs, must have an efficient whistle, horn, or other sound producing device.
  - All vessels 26 feet or longer must have a bell *and* an efficient, horn or other sound producing device.
- On federally controlled waters, requirements for sound producing devices are:
  - All vessels less than 20 meters (65.6 ft.) in length, which includes PWCs, must have a mouth, hand, or power-operated whistle or horn, or some other means to make an efficient sound signal.
  - All vessels that are 20 meters (65.6 ft.) or more in length must have a bell *and* a whistle or horn.
- No vessel may be equipped with a siren, except vessels used by law enforcement officers.

Other Equipment and Regulations

- **Diver Down Flag** Persons scuba diving, skin diving, snorkeling or underwater spearfishing must display a red and white Divers Flag to warn other boaters. A diver or underwater spear-fisherman must stay within 150 feet of the flag. It is unlawful to display a Divers Flag when not diving. Vessels not engaged in diving operations should approach any displayed "diver down" flag with caution. The "diver down" flags are:
  - A rectangular red flag with a white diagonal stripe that is one-fifth the width of the flag. The stripe must run from the top of the hoist to the bottom of the flag. The flag must be at least 12 inches square and mounted on a float or buoy.
  - A blue and white International Code Flag A (or Alfa flag), flown from a vessel restricted in its ability to maneuver. This flag indicates that a vessel is involved in a diving activity.
- **Skier Down Flag** Nebraska law requires that vessels towing person(s) on water-skis or similar devices carry a bright orange "skier down" flag, at least 12 inches square or at least 144 square inches in size.
- **Oars:** An oar or paddle must be carried on all vessels, except personal water-craft, sailboards, or similar devices and motorboats 26 feet or longer.
- **Bailing Bucket:** A bailing bucket, efficient bilge pump, or sponge must be carried on all vessels, except personal watercraft, sailboards, or similar devices.
- **Marine Events:** Apply to the Nebraska Game and Parks Commission to obtain authorization for regattas, motorboat, or other boat races, marine parades, tournaments, or exhibitions to be held on state-controlled waters.
  - The person in charge of the event must file an application with the Commission at least 30 days in advance of the event.
  - The application must state the date, time, and location of the event.
  - For events held on federally controlled waters, such as the Missouri River, application must be filed 30 days in advance with the U.S. Coast Guard.
- **Local Regulations:** Many local waterways in Nebraska have specific equipment and operational restrictions in addition to those covered in this chapter. Be sure to check the Nebraska Boating Guide for local regulations before you go out.

Specific Requirements for Personal Watercraft (PWCs)

In addition to adhering to all boating laws, PWC operators have requirements specific to their watercraft.

- Every person on board a PWC must wear a U.S. Coast Guard-approved Type I, II, III or V personal flotation device (life jacket) that is in good and serviceable condition.
- If the PWC is equipped with a lanyard-type engine cutoff switch, the lanyard must be attached to the person, clothing or life jacket of the operator.
- A PWC may not be operated between sunset and sunrise.
- A PWC operator must always face forward.
- There are minimum age and boater education requirements for operators of personal watercraft. See page 26.
- A PWC must be operated in a responsible manner. Maneuvers that endanger people or property are prohibited, including:
  - Weaving through congested vessel traffic
  - Jumping the wake produced by another vessel at a distance of less than 50 yards
  - Jumping the wake produced by a vessel or PWC that is towing a person(s)

Towing a Person Legally with a Vessel

Vessel operators towing a person(s) on water-skis, aquaplanes, surfboards, inner tubes or any similar devices must obey these laws:

- A person may not be towed from 30 minutes after sundown to 30 minutes before sunrise.
- A person being towed must wear a life preserver, buoyant vest or ski belt that is in good condition. The only exception is during state-authorized regattas and similar ski and water shows.
- When a vessel is pulling a person on water-skis, surfboards or similar devices and it is not equipped with a wide-angle rearview mirror, a responsible person at least 12 years old must act as an observer in the vessel with the operator.
- No person under the age of 16 is allowed to tow an individual with a vessel.
- A PWC operator may not tow a person on water-skis or other devices unless the PWC is designed and recommended by the manufacturer to accommodate more than one person.
- When lines are not being used for towing, they must be stowed immediately on board the towing vessel.
- When a water-skier, surfboarder or someone engaged in a similar activity is down in the water, the vessel operator or observer must display a bright orange flag that is visible for 360 degrees. The flag must be at least 12 inches square or at least 144 square inches.
- Those towing skiers on water-skis, surfboards, or similar devices and those being towed must act in a safe and prudent manner.
  - It is illegal to operate the vessel or manipulate the towing rope, water-skis, or other devices such that the towed device or person collides with any other person or object.
  - Vessels towing persons must stay a safe distance from other vessels, persons in the water, or property belonging to others.

Remember...

As an owner of a PWC, you are legally responsible if you allow your PWC to be operated by others in violation of Nebraska law.

When towing persons behind your vessel, you are still responsible to follow all other navigation rules and boating laws.

Vessels towing person(s) on water-skis or similar devices must display a bright orange "skier down" flag whenever the towed person(s) is in the water.

Stay up to date on new boating laws!

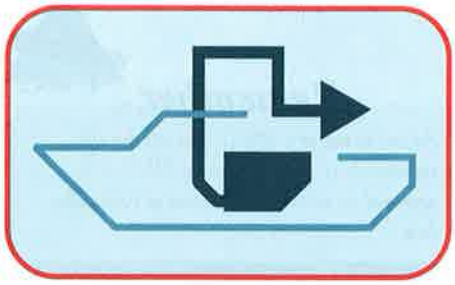
Be sure to stay abreast of new boating laws and requirements.
For state boating law information, contact the Nebraska Game and Parks Commission:

- *Call 1-402-471-0641*
- *Visit www.outdoornebraska.org/boating*

For federal boating laws, call the U.S. Coast Guard's Boating Safety Infoline:

- *1-800-368-5647*

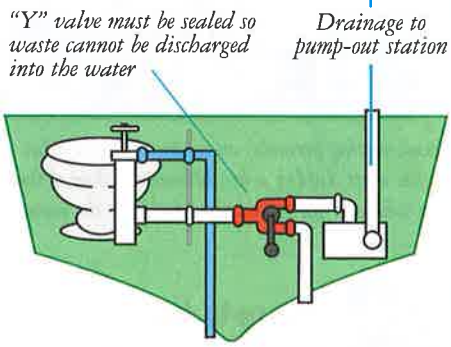
Information in this manual does not replace what is specifically legal for boating in Nebraska, which is found in Nebraska Statutes and Regulations and federal law.



Pump-Out Station Sign

Signs like these are posted at marine sanitation pump-out stations in Nebraska.

Pump-Out Station



Typical Marine Sanitation Device

Waste, Oil, and Trash Disposal in Nebraska

- It is illegal to discharge waste, oil or trash into any state or federally controlled waters. This is for very good reasons:
  - Sewage carries disease and other pollutants that are harmful to people, aquatic plants and animals.
  - Trash thrown into the water can injure swimmers and wildlife alike. It can also plug engine cooling water intakes.
  - Pollution is unsightly and takes away from your enjoyment of the water.
- Vessel operators need to be aware of the following regulations for waste, oil and trash disposal that apply to both federally controlled and state waters. The Refuse Act prohibits throwing, discharging or depositing any refuse matter of any kind (including trash, garbage, oil, and other liquid pollutants) into the waters of the United States.

Discharge of Sewage and Waste

Nebraska law states that it is unlawful to place, leave or discharge waste or waste containers into or near any Nebraska waters.

- Every vessel with an installed toilet must have an operable U.S. Coast Guard-certified marine sanitation device (MSD) Type I, II or III.
- The types of MSDs are:
  - Type III MSD, the simplest and most common, consists of holding tanks or portable toilets. It requires only a small storage space and is simple to operate. Type III MSDs have the least effect on the environment because the waste is discharged on shore into a local sewage treatment facility or at a sewage pump-out station.
  - Types I and II MSDs are usually found on large vessels. Waste is treated with special chemicals to kill bacteria before the waste is discharged. Types I and II MSDs with "Y" valves that direct the waste overboard must be secured in the closed position by a padlock, non-releasable wire tie or removal of the handle, so that the valve can't be used either accidentally or intentionally.
- All installed MSDs must be U.S. Coast Guard-certified.

Discharge of Trash

The Act to Prevent Pollution from Ships places limitations on the discharge of garbage from vessels. It is illegal to dump refuse, garbage or plastics into any state or federally controlled waters.

- You must store trash in a container on board, and place it in a proper receptacle after returning to shore.
- If boating on federal waters, you must display a Garbage Disposal Placard in a prominent location on vessels 26 feet or longer. The Garbage Disposal Placard is a durable sign at least 4 x 9 inches that notifies passengers and crew about discharge restrictions.

Discharge of Oil and Other Hazardous Substances

Regulations issued under the Federal Water Pollution Control Act require all vessels with propulsion machinery to have a capacity to retain oil mixtures on board.

- You are not allowed to discharge oil or hazardous substances. The penalty for illegal discharge may be a fine up to $10,000.
- You are not allowed to dump oil into the bilge of the vessel without means for proper disposal. Fuel spills can be removed using absorbent bilge pads.
- You must discharge oil waste to a reception facility. On recreational vessels, a bucket or bailer is adequate.
- You must immediately notify the U.S. Coast Guard if your vessel discharges oil or hazardous substances in the water. Call the toll-free number 800-424-8802 and report the discharge's location, color, source, substances, size, and time observed.
- If boating on federal waters and your vessel is 26 feet or longer, you must display a 5-by-8-inch sign made of durable material. The sign must be in a conspicuous place in the machinery spaces, or at the bilge pump control stat ion, stating the following:

Discharge of Oil Prohibited

The Federal Water Pollution Control Act prohibits the discharge of oil or oily waste upon or into any navigable waters of the U.S. The prohibition includes any discharge which causes a film or discoloration of the surface of the water or causes a sludge or emulsion beneath the surface of the water. Violators are subject to substantial civil and/or criminal sanctions including fines and imprisonment.

Waste Management Plan

- Federal law requires ocean going vessels of 40 feet or longer with a galley and berth to have a written Waste Management Plan.
- The captain of the vessel is responsible for implementing the Waste Management Plan.
- The Waste Management Plan, identifying the vessel's name and home port, should be posted and include directives to all passengers and/or crew about:
  - Discharge of sewage and hazardous substances
  - Discharge of garbage and other food waste
  - Disposal of plastics, bottles, and cans
  - Applicable placards for additional information
  - Advising the captain in case of oily discharges or diesel spills.

Oil Discharge Placard

A 5 x 8 inch sign that states the law pertaining to oil discharge

What to do in case of discharge:

If your vessel discharges oil or hazardous substance(s) in the water, notify the U.S. Coast Guard by calling:

- *1-800-424-8802*

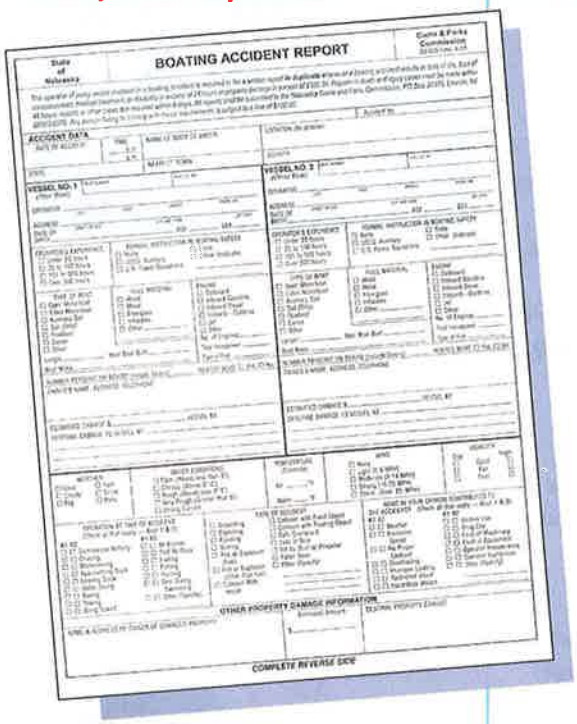
Stop the spread of nuisance species!

It is essential to report Zebra Mussel sightings and help prevent its spread to other lakes and rivers. The barnacle-like mussel is a small black-and-white striped bivalve mollusk that first appeared in this country in 1988 and has spread throughout the Great Lakes and into the Mississippi Basin. Zebra Mussel poses a multi-million-dollar threat to agriculture, industrial, and municipal water delivery systems and possibly sport fisheries.

Take the following precautions to prevent transferring the Zebra Mussel from infested waters:

- *Inspect your vessel, motor, and trailer after each outing, removing any plants and animals you see before leaving the waterbody.*
- *Drain your engine, live well, and bilge on land before leaving the waterbody.*
- *Empty your bait bucket on land. Never release live bait into a waterbody or release aquatic animals from one waterbody into another.*
- *Dry your boat out or power wash it before launching.*
- *If you think you have found a Zebra Mussel, save it and contact your nearest Nebraska Game and Parks Commission office.*

Boating Accident Report Form


BOATING ACCIDENT REPORT

Boating Accidents and Casualties...What the Law Requires You To Do

- An operator involved in a boating accident must stop his or her vessel *immediately* at the scene of the accident and:
  - Assist anyone injured or in danger from the accident, unless doing so would seriously endanger his or her own vessel or passengers
  - Give, in writing, his or her name, address and vessel identification to any person injured and to the owner of any damaged property.
- A vessel operator is required to file a written report whenever a boating accident results in:
  - Loss of life or disappearance of a person *or...*
  - Loss of consciousness, medical treatment or disability for more than 24 hours *or...*
  - Property damage in excess of $500
- Reports must be made within 48 hours when the accident resulted in a death, disappearance or injury. In other cases, reports must be made within five days. All reports must be submitted to the Nebraska Game and Parks Commission, Box 30370, Lincoln, NE 68503.
- Accident report forms are available from any Nebraska Game and Parks Commission office.
- The vessel owner is liable for any injury or damage caused by negligent operation of any powered vessel. The owner is not liable if the vessel is being used without his consent unless the operator is a member of his immediate family.

Enforcement

Nebraska Game and Parks Commission officers and all other peace officers enforce the boating laws of Nebraska. U.S. Coast Guard officers also patrol and have enforcement authority on federally controlled waters.

- Officers have the authority to stop and board your vessel in order to check for compliance with state and federal laws.
- It is illegal to refuse to follow the directive of a person with law enforcement authority. An operator who has received a visual or audible signal from a law enforcement officer must bring his or her vessel to a stop.

Nebraska Game and Parks Commission officers and all other officers with law enforcement authority have the right to stop and board vessels in order to check for compliance with state and federal laws.

Chapter 5: Boating Emergencies...What To Do

When you go boating, you will encounter hazards and risks. The outcome will be determined by your knowledge, skill and attitude toward safety. It's important to make a boating emergency less likely to happen by taking the proper precautions; but, it's equally important to be prepared and know what to do if an emergency occurs.

Risk Management

Nearly all accidents are the result of human error—and thus preventable. The warning signs are there but go unrecognized or are ignored. The best way to handle a boating emergency is to reduce the chance of a mishap before it occurs. If an emergency does occur, you should minimize the risk of a fatality, injury or damage. Risk management is the practice of recognizing and acting on the warning signs of accidents, or lessening the effect of an accident if it does occur.

By taking this safety course, you are practicing risk management. By learning safe boating practices, you've already reduced the chance that you will be involved in a dangerous boating emergency. For example, you now know the "rules of the road" and how important it is to keep a sharp lookout and maintain a safe speed. By practicing these rules, you greatly reduce the chance that you'll be involved in a collision. And if you are involved in a collision, wearing your PFD will reduce the chance that you will drown. It is also important to take care of yourself while on the water and know you are vulnerable to boating stressors and dehydration.

Increased Risk Due To Boating Stressors

- The glare and heat of the sun, and the motion, noise and vibration of the vessel caused by the wind and the waves, have a large impact on your body that you may not even be aware of. These natural stressors make you tire more rapidly when on the water—regardless of your age or level of fitness. Many boaters greatly underestimate the effect these stressors have on fatigue.
- While perhaps not fatal themselves, stressors may weaken your body and mind enough to make the risk of an accident much greater.

Increased Risk Due to Dehydration

- A typical boating day in the summer causes your body to generate a large amount of heat. Sitting exposed in the sun increases your body heat. As you ride in a vessel, your body automatically adjusts to the changing position of the vessel. The exertion of this constant adjustment increases body heat.
- The way the body rids itself of increased heat is by sweating. Increased sweating will cause dehydration if fluids are not replaced. Dehydration will make you more fatigued and more at risk for a boating accident.
- The best way to minimize the risk of dehydration is to drink plenty of water—both before you go out and while on the water. A good rule of thumb while you are out in the water is to drink at least one quart of water per hour.
- Besides thirst, other signs of dehydration are nausea, sleepiness, dizziness, irritability and headaches. The first thing you should do if you experience any of these symptoms is to drink plenty of water. If possible, get out of the sun and rest. Serious dehydration may require medical attention.

Profile of a Typical U.S. Boating Fatality

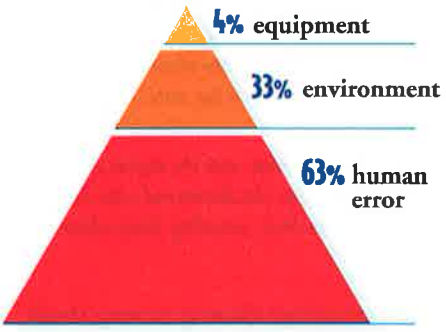
- *Someone not wearing a PFD falls overboard and drowns or...*
- *A vessel capsizes and someone drowns or...*
- *A vessel strikes another vessel or fixed object and occupants are fatally injured or drown due to injuries*

Collisions often occur because the vessel operator is not keeping a lookout for conditions ahead or is going too fast for conditions. Many collisions occur at night. Alcohol is involved in about one-third of all boating accidents nationwide.

You might be surprised to learn that ...

- *Typically, personal flotation devices are on board, but not in use.*
- *The weather conditions are usually calm and clear with a light wind.*
- *The vessel is most often a small boat of open design with a fiberglass hull.*
- *The age of the vessel operator is typically between 26 and 50 years.*

Accident Pyramid



Most accidents are preventable. Even accidents attributed to the environment most likely could have been prevented if the operator had not overlooked the warning signals, had not made poor decisions or had the proper boating skills. Many accidents attributed to equipment could also have been prevented if proper maintenance and defect detection had taken place.

Rescue Technique

You do not need to be an Olympic swimmer to save others. In fact, non-swimmers who know what to do can save a life. If you are standing on a dock when someone falls in and begins to struggle, you should try to "talk" the victim to safety. If he or she is unable to get to the dock, you should:

Reach

- *Extend a fishing rod, branch, oar, pole, boat hook, shirt, towel or other object that can be used to REACH out to the victim and pull him or her to safety.*
- *If nothing is available and the victim is within arm's reach, the rescuer should lie flat and grab the victim's hand or wrist and pull him or her to safety.*

Throw

- *If the victim is too far away to reach, and a boat isn't handy, THROW the victim a PFD or anything else that will float.*

Row

- *If a non-powered boat is convenient, ROW to the victim, then use an oar or paddle to guide him or her to the stern. Let the victim remain in the water while holding to the stern as you paddle to shore. If the victim is too weak to hold on, hold him or her until more help arrives.*
- *If using a powerboat, stop the engine and glide to the victim from the downwind side. Help the victim into the boat, avoiding sharp objects.*

Go

- *Swimmers without lifesaving training should not swim to a victim. Never place yourself in the same danger. Instead, GO for help. If you must swim to a victim, take along anything that floats to keep between you and the victim.*

Minimize Risk of Boating Accidents—Avoid Alcohol

- The effect of alcohol is increased by the natural stressors placed on your body while boating. Also, the dehydration of your body causes alcohol to be absorbed more quickly into your system. Research has proven that one-third of the amount of alcohol that it takes to make a person legally intoxicated on land can make a boater equally intoxicated on the water.
- Alcohol depresses the central nervous system and affects judgment and slows physical reaction time. Most people become slightly intoxicated after only one drink. Alcohol makes it difficult for you to pay attention, especially to multiple tasks. For example, it will be more difficult for you to keep track of two or more vessels operating in your area. This could become critical if you are placed in an emergency situation and must make a sudden decision.
- Alcohol can reduce the ability to distinguish and interpret colors, especially red and green.
- Alcohol impairment increase the likelihood of accidents—for both passengers and vessel operators. Always designate non-drinking boaters to operate the vessel and to act as an observer if your group plans to consume alcohol. Do not allow your skipper to continue operating if he or she is drinking. Alcohol contributes to about one-third of all boating accidents nationwide.
- Drinking while boating is a choice. The best way to minimize the risk of an accident is to make the wise choice—**Don't drink and boat!**

Minimize Risk of Drownings—Wear PFDs

- Approximately 90% of all boating fatalities involve drownings caused by boating accidents. Most drowning victims are not wearing a PFD or are wearing an inadequate one. That is why it is critical that you have a U.S. Coast Guard-approved PFD for each person on board.
- Not only is it important, but it is the law that:
  - *PFDs are readily accessible.* Better yet, each person should wear a PFD because PFDs are difficult to put on once you are in the water. In most fatal accidents, the proper PFDs are on board but are not in use or are not easily within reach. If you are in the water without a PFD, retrieve a floating PFD and hold it to your chest by wrapping your arms around it.
  - *PFDs are of the proper size for the intended wearer.* Always read the label of the PFD to make sure it is the right size based on the person's weight and chest size. It's especially important to check that a child's PFD fits snugly. Test the fit by picking the child up by the shoulders of the PFD and checking that his or her chin and ears do not slip through.
  - *PFDs are in good and serviceable condition.* Regularly test a PFD's buoyancy in shallow water or a swimming pool. Remember that over time, the ultra-violet radiation from the sun will break down the synthetic materials used to make your PFD. Frequently inspect personal flotation devices for rips or tears, discolored or weakened material, insecure straps or zippers or labels that are no longer readable. Discard and replace any PFD that has a problem. If using an inflatable PFD, before each outing check the status of the inflator and that the CO_2 cylinder has not been used, has no leaks and is tightly screwed in. Also check that the PFD itself has no leaks by removing the CO_2 cylinder and orally inflating the PFD. The PFD should still be firm after several hours. After an inflatable PFD has been inflated using the CO_2 cylinder, replace the spent cylinder and re-arm it. Because an inflatable PFD is a mechanical device, it requires regular maintenance. Inspect and maintain the inflatable portion of the PFD as instructed in the owner's manual.

Boating Accidents

Most boating fatalities are not weather-related. Fatalities typically occur in open vessels on inland waters in the afternoon when the weather and visibility are good, and the winds and water light to calm. U.S. Coast Guard statistics show that the boating accidents discussed below account for about 90% of all boating fatalities. Capsizing and falling overboard are the leading causes of boating fatalities.

Capsizing and Swamping

Capsizing is when a vessel turns on its side or turns completely over. Swamping is when a vessel fills with water.

- ✦ To reduce the risk of capsizing or swamping, follow these rules:
  - Don't overload your vessel. Balance the load of all passengers and gear.
  - Turn your vessel at controlled speeds.
  - If anchoring, secure the anchor line to the bow of the vessel, never to the stern.
  - Don't boat in rough water or bad weather.
- ✦ If you should capsize or swamp your vessel, or if you have fallen out and can't get back in, *stay with the vessel.* Your swamped vessel will signal that you are in trouble. Use other devices available (visual distress signals, horn, mirror) to signal for help.
  - Take a headcount. **Reach, throw, row or go** (see page 40) to anyone in distress.
  - If the vessel remains afloat, try to reboard. If the vessel is overturned or swamped, hang onto it. It will support you, saving loss of energy from treading water. If possible, climb onto the bottom of an overturned vessel. It is important to get as much of your body as possible out of cold water.
- ✦ If the vessel sinks or floats away, don't panic.
  - If you are wearing a PFD, make sure it is securely fastened, remain calm and wait for help.
  - If you aren't wearing a PFD, look for one floating in the water or other buoyant items (coolers, oars or paddles, decoys, etc.) to use as a flotation device. Make sure others are wearing PFDs or have a buoyant item.
  - If there is no other means of support, then you may have to tread water or simply float. In cold water, float rather than tread to reduce hypothermia.

Falling Overboard

Most of the fatalities due to falling overboard could have been avoided if victims had worn their PFDs. Many times alcohol is involved.

- ✦ To prevent falling overboard:
  - Don't sit on the gunwale, bow, seat backs, motor cover or any other area not designed for seating.
  - Don't sit on pedestal seats when underway at greater than idle speed.
  - Don't stand up in the vessel.
  - Don't move about the vessel when underway.
  - Don't lean out from small vessels.
- ✦ If someone on your vessel falls overboard, you need to immediately:
  - Reduce speed and throw the victim a PFD unless you know he or she is already wearing one.
  - Turn the vessel around and slowly pull alongside the victim, approaching the victim from downwind or into the current, whichever is stronger.
  - Stop the engine. Pull the victim on board over the stern, keeping the weight in the vessel balanced.

BOATER'S TIP!

Small craft boaters need to be especially careful to avoid falling overboard. Falling overboard and drowning is the major cause of fatalities for small vessels. To prevent falls overboard, follow these guidelines:

- *Keep centered in the vessel with your center of gravity low in the vessel. Always keep your shoulders between the gunwales.*
- *If possible, don't move about the vessel. If you must move, maintain three points of contact. That is, keep both hands and one foot or both feet and one hand in contact with the vessel at all times.*
- *It is extremely important not to overload a small vessel. Evenly distribute and balance the weight of persons and gear within the vessel, keeping most of the weight low.*

Sitting on the gunwale, bow, seat backs or any other area not designed for seating is risky behavior and can result in falling overboard. It is illegal in many states (see Chapter 4).

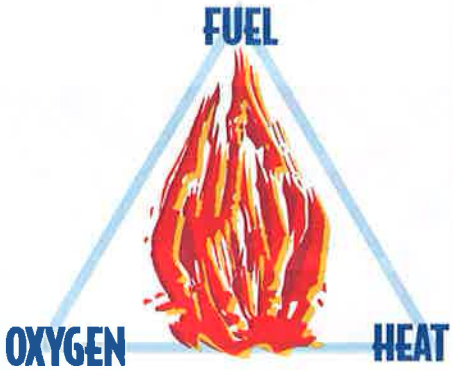
If you are unable to get to safety, here are three ways to float:

Horizontal Back Float *Floating on your back keeps your face out of the water and allows you to conserve energy.*

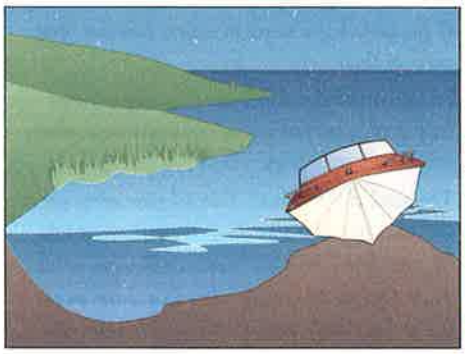
Vertical Back Float *Extend your arms out to the side, and keep your body underwater except for your head, neck and upper chest.*

Face Down Floating *Rest face down in the water for 15-20 second intervals, lifting your head in between to take a breath of air. While in the resting position, slowly exhale. This is recommended only for warm water (above 80 degrees Fahrenheit).*

Swimming to shore should be considered only as a last resort.



To prevent a fire emergency, don't mix the three ingredients that cause a fire to erupt: fuel, oxygen and heat.



A vessel is grounded (runs aground) when it gets stuck on the bottom. Never assume that water is deep enough just because you are away from the shore. Also, don't presume that all shallow hazards will be marked by a danger buoy.

Collisions

A vessel collision is when your vessel collides with another vessel or with a fixed or floating object such as a rock, log, bridge or dock. Collisions can cause very serious damage, injury or even death. Collisions are becoming more common due to faster vessels and increased traffic on our waterways.

- It is every vessel operator's responsibility to avoid a collision. Operators should:
  - Follow the rules of navigation found in Chapter 3.
  - Pay attention to navigational aids.
  - Keep a sharp watch and appoint one person to be the "lookout."
  - Maintain a safe speed, especially in congested traffic and at night.
  - Look in all directions before making any turn.
  - Use caution if you are traveling directly into the sun's glare on the water.
  - Never operate when fatigued, stressed or consuming alcohol.
  - Be aware that floating debris is more common after heavy rainfall.

Fire Emergencies

Many vessels have burned to the water line needlessly.

- To help prevent a fire:
  - Don't mix the three ingredients required to ignite a fire—fuel, oxygen and heat.
  - Make sure ventilation systems have been installed and are properly used.
  - Maintain the fuel system to avoid leaks.
  - Follow the safe fueling procedures outlined in Chapter 2.
- If fire erupts while your vessel is underway, follow these steps:
  - Stop the vessel and have everyone who is not wearing a PFD put one on.
  - Keep the fire downwind.
    - If the fire is at the back of the vessel, head the vessel into the wind. If the engine must be shut off, use a paddle to keep the bow into the wind.
    - If the fire is forward, put the stern into the wind.
  - If a motor catches fire, immediately shut off the fuel supply.
  - Aim the extinguisher at the base of the flames, and sweep back and forth (remember P.A.S.S.).
  - Never use water on a gasoline, oil, grease or electrical fire. Water will spread a gas fire and will act as a conductor for electricity.
  - Summon help with your VHF radio.

Running Aground

If you run aground while traveling at a high speed, the impact not only can cause damage to your vessel but injury to you and your passengers.

- Knowing your environment is the best way to prevent running aground.
  - Become familiar with the locations of shallow water and submerged objects before you go out. Be aware that the location of shallow hazards will change as the water level rises and falls.
  - Learn to read a chart to determine your position and the water depth.
- If you run aground, check for leaks. If the impact did not cause a leak, follow these steps to try to get loose:
  - Don't put the vessel in reverse. Instead, stop the engine and lift the outdrive.
  - Shift the weight to the area farthest away from the point of impact.
  - Try to shove off from the rock, bottom or reef with a paddle or boathook.
  - Check to make sure your vessel is not taking on water.
- If this fails, use your visual distress signals (see Chapter 4) to flag down help from another vessel. Call for assistance using your VHF marine radio.

Personal Injuries

Proper response to accidents results from good training and common sense. If an injury is minor, treat it immediately. If an injury is major, make the victims as comfortable and safe as possible until medical personnel arrive, assuming you have a way to call for help.

Hypothermia

Hypothermia, which can cause death, occurs when the body loses heat faster than it produces it. It can occur anytime an individual is exposed to cold, wet or windy weather. However, it poses the greatest danger when boaters are immersed in water during an emergency. Cold water robs the body of heat 25 times faster than does cold air.

- The best way to prevent hypothermia is to dress appropriately:
  - Always dress according to the water temperature as well as the air temperature and be prepared for being immersed in cold water.
  - Make sure you are dressed to protect the areas of high heat loss—the head, neck, sides and groin.
  - Wear a wetsuit or dry suit if your water activity involves being exposed to cold water.
  - When wearing a wetsuit or dry suit is impractical due to warm air temperature, dress in several layers of clothing under your PFD.
- Learn to recognize the symptoms of hypothermia. Here are the symptoms in order of severity:
  1. Shivering
  2. Bluish lips and fingernails
  3. Loss of feeling in extremities
  4. Cold, bluish skin
  5. Confusion
  6. Dizziness, slurred speech, blurred vision
  7. Rigidity in extremities
  8. Unconsciousness
  9. Coma
  10. Death
- When trapped in water because of an accident, chances of suffering hypothermia increase greatly. Here are ways to avoid it:
  - Remember the importance of reboarding your vessel. Even if it is swamped or capsized, it is better to get more of your body out of the water.
  - Don't take your clothes off unless absolutely necessary. Remember, clothes trap heat and can help you float.
  - Don't thrash about or move any more than necessary. Excess motion consumes energy and increases loss of body heat.
  - Always wear a PFD. It allows you to float without excessive movement. It helps insulate your body. It allows you to draw your knees and arms toward your chest in the HELP (Heat Escape Lessening Posture) position, protecting the body's three major areas of heat loss (groin, head/neck, rib cage/armpits).
  - If there are other people in the water with you, huddle together with your arms around their shoulders. These huddles are good for the morale of those in the water. Also, rescuers can spot a group easier than individuals.
- Some points to remember when treating hypothermia are:
  - Get the victim out of the wind, rain or water.
  - Treat the hypothermia victim gently, and do not allow him or her to walk unless absolutely necessary. Avoid any unnecessary movement.
  - It is all right to give warm liquids to a conscious and alert victim, but nothing containing alcohol or caffeine.

BOATER'S TIP!

Don't ever think that boating activities won't expose you to the risk of hypothermia. Wear rain gear when it rains. Watch out for the wind. A windbreaker over a fleece jacket is very effective. Hypothermia can occur on what begins as a warm, sunny day. In remote areas, carry matches and go ashore if you need to build a fire. Also carry an extra jacket, hat and blankets. Remember that as a responsible operator, you should tell your passengers what to bring along for the outing.

H.E.L.P. Heat Escape Lessening Postures

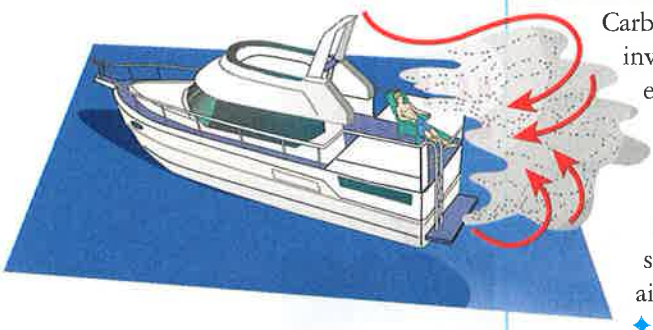
This position reduces exposure of high heat loss areas of the body. Wearing a PFD allows you to draw your knees to your chest and your arms to your sides.

Huddling with other people in the water lessens the loss of body heat and is good for morale.

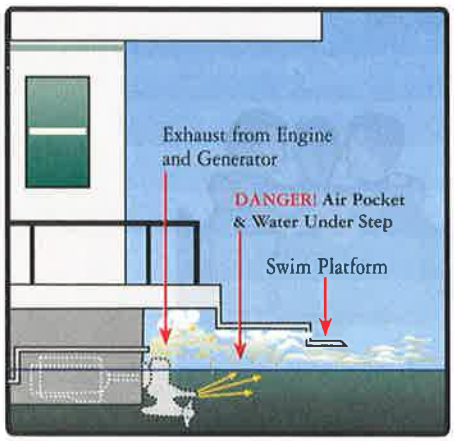
Overexposure to the Sun

Many personal injuries come from overexposure to the sun. Some simple precautions will prevent overexposure.

- *Wearing clothes is the best prevention for sunburn. Sunscreen should be used often.*
- *Avoid spending too much time without effective shielding. Studies indicate that short exposures repeated over long periods can result in skin cancer.*
- *Wear sunglasses to protect your eyes. The sun and its glare can cause eye strain.*



Natural air flows can suck fumes forward onto the vessel.



Swimmers should never enter an enclosed area under the swim platform—even for a second. One or two breaths of the air in this area could be fatal.

- *Avoid warming up the victim too rapidly*. Gently replace wet clothing with dry. Focus on preventing further heat loss by wrapping the victim in a sleeping bag or blankets. Even when wet, materials like wool, polypropylene and other synthetics will help retain body heat. Jackets or blankets containing these materials should be kept on board. Large trash bags can also be wrapped around the victim to retain body heat and protect against the wind.
- When you return to shore, seek medical help immediately. A warm bath will work in *mild* cases only but should never be tried when the victim is unconscious. Victims of moderate to severe hypothermia should be taken immediately to the hospital. CPR may be required.
- If the victim is semiconscious, try to keep him or her awake. If breathing is difficult, make sure his or her air passages are open, and comfort the victim until medical help is obtained.

Carbon Monoxide Poisoning

Carbon monoxide (CO), a by-product of internal combustion engines, is an invisible, odorless, tasteless gas. CO can make you sick in seconds. In high enough concentrations, even a few breaths can be fatal. Sources of CO on your vessel may include engines, gas generators, cooking ranges, space and water heaters.

✦ Early symptoms of CO poisoning include irritated eyes, headache, nausea, weakness and dizziness. They are often confused with seasickness or intoxication. Get anyone with these symptoms into fresh air immediately. Seek medical attention—unless you're sure it's not CO.

✦ To protect yourself and others against CO poisoning while boating:

- Keep fresh air flowing throughout the vessel at all times.
- Know where your engine and generator exhaust outlets are located and keep everyone away from these areas.
- Never sit on the back deck, "teak surf," or hang on the swim platform while the engines are running.
- Never enter areas under swim platforms where exhaust outlets are located—even for a second. One or two breaths of the air in this area could be fatal.
- If exhaust fumes are detected on the vessel, immediately ventilate.
- Install and maintain CO detectors inside your vessel. Replace detectors as recommended by the manufacturer.

✦ Before each boating trip, you should:

- Make sure you know where exhaust outlets are located on your vessel.
- Educate all passengers about the symptoms of CO poisoning and where CO may accumulate.
- Confirm that water flows from the exhaust outlet when the engines and generator are started.
- Listen for any change in exhaust sound, which could indicate an exhaust component failure.
- Test the operation of each CO detector by pressing the test button.

✦ At least monthly, you should:

- Make sure all exhaust clamps are in place and secure.
- Look for leaks from exhaust system components. Signs include rust and/or black streaking, water leaks, or corroded or cracked fittings.
- Inspect rubber exhaust hoses for burns, cracks or deterioration.

✦ At least annually, have a qualified marine technician check the engine and exhaust system.

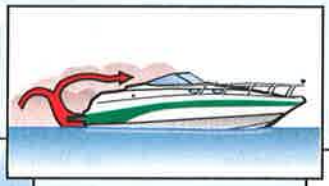
Carbon Monoxide Poisoning Situations

Blocked Exhaust Outlets
can cause carbon monoxide to accumulate in the cabin and cockpit area.

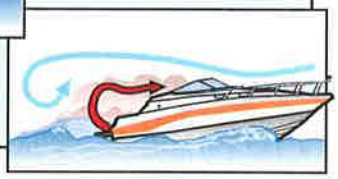
Another Vessel's Exhaust
that is alongside can emit carbon monoxide into the cabin and cockpit of your vessel. Your vessel should be at least 20 feet from a vessel that is running a generator or engine.

Teak Surfing
or dragging or water-skiing within 20 feet of a moving vessel can be fatal. If persons are using swim platform or are close to the stern, all gasoline-powered generators with transom exhaust ports must be off.

Slow Speed or Idling
causes carbon monoxide to accumulate in the cabin, cockpit and rear deck.



Station Wagon Effect
causes carbon monoxide to accumulate inside the cabin, and cockpit when operating the vessel at a high bow angle; or if there is an opening that draws in exhaust; or if protective coverings are used when the vessel is underway.



Responding to Other Serious Injuries

Here are some proper responses to accidents that can occur while boating:

- The seriously injured should be treated for shock by keeping the victim warm, still and in a lying-down position until medical attention arrives. Elevate the feet several inches except in cases of head injury or hypothermia.
- Bleeding usually can be controlled by applying direct pressure to the wound. If the bleeding is minor, apply first aid. If it is serious, apply a dressing, maintain direct pressure and seek medical attention.
- In cases of burns, the immediate goals are to relieve pain, prevent infection and treat for shock. Immediately place minor burns in cold water and apply a dry bandage after the pain subsides. Seek medical attention for major burns.
- Seek medical assistance immediately for broken and dislocated bones. Apply temporary splints with care. An improper splint can result in lifelong disfigurement, but no splint can lead to hemorrhage, shock or death.
- In cases of head, neck or spinal injuries, never move a victim more than is absolutely necessary. The water can provide excellent support until medical personnel arrive. If a victim must be moved, place him or her gently on a firm, full-length support.

First Aid Kit

A responsible vessel operator takes a certified course in first aid and CPR. Doing so enables you to respond quickly in emergency situations and to provide immediate care until the victim can be treated by a physician. When out boating it can take a long time to get medical help. A responsible vessel operator also keeps a first aid kit on board. It should be water proof and include:

- ✔ *Assorted gauze adhesive bandages and pads*
- ✔ *Cotton and cotton-tipped applicators*
- ✔ *Scissors*
- ✔ *Antiseptic medications and lotions*
- ✔ *Aspirin or aspirin substitute*
- ✔ *Rubber gloves*
- ✔ *An extra towel*

BOATER'S TIP!

To determine the distance of an approaching thunderstorm:

- *Count the number of seconds between the flash of lightning and the clap of thunder.*
- *Divide the number of seconds by five.*
- *The result is roughly the distance in miles you are from the storm.*

VHF-FM Stations for NOAA Weather Reports

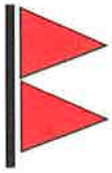
NOAA Weather Radio broadcasts weather forecasts and warnings using these frequencies:

- *162.400 MHz*
- *162.425 MHz*
- *162.450 MHz*
- *162.475 MHz*
- *162.500 MHz*
- *162.525 MHz*
- *162.550 MHz*

Weather Warning Display Signals

Daytime Flags **Night Time Lights**

Small Craft Advisory
Winds in the range of 21 to 33 knots (24 to 38 mph) are conditions considered dangerous to small vessels.



Gale Warning
Winds in the range of 34 to 47 knots (39 to 54 mph).

Storm Warning
Winds 48 knots (55 mph) and above. If winds are associated with a tropical cyclone, this warning forecasts winds of 48 to 63 knots.

Hurricane Warning
Winds of 64 knots (74 mph) and above, displayed only in connection with a hurricane.

Weather Emergencies

Weather can change very rapidly and create unexpected emergencies for vessel operators. Even meteorologists have trouble predicting rapid changes in the weather. You should always watch for changes in the weather and monitor the weather forecast.

How to Avoid Being Caught in Foul Weather

- Tune a portable radio to a local station that gives weather updates. Listed in the margin are the VHF-FM radio stations that broadcast National Oceanic and Atmospheric Administration (NOAA) weather reports, which are updated each hour.
- Be alert to weather conditions. The buildup of dark clouds, shifting winds and graying skies all may be indications of danger. Listen for distant thunder.
- Track changes in barometer readings. A rising barometer indicates fair weather. A falling barometer indicates foul weather approaching.
- Watch for wind direction shifts, which usually indicate a weather change.
- Watch for lightning and rough water. If not electrically grounded, vessels (particularly sailboats) are vulnerable to lightning.
- Be observant of weather from all directions; however, closely watch the weather to the west, the direction from which most bad weather arrives.
- Watch for fog that creates problems in inlets and bays. Typically, fog will form during the temperature changes of the early morning or evening hours and can persist for lengthy periods.

What to Do If Caught in Foul Weather

- Have everyone put on a life jacket (PFD). If a PFD is already on, make sure it is properly secured.
- Keep a sharp lookout for other vessels and floating debris. If there is fog, sound your fog horn as instructed in Chapter 3.
- If your vessel has more than one fuel tank, switch to a "full" fuel tank.
- Head for the nearest shore that is safe to approach. If already caught in a storm, it may be best to ride it out in open water rather than try to approach the shore in heavy wind and waves.
- Reduce speed and head the bow into the waves at a 45-degree angle. PWCs should head directly into the waves.
- Close all hatches, windows, etc. to reduce the chance of swamping.
- Reduce speed, but keep enough power to maintain headway and steering.
- Proceed with caution, watching for debris, shoals or stumps.
- Seat passengers on the bottom of the vessel, close to the centerline.
- Seek shelter in advance of a storm to minimize the danger of having your vessel struck by lightning. If caught on open water during a thunderstorm, stay low in the middle of the vessel.
- If there is lightning, disconnect all electrical equipment. Stay as clear of metal objects as possible.
- Secure loose items. Have emergency gear ready.
- Keep bilges free of water. Be prepared to remove water by bailing.
- If the engine stops, drop anchor from the bow. If you have no anchor, use a "sea anchor," which is anything (a bucket on a line, a tackle box) that will create drag, hold the bow into the wind, and reduce drifting while you ride the storm out. Without power, most powerboats will turn stern to the wind and waves, and could be more easily swamped.

Summoning Help

In times of serious boating emergencies, the ability to summon help quickly can make the difference between life and death. Here are some items that you should carry on board to help get assistance quickly:

- **Visual Distress Signals** It is recommended that you have and know how to use the visual distress signals discussed in Chapter 4. Carry extras. Always respond immediately to other boaters displaying a distress signal.
- **VHF Marine Radio** Consider purchasing a Very High Frequency (VHF) marine radio. VHF marine radios have channels that are reserved for distress calls and are continuously monitored by the U.S. Coast Guard (USCG).
  - VHF marine radios are increasingly popular with boaters for good reasons:
    - They save lives and are easy to use.
    - They are more effective for marine communications than CB radios or mobile phones. VHF radios have more consistent reception than mobile phones.
    - No license is needed when used in recreational vessels.
    - They withstand rough weather.
    - Vessel-mounted radios are wired to the vessel's battery.
    - The source of a VHF signal can be located, so you can be found even in fog.
  - Operating a VHF radio takes some basic knowledge.
    - When operating your vessel, your must monitor Channel 16 (the distress channel). If you hear a MAYDAY call, remain silent, listen and write down information about the vessel in distress. If the USCG or other rescue authority does not respond, try to reach the USCG while traveling toward the vessel. If you cannot reach the USCG, assist the other vessel to the best of your ability while not placing yourself or your passengers in danger.
    - If you have a life-threatening emergency, have everyone put on life jackets and issue a MAYDAY call on Channel 16.
    - Be aware that the distance of sending and receiving messages is limited by the height of the antenna and the power of the radio.
    - Always use the one-watt setting except in an emergency or if your signal is too weak to be clearly received.
    - Channel 16 is a calling and distress channel only and should not be used for conversation or radio checks. It can be used to make contact with another station (vessel), but the communication should then move to a non-emergency channel such as 68 or 69. Penalties exist for misuse of a radio, such as improper use of Channel 16 VHF.
- **Mobile Phone** If you own a mobile phone, remember to include it as part of your standard boating gear. Keep a list of appropriate phone numbers on board.
  - Use it to call 911 or another water rescue authority in your area. Where service is provided, you may also press "*CG" and then "Send" on your mobile phone to contact a nearby USCG rescue center.
  - Cellular telephones may be useful for contacting local law enforcement agencies. However, they have serious limitations and should not be used as a substitute for a VHF radio.
- **Emergency Position Indicating Radio Beacon (EPIRB)** If you operate offshore, you should seriously consider carrying appropriate communications gear. A satellite Emergency Position Indicating Radio Beacon is designed to quickly and reliably alert rescue forces, indicate an accurate distress position and guide rescue units to the distress scene, even when all other communications fail.

VHF Marine Radio Channels

Here are the most commonly used channels on the waters of the United States:

Channel 6 *Intership safety communications.*

Channel 9 *Communications between vessels (commercial and recreational), and ship to coast (calling channel in designated USCG Districts).*

Channel 13 *Strictly for navigational purposes by commercial, military and recreational vessels at bridges, locks and harbors.*

Channel 16 *Distress and safety calls to Coast Guard and others, and to initiate calls to other vessels; often called the "hailing" channel. (Some regions use other channels as the hailing channel. For example, the northeast uses Channel 9.) Contact the other vessel, quickly agree to another channel, and then switch to that channel to continue conversation.*

Channel 22 *Used for communications between the U.S. Coast Guard and the maritime public, both recreational and commercial. Severe weather warnings, hazards to navigation and other safety warnings are broadcast on this channel.*

Channels 24-28 *Public telephone calls (to marine operator).*

Channels 68, 69 & 71 *Recreational vessel radio channel and ship to coast.*

Channel 70 *Digital selective calling "alert channel."*

BOATER'S TIP!

To issue a MAYDAY call on Channel 16 of your VHF radio, transmit:

1. *"MAYDAY, MAYDAY, MAYDAY."*
2. *"This is (name of vessel three times, call letters once)."*
3. *Repeat once more "MAYDAY" and your vessel's name.*
4. *Report your location.*
5. *Report the nature of your emergency.*
6. *Report the kind of assistance needed.*
7. *Report the number of people on board and condition of any injured.*
8. *Describe the vessel and its seaworthiness.*
9. *Wait for a response. If there is none, repeat the message.*

Chapter 6: Enjoying Water Sports With Your Boat

Pre-Departure Checklist

Another way you can assure a good time while operating your vessel is to perform a Pre-Departure Check.

- ✔ *Check the weather forecast for the area and timeframe during which you will be boating.*
- ✔ *Check for proper operation of steering.*
- ✔ *Make sure the throttle control is operating properly.*
- ✔ *Check for any fuel leaks from the tank, fuel lines and carburetor.*
- ✔ *Check the engine compartment for oil leaks.*
- ✔ *Check hose connections for leaks or cracks and make sure hose clamps are tight.*
- ✔ *Drain all water from the engine compartment and be sure the bilge plug is replaced and secure.*
- ✔ *Check to be sure you have a fully charged engine battery and fire extinguishers.*
- ✔ *If so equipped, make sure the ignition safety switch and wrist lanyard are in good order.*
- ✔ *Make sure personal flotation devices are in good condition.*

Carefully explain all the important safety and operating points before allowing someone to operate your PWC. Never allow someone too young or too inexperienced to operate alone. See Chapter 4 for age requirements.

Powerboats, sailboats and personal watercraft (PWCs) offer many opportunities for their operators to enjoy the waters. Along with the enjoyment comes responsibilities—both to their passengers and to others who share the public waterways.

Responsibilities of a Vessel Operator

Sharing the fun of your vessel with your friends and family is all part of the boating experience. When you are operating a vessel, you have a responsibility to your passengers. You are also responsible when you let someone else drive your vessel. As the owner, you could be held liable for any damage caused by it, no matter who is driving at the time.

Responsibility to Your Passengers

As the operator of a vessel, you are responsible for ensuring that your passengers understand basic safety practices and laws. Use a pre-departure checklist to make sure you've taken the necessary safety precautions. Before departing, have a safety discussion with everyone on board. Some of the things you should point out are:

- ✦ Locations of emergency equipment—life jackets (PFDs), fire extinguisher(s), visual distress signals, first aid kit and bilge pump
- ✦ The need for all passengers to wear a PFD, especially during times of high vessel traffic, severe weather or any other dangerous boating conditions
- ✦ Laws about reckless operation, required equipment and waste disposal
- ✦ Safety procedures for responding to a fire or someone falling overboard
- ✦ How to signal for help or use the VHF marine radio to make a MAYDAY call
- ✦ Risks of consuming alcohol

Responsibility to Others You Allow to Operate Your Vessel

You should always make sure that anyone operating your vessel understands his or her responsibilities as a driver. Your attitude toward safe operation will encourage others to drive more safely and responsibly.

- ✦ Before allowing others to operate your vessel:
  - Make sure they meet the minimum age and boater education requirements for operation in your state (see Chapter 4).
  - Make sure they know basic boating safety and navigation rules.
  - Make sure they know how to use the lanyard of the ignition safety switch.
  - Explain the importance of obeying "idle speed," "headway speed" or "slow-no-wake" restrictions.
  - Emphasize the need for staying alert. Beginning operators may concentrate on driving and not pay attention to the surrounding traffic.
- ✦ In addition, if allowing others to drive your PWC:
  - Let them know that they have the same responsibilities as any other vessel operator.
  - Let beginners take their first rides in an uncrowded area. While on shore, show them the proper procedures for deep water starting and reboarding.
  - Be sure to give instruction on how to steer and control the PWC. ***Remind them that power is required for steering control!***
  - Point out that it is easy to have so much fun that you forget to watch where you are going. Tell them to look around before making a turn.

Responsibility to the Environment

While the effect of a single vessel on our rivers, lakes and coastal waters may seem insignificant, multiply that impact by the millions of vessels on the waterways today. To preserve and protect the waters, wildlife and aquatic vegetation enjoyed while boating, each person must be responsible.

- ✦ Keep waterways clean and disease-free by properly disposing of waste and litter.
  - If your vessel is equipped with an installed toilet (marine sanitation device), make sure no sewage is discharged into the water. Empty holding tanks only into pump-out stations.
  - Don't throw any litter overboard. Bring all trash back onshore to dispose of properly. Be sure to retrieve anything that blows overboard.
  - Fishing lines and plastics are deadly for fish and fowl and should never be discarded in the water or near shore.
  - Plastic six-pack holders can trap or strangle birds, fish and other wildlife. Always properly dispose of these on land, by snipping each circle of the holders with scissors.
  - Remember, if you have room to bring it, you have room to bring it back!
- ✦ Practice the three R's—Reduce, Reuse and Recycle.
  - Many marinas provide facilities for recycling oil, aluminum, glass and antifreeze. Use these services whenever possible.
  - Carry reusable items such as plates, silverware, cups and glasses on board to reduce waste.
  - Recycle old fire extinguishers and marine batteries.
- ✦ Protect the shoreline from erosion and preserve aquatic vegetation.
  - Reduce throttle to "no wake" speed when close to a shoreline or in small rivers to help prevent erosion.
  - Don't operate in shallow water where your prop or pump intake can stir up bottom sediments and destroy aquatic plants.
  - Drain the bilge and clean the prop before leaving a waterway. Failure to do so may transport plants or animals from one waterway to another and disrupt the natural balance of the environment.
- ✦ Be careful when using toxic substances on your vessel or around the water.
  - Reduce the amount of detergent you use when cleaning your vessel. Use non-phosphate products, such as hydrogen peroxide, on your vessel. Don't use toxic cleaners.
  - Don't use toxic paints or other toxic products on your vessel. If you must use chemical products on your vessel, minimize their use while on the water.
  - Before the first use of your vessel in the spring, drain the antifreeze into a container and properly dispose of it onshore. Never use antifreeze containing ethylene glycol.
  - When fueling, don't top off the tank. Promptly mop up any fuel spills.

Responsibility to Others Using the Waterways

As a vessel operator, you are just one of many who are enjoying the privilege of using the public waterways. It is your responsibility to stay aware of others in or on the water and to respect their use of the waterways.

Some of the common water activities you may encounter or participate in are discussed on the following pages.

Empty holding tanks only into pump-out stations.

Did You Know?...

Here are some of common ways that boaters harm the environment...

- *If you simply toss your trash into the water, it will be around for years. Here's the time it takes some common items to decompose:*
  - *Paper takes 2-4 weeks. Wax-coated paper, such as fast food wrappers or cups, takes much longer.*
  - *Tin cans take 100 years.*
  - *Aluminum cans take 200-500 years.*
  - *Plastic six-pack rings or any other plastic take 450 years.*
  - *Glass bottles take more than 500 years.*
- *Small amounts of petroleum products spilled in the water can have a large impact:*
  - *One gallon of gasoline can contaminate 750 gallons of drinking water.*
  - *One single quart of oil when spilled can create an oil slick as large as three football fields and remain in the area for up to two years.*

Always stay the legal and safe distance away from a "diver down" flag.

Both divers and vessel operators need to be aware of laws that affect this popular water sport.

Some personal watercraft are capable of pulling water-skiers. Even if it's not required in your state, it is recommended that the PWC be rated for at least three people—the driver, the observer and the retrieved skier. See page 35 for the legal requirements in your state.

Scuba Diving and Snorkeling

Diving is a popular sport and divers can be found in areas shared with recreational boaters. As its popularity increases, it becomes more important for both boaters and divers to take special precautions. See page 34 for the specific laws affecting divers and vessel operators.

- As a vessel operator you should:
  - Be able to recognize a "diver down" flag, a red flag with a white diagonal stripe floating in the area of the divers.
  - Stay the legal distance away from a "diver down" flag. (See page 34 for the legal distance in your state.)
  - Keep a lookout for bubbles breaking the surface of the water. The bubbles indicate that there are divers below who may have strayed from their marked diving area.
- In order to secure their own safety, divers should:
  - Always display the "diver down" flag.
  - Select a vessel that is suited for diving. A small vessel is best, although it should be large enough to comfortably hold diving gear, while allowing room for easy exit and entry. It should also be stable. Flat bottom vessels should be considered for this reason.
  - Avoid overloading the vessel with people, equipment or supplies.
  - Always anchor the vessel securely.

Water-Skiing

Water-skiing, along with being towed on a tube, kneeboard or similar devices, is very popular with boaters. These activities are both fun and challenging; however, towing people on skis or other devices requires additional knowledge and skills.

- Before towing a skier, the operator should:
  - Have a second person on board to act as an observer. (See page 35 for observer qualifications.)
  - Review hand signals with the skier to ensure proper communication.
  - Make sure the skier is wearing a U.S. Coast Guard-approved life jacket (PFD) designed for water-skiing. Keep in mind that ski belts are not U.S. Coast Guard-approved. A PFD with a high-impact rating is recommended. (See page 29 for state-specific requirements.)
  - Be familiar with the area and aware of any hazards such as shallow water, rocks or bridge pilings in the water.
  - Make sure the tow lines are of the same length if towing multiple skiers.
  - Never ski at night. It is both hazardous and illegal.
- While towing a skier, the operator should:
  - Start the engine, making sure that no one in the water is near the propeller.
  - Start the vessel slowly until the ski rope is tight. When the skier is ready and there is no traffic ahead, take off in a straight line with enough power to raise the skier out of the water. Once the skier is up, adjust the speed according to the signals given by the skier.
  - Keep the skier a safe distance—at least twice the length of the tow rope—from hazards and the shoreline.
  - Avoid congested areas, beaches, docks and swimming areas. Water-skiing takes a lot of room. Some areas may have designated traffic patterns.
  - Maintain a sharp lookout for other vessels and obstructions in the water. Let the observer watch the skier.
  - Always respond to the skier's signals. If you need to turn the vessel, signal the skier of your intentions.

- Once the skier has dropped or fallen, circle the skier slowly either to return the tow line to the skier or to pick up the skier. Always keep the skier in view and on the operator's side of the vessel. Some states require the display of a red or orange flag to alert other vessels that a skier is down. (See pages 34-35 for the water-skiing laws and requirements of your state.)
- To avoid propeller injuries, always shut off the engine before allowing the skier to board the vessel. Once the skier is on board, retrieve the tow line unless pulling another skier.

✦ When in the water, the skier should:

- Wear a PFD. You never know when a fall will knock you unconscious.
- Learn to use hand signals.
- Never ski under the influence of drugs or alcohol. This is illegal and extremely dangerous because of the damage to your judgment and reflexes.
- Never spray swimmers, vessels or other skiers. Such activity is illegal, dangerous and discourteous.
- Never wrap any part of the tow rope around your body.
- Always hold a ski up out of the water after falling or after dropping the rope so that the vessel operator and other vessels can see you.
- Never approach the back of the vessel unless the engine has been shut off. Otherwise you could be seriously injured by the vessel's propeller.

Canoeing, Kayaking and Rafting

Paddlers (those who boat in small crafts such as canoes, kayaks and rafts) should follow the same safe practices as any other small vessel operator.

✦ When paddling, you should:

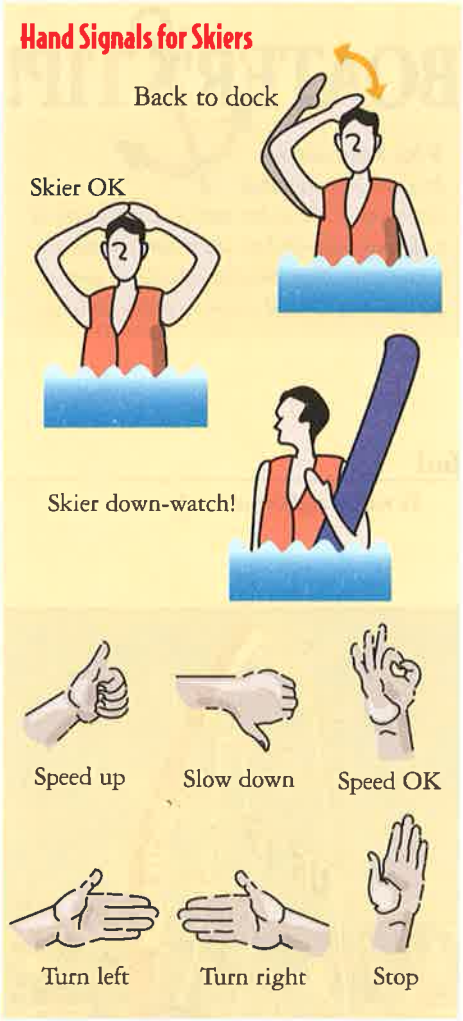
- Know how to paddle or swim in strong currents and be an experienced swimmer. Wear a life jacket (PFD) at all times.
- Never paddle alone. Two canoes with two canoeists each is recommended. Three canoes with two canoeists each is even better. If unfamiliar with the waterway, paddle with someone who is.
- Not overload the canoe. Tie down gear and distribute weight evenly. Don't move around in the canoe as that can make it unstable.
- Check your canoe for leaks.
- Map a general route and timetable when embarking on a long trip. Arrange for your vehicles to be shuttled to the takeout.
- When approaching rapids or low-head dams, go ashore well upstream and check them out before continuing. Be aware of any dangers ahead. Steer clear of drop-offs and dams. Carry your craft around low-head dams.
- Stay away from strainers. Strainers are river obstructions that allow water to flow through but block vessels and could throw you overboard and damage or trap your craft. Strainers may include overhanging branches, log-jams or flooded islands.

✦ If you capsize, float on the upstream side of the canoe.

- You can be crushed on the downstream side if you run into an obstruction.
- Do not attempt to stand or walk in swift-moving water. The current could pull you under if your foot becomes trapped between submerged rocks.
- Float on your back with your feet and arms extended. Float with your feet pointed downstream to act as a buffer against rocks. Don't fight the current. Use the current to backstroke your way to shore.

✦ If canoeing on a lake, watch the weather and stay close to shore. Head for shore if the waves increase.

✦ If the water is cold, take all necessary precautions to avoid hypothermia.



Wearing a PFD (life jacket) at all times does not excuse the paddler from having swimming skills. Novice paddlers should take a certified swimming course before embarking on a trip; experts should take periodic refresher courses.

BOATER'S TIP!

When participating in water activities that expose you to the water, such as windsurfing or paddling, consider both the water and the air temperature when deciding whether to wear a wetsuit or other cold water protective clothing.

furl

To roll up tightly and make secure

Beginners should learn to windsurf from a qualified instructor when winds are light to moderate.

Windsurfing

Another growing water sport is windsurfing (or sailboarding). Almost anyone can learn this sport with proper lessons from a qualified instructor with the appropriate beginner's equipment. And, like all water recreation, precautions must be taken to avoid injury.

- Windsurfers should dress appropriately:
  - Wear a life jacket (PFD).
  - Consider a wetsuit to avoid hypothermia if water or air temperatures are below 65 degrees Fahrenheit.
- Tell someone where you are going and when you expect to return. Give this person instructions on what to do or whom to call in case you are overdue.
- Windsurfers should not become overly fatigued:
  - Take breaks often and limit sessions to about an hour.
  - If feeling weak, **furl** the sail, place it on the board, lay stomach-down on the board and hand paddle or stroke to shore.
  - Be aware of hazards, even those that exist during excellent weather conditions. The glaring sun of a bright day can limit vision and cause eye strain. Remember, your sail can block your view of approaching vessels.
- Always be on the lookout for vessels, avoiding them and their wakes. If operating in open water, be careful not to stray too far from shore.

Sailing

- It is always wise to give sailboats a lot of space. Sailboats are usually the stand-on vessel. Exceptions occur when:
  - The sailboat is overtaking another vessel.
  - The other vessel is restricted in its ability to maneuver. For example, a vessel at anchor or a large vessel in a narrow channel.
  - The sailboat is under power.
- Sailing has its own risks that require special care to avoid.
  - Small sailboats are prone to capsizing and swamping. Be prepared for these common situations. Know how to right the sailboat if it capsizes and carry a bailer on board.
  - Falling overboard is common. For that reason sailors should always wear their life jackets (PFDs).
  - Sailors also should remain aware of the water temperature. Capsizing in the early spring, fall or winter involves the risk of hypothermia.
- Those interested in sailing should take a certified course from organizations like the American Sailing Association, the U.S. Sailing Association, the Red Cross or a qualified commercial sailing school before setting out on their own.
- Here are some tips for safe sailing:
  - Stay off the water during storms or periods of high winds.
  - Remember that the mast can be a conductor of lightning.
  - Carry a flashlight in case you remain on the water after dark. Shine the light on a sail to warn approaching vessels of your presence if you have no navigation lights or if it appears that another vessel does not see your navigation lights.
  - Remember that sailboats with an engine must have the red, green and white navigation lights.
  - Be aware of mast clearance when passing under power lines and bridges.

Fishing

Fishing is the most popular activity among boaters. Anglers using vessels can be at risk. Unfortunately, anglers capsizing or falling overboard are common fatal boating accidents.

- Anglers who use vessels to fish need to think of themselves first as vessel operators. If you fish and boat, you should:
  - Know and follow all safe boating laws and requirements.
  - Pay attention to the capacity plate and don't overload your vessel.
  - Wear a life jacket (PFD) especially when the water is cold or when fishing alone or in remote areas. (A PFD is required in most competitive fishing tournaments.)
  - Recycle or toss used fishing line into receptacles on shore and not into the water or onto shorelines. Fishing line is not biodegradable and is dangerous to wildlife and propellers.
  - Take care of your fishing boat just like you do your fishing equipment.
- Vessel operators who are boating in the vicinity of fishing boats should:
  - Slow down when approaching fishing boats or give them a wide berth.
  - Never run over anglers' lines. Be aware anglers may have lines out to the sides of their boats or trolling behind.
  - Never disturb fishing boats by making a large wake. An angler at anchor could be swamped by another vessel's cruising wake.

Hunting

Many hunters use vessels for duck hunting or to get to their favorite hunting grounds. If you are using your vessel to hunt, you should:

- Understand that you are still responsible for obeying all boating laws and should follow all safe boating rules.
- Take extra precautions to avoid capsizing or swamping your vessel.
  - Be aware that small, flat-bottom vessels are prone to capsizing or swamping.
  - Keep weight low and distribute gear evenly in the vessel.
  - Do not exceed the vessel's capacity. Never crowd too many people or too much gear into one small hunting boat.
  - Take only well-trained dogs on board a small vessel. An excited dog could easily capsize a vessel. Keep the dog lying on the bottom, positioned in the center of the vessel.
  - Take precautions to avoid hypothermia in case you do capsize. See Chapter 5 for guidelines for preventing and treating this condition.
- Wear a life jacket (PFD) at all times while on the water. PFDs come in a variety of styles, including camouflage vests and float coats.
- Remember that cold water can be a killer. When hunting on cold water, dress in several layers under your PFD.
- Always check the weather and stay as close to the shore as possible.
- Don't fire shots or release arrows until the vessel is stopped, the motor is turned off and the vessel is secured or properly anchored. Always remain seated when shooting. Of course, you must possess a valid hunting license, tags and permits for whatever you are hunting.
- Be aware of laws regarding transport of firearms in a vessel.
- Firearms should always be unloaded with the safety on, and be secured in a gun case when they are being transported in a vessel.

Keep in mind...

If ill feelings between user groups become widespread, managing agencies may be forced to deal with the issue by closing down boating opportunities or by posting specific times for separate user groups. The best way to ensure better boating opportunities is for each boater to be safe, courteous, responsible and involved!

Remember...

If you fish or hunt from a boat, you are not only an angler or a hunter but also a boater.

Special precautions and responsibilities are required when hunting from a vessel.

Chapter Review Exercises

Chapter 1

1. What are the four length classes of vessels?
   i. _____
   ii. _____
   iii. _____
   iv. _____

2. Basic types of vessel hulls can be described as:
   __ a. Moving and non-moving.
   __ b. Planing and displacement.
   __ c. Rough and smooth.
   __ d. Narrow and wide.

3. Name four basic hull shapes:
   i. _____
   ii. _____
   iii. _____
   iv. _____

4. The port side of a vessel is the _____ side.

5. The stern of a vessel is the _____ of the vessel.

6. The three basic types of engines are:
   i. _____
   ii. _____
   iii. _____

7. Stern drive and inboard engines are:
   __ a. Marinized outboard engines.
   __ b. Specially designed and built engines.
   __ c. Automotive engines adapted for marine use.
   __ d. None of the above.

8. The U.S. Coast Guard considers personal watercraft to be _____.

9. Personal watercraft are not subject to the laws and requirements of other vessels.
   ___ True ___ False

10. An _____ is a device used to pump water in a desired direction under pressure.

Chapter 2

1. What information is displayed on the capacity plate of an outboard vessel?
   i. _____
   ii. _____

2. Give three things that should be included on your float plan before you embark on a cruise.
   i. _____
   ii. _____
   iii. _____

3. Give three things you should do before fueling your vessel.
   i. _____
   ii. _____
   iii. _____

4. A rule of thumb to prevent running out of fuel is _____ out, _____ in and _____ in reserve.

5. If the weight of the vessel and its engine is more than _____ of the recommended load capacity of the trailer, you should get the next larger trailer.

6. Tongue weight is the weight a loaded trailer _____ _____.

7. Tongue weight of a trailer should be _____ of the vessel and trailer weight.

8. Where should you prepare your vessel before launching it from the trailer?
   _____

9. Name three engine maintenance tips:
   i. _____
   ii. _____
   iii. _____

Chapter 3

1. If the wind is holding your vessel to the dock, you should always cast off the _____ first when leaving the dock.

2. The _____ is the vessel which is required to take early and substantial action to avoid a collision by stopping, slowing down or changing course.

3. If you see a red and white light ahead when boating at night, you should maintain course and speed.
   ___ True ___ False

4. If while boating at night you see only a green light, you know you are encountering a _____ and you must _____.

5. If you are overtaking another vessel, you are the stand-on vessel.
   ___ True ___ False

6. If you are driving a powerboat or PWC and meet another powerboat or PWC head-on, you should keep to the _____.

7 The stand-on vessel is the vessel that must maintain _____ unless _____ _____ .

8. _____ are the "traffic signals" or sign posts which guide boaters safely along their course.

9. The phrase "R-_____ R-_____ R-_____" reminds vessels of the correct course in the lateral system of U.S. Aids to Navigation.

10. This buoy marks the edge of the channel on a boater's _____ side when entering from the open sea or heading upstream.

11. This regulatory marker indicates _____ .

12. This regulatory marker indicates areas that are _____ to vessels.

13. A good rule of thumb is that the anchor line should be at least _____ times the depth of the water.

14. You should never anchor from the _____ of the vessel as that can make the vessel unstable.

15. Personal watercraft operators are subject to the same rules and regulations as any other vessel operator.
___ True ___ False

16. To maintain steering control of a PWC you must never allow the engine to _____ or _____.

17. As a courtesy to other boaters and people on shore, PWC operators should _____ their operating area.

18. The most common complaints boaters have against PWC operators are _____ and _____.

19. Name a safety device that shuts the engine off if the operator is thrown from the proper operating position.
_____

Chapter 4

1. The _____ is a number assigned and imprinted by the vessel manufacturer and is unique to your vessel.

2. Allowing passengers to ride on the _____ or _____ while underway is reckless operation.

3. If your blood alcohol content (BAC) is above the legal limit, it is illegal to _____ a vessel.

4. Name the five types of PFDs.
i. _____
ii. _____
iii. _____
iv. _____
v. _____

5. These Type ____ PFDs are _____ devices and most states require at least one of these to be on board vessels of length 16 ft. or longer.

6. In order for a PFD to be legal, it must be _____ _____-approved, in _____ condition, and _____ accessible.

7. PWC operators, no matter what age, must wear an approved _____ whenever underway.

8. Powerboats less than 26 feet long that require a fire extinguisher must have a Type _____ extinguisher on board.

9. Name three conditions that require you to carry fire extinguisher(s) on board your powerboat.
i. _____
ii. _____
iii. _____

10. It is recommended that you wait at least _____ minutes after turning on your vessel's blower (if so equipped), before starting your engine.

11. For an 18 foot powerboat, required navigation lights include a red light on the _____; a green light on the _____; and _____ _____ .

12. A 16 foot canoe away from dock after dark must have on hand at least a _____ or _____ _____.

13. Name two visual distress signals (VDSs) for use after dark.
i. _____
ii. _____

14. Describe the appearance of the "diver down" flag.
_____

15. If an observer is on board when pulling a skier behind a PWC, the PWC should be rated to carry at least _____ people.

16. Water-skier(s) may be towed at night with proper lighting.
___ True ___ False

17. It is illegal to discharge _____ , _____ , or _____ into federal or state waters

18. You must report any accident you are involved in if it results in _____ , _____ , or _____ _____ .

Chapter 5

1. In a typical boating fatality PFDs are _____ , but not _____ .

2. Name three boating stressors that make you tire more rapidly when on the water.
   i. _____
   ii. _____
   iii. _____

3. To prevent dehydration while on the water, you should drink at least _____ .

4. One _____ of the amount of alcohol that makes a person legally intoxicated on the road can be enough to make someone equally intoxicated when on the water.

5. The use of alcohol is involved in about _____ of all boating accidents nationwide.

6. If you capsize, immediately swim to shore to ensure your safety.
   ___ True ___ False

7. An easy way to remember priorities for rescuing someone who has fallen into the water is _____, _____, _____, and _____!

8. What are four things you should do if a fire erupts?
   i. _____
   ii. _____
   iii. _____
   iv. _____

9. Bleeding usually can be controlled by applying _____ _____ to the wound.

10. The condition called _____ is when the body loses heat faster than it can produce it.

11. The position you should assume if trapped in cold water, "HELP", stands for
    H - _____
    E - _____
    L - _____
    P - _____

Chapter 6

1. As the operator of a vessel, you are responsible to ensure that your passengers understand _____ and _____.

2. As the owner of a PWC, you can be held liable for the damage caused by your PWC no matter who is operating it.
   ___ True ___ False

3. Before allowing anyone to operate your PWC, you should remind them that power is _____ _____.

4. To protect the environment, you should practice the three "R's" — R _____ , R _____ , and R _____ .

5. Identify the following water-skiing commands:

i. _____

ii. _____

iii. _____

iv. _____

6. When picking up a skier, always keep them in view and on the _____ side of the vessel.

7. When towing a sailboat under power lines and bridges, you need to be aware of the _____ _____.

8. Wet suits are advisable when water or air temperatures drop below _____ Fahrenheit.

9. If you capsize in a canoe, stay on the _____ side of the canoe.

10. Hunters who use vessels to get to their hunting spot should always wear their _____.

NOTES