

the
HANDBOOK!
OF
PERSONAL WATERCRAFT
BASICS





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the **HANDBOOK!**

OF PERSONAL WATERCRAFT BASICS



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Table of Contents

PWC **BASICS**

Before Going Out

What Is a Personal Watercraft?	3
Types of PWCs	3
The Parts of a PWC	4
What To Do Before You Leave	5
PWC Capacity	5
Filing a Float Plan	5
Fueling a PWC	6
Preventing Theft	7
Trailing Your PWC Safely	7
Preventive Maintenance	9
Storage	9

PWC Operation

Steering and Stopping a PWC	10
Ignition Safety Switches and Self-Circling PWCs	11
Fuel Selector Switch on a PWC	11
Making Emergency Repairs	11
Taking Precautions While Riding	12
Reboarding a Capsized PWC	14
PWC Courtesy	14
Other Considerations	16
Teaching New Riders	16

On The Water

Encountering Other Vessels	18
Navigation Rules	19
Nighttime Navigation	20
U.S. Aids to Navigation System (ATON)	20
Weather Emergencies	24
Other Boating Emergencies	25
Fatigue	26
Environmental Considerations	26
Dams	27

It's the **LAW!**

Before Going Out

Registering Your PWC	28
Hull Identification Number (HIN)	29
Who May Operate a PWC	29

Required Equipment

Personal Flotation Devices (PFDs)	30
Riding Gear	32
Navigation Lights	33
Backfire Flame Arrestors	33
Mufflers	33
Sound-Producing Devices	34
Visual Distress Signals (VDSs)	34
Fire Extinguishers	36
Ventilation	36
Other Equipment and Local Regulations	37

On the Water

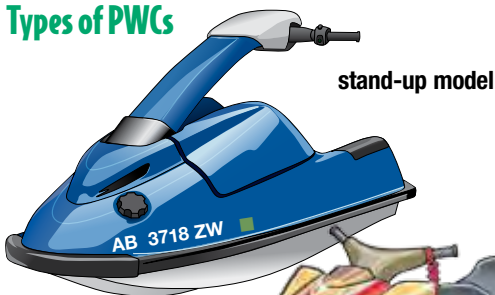
Unlawful Operation of a PWC	38
Requirements Specific to PWCs	39
Towing a Person With a PWC Legally	40
Obstructing Navigation	41
Homeland Security Restrictions	41
Alcohol and Drugs	42
Boating Accidents	43
Enforcement	43
Discharge of Oil and Other Hazardous Substances	44
Discharge of Trash	44
Aquatic Nuisance Species	44
Required Equipment Checklist	45

Before Going Out

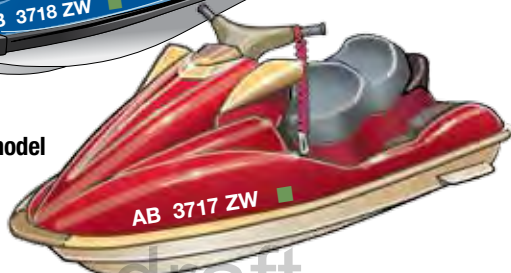
What Is a Personal Watercraft?

- ◆ A personal watercraft (PWC) is a small vessel that:
 - Uses an inboard jet drive as its primary source of propulsion.
 - Is designed to be operated by a person or persons sitting, standing, or kneeling on the vessel rather than inside the vessel.
- ◆ Due to the inboard jet drive design, a PWC does not have a propeller or rudder on the outside of the hull. This means the operator can fall overboard and reboard the PWC without encountering the same risks associated with a boat and its external parts.
- ◆ The U.S. Coast Guard includes PWCs in the group of inboard vessels less than 16 feet in length (Class A).
- ◆ *PWCs are subject to all of the same laws and requirements of any other vessel plus a few laws specific to PWCs.*

Types of PWCs



sit-down model



The Parts of a PWC

Every operator should know the terms for the different parts of a PWC.

steering control:

Means of controlling the steering nozzle

safety lanyard:

Short cord for attaching the ignition safety switch to the operator's wrist or personal flotation device (life jacket)

starboard:

Right side of a vessel

hull: Body of a vessel

port: Left side of a vessel

stern: Rear of a vessel

bow:

Front of a vessel

steering nozzle

draft

impeller

drive shaft

jet pump intake grate

speedometer

fuel cap

throttle lever

safety switch

safety lanyard

What To Do Before You Leave

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.
- ◆ 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.

PWC Capacity

A PWC's capacity is the maximum number of people and/or weight the PWC can carry safely in good weather.

- ◆ Always follow the recommended capacity in the owner's manual.
- ◆ Never exceed the capacity recommendations.

Filing a Float Plan

Before going out on a vessel, it is always a good idea to leave a float plan with a relative or friend, or at least with a local marina. A float plan should:

- ◆ Describe the vessel, including its registration number.
- ◆ State where you are going, the detailed route, your planned departure time, and your expected return time.
- ◆ Give the name, address, and telephone number of each person on board and an emergency contact.

Fueling a PWC

Serious accidents can occur when fueling a PWC. Spilled or leaked fuel can ignite and explode, especially in an enclosed space. Never fuel at night unless it is an emergency. If you must refuel after dark, use only electric lights. Try to refuel away from the water or on a commercial fueling ramp.

◆ Before beginning to fuel:

- Dock the PWC securely and ask any passengers to exit.
- Do not allow anyone to smoke or strike a match.
- Check the entire fuel system for leaks and make sure fuel system connections are tight.
- Turn off the engine.
- Shut off all fuel valves.

◆ While filling the fuel tank:

- Keep the nozzle of the fuel-pump hose in contact with the tank opening to prevent producing a static spark.
- Fill the tank slowly.
- Avoid spilling fuel into the PWC's bilge or the water.
- Do not tip the PWC in order to fill it all the way up. Leave space for the fuel to expand. If the tank is over-filled, the fuel may expand and spill into the water.

◆ After fueling:

- Wipe up any spilled fuel.
- 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.



Make sure you have enough fuel before casting off. Operating at two-thirds throttle instead of full throttle will conserve fuel. Follow this rule:

- ◆ One-third to get out
- ◆ One-third to get back
- ◆ One-third in reserve for emergencies

Preventing Theft

Protect your PWC against theft.

- ◆ If the PWC is on a trailer, lock it to the trailer.
- ◆ Take off one trailer wheel, and store it in the trunk of your car.
- ◆ Secure the PWC and trailer to a fixed object with a good quality chain and lock. If moored, secure the PWC to the dock with a steel cable and lock.
- ◆ If you carry your PWC in a pickup, lock it to any equipment that would be hard for a thief to move.
- ◆ Don't leave the ignition keys in your PWC.
- ◆ Don't leave your PWC at unattended docks or beaches.
- ◆ If you are with a group, chain your PWC to others.
- ◆ Register your PWC.

Trailer Your PWC Safely

◆ Before leaving home:

- Properly secure the PWC with several tie-down straps and/or safety lines to prevent it from shifting.
- Crisscross the trailer's safety chains when attaching them to the towing vehicle.
- Make sure the trailer brakes and lights are working.



◆ On the road:

- Make wider turns at corners and curves.
- Allow extra time and distance for stopping and for passing other vehicles.

Pre-Departure Checklist

- ✓ Check the weather forecast for the area and time frame during which you will be riding your PWC.
- ✓ Make sure that the steering and throttle controls operate properly.
- ✓ Check the jet pump cover and intake grate to make sure they are secure. Clean the intake grate if needed.
- ✓ Ventilate the engine compartment by opening the engine cover. Keep it open for several minutes.
- ✓ 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 the fuel, oil, and coolant levels. Refill if necessary.
- ✓ Check to be sure you have a fully charged engine battery. Check cable connections to ensure they are tight.
- ✓ Inspect the hull for damage.
- ✓ Check that the engine cover and storage compartment latches are secure.
- ✓ If your PWC is equipped with lights or brakes, make sure they are working properly.
- ✓ Be sure you have a fully charged fire extinguisher.
- ✓ Make sure the ignition safety switch and wrist lanyard are in good order.
- ✓ Make sure you have the required number of personal flotation devices (life jackets), and check that they are in good condition.
- ✓ Take along a map and a first-aid kit.
- ✓ Check your trailer lights, wheel bearings, and tires. Secure your PWC to the trailer.
- ✓ Leave a float plan with a reliable friend or relative.

Preventive Maintenance

- ◆ Wash the hull with fresh water and an environmentally safe, non-phosphate detergent. Avoid using anything abrasive—it could damage the gel coat. If needed, patch the hull as specified by the PWC's manufacturer.
- ◆ Frequently inspect the electrical systems (e.g., starter and engine gauge connections) to ensure there is no potential for electrical spark. Keep the engine tuned properly.
- ◆ Check the fluid level in the battery, and charge the battery if necessary. See that the terminal connections are tight, clean, and free from corrosion.
- ◆ Keep the exterior of the engine as clean as possible. Grease and oil buildup absorbs moisture which conducts electricity.
- ◆ Inspect all cables for proper operation. Lubricate as specified in the owner's manual.
- ◆ Check the spark plugs. Clean or replace as needed.
- ◆ Inspect the engine for anything that shows signs of wear or requires tightening, such as hoses, belts, and bolts.
- ◆ If the PWC is operated in salt water or in water containing sewage or other contaminants, flush the exhaust system with fresh water.

Storage

Proper storage can help prevent water damage, mildew, and other problems. At the end of the season:

- ◆ Clean your PWC thoroughly.
- ◆ Check, replace, and/or repair worn parts.
- ◆ Lubricate, flush, and clean all parts.
- ◆ Be sure that the steering controls are working properly.
- ◆ Check that the throttle and choke cables operate correctly.
- ◆ Inspect all rubber hoses for weathering or cracking, and be sure to tighten their connections.
- ◆ Check the antifreeze. Replace if needed.
- ◆ Cover the PWC with a breathable tarp.

Steering and Stopping a PWC

steering control



steering nozzle

- ◆ PWCs are propelled by drawing water into a pump and then forcing it out under pressure through a steering nozzle at the back of the unit. This “jet” of pressurized water is directed by the steering control—when the steering control is turned, the steering nozzle turns in the same direction. For example, if the steering control is turned right, the nozzle turns right and the jet of water pushes the back of the vessel to the left, which causes the PWC to turn right.

Remember—no power means no steering control ...

Most PWCs and other jet-drive vessels must have power in order to maintain control. *If you allow the engine on these PWCs 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 engine was shut off, no matter which way the steering control is turned. New PWCs allow for off-throttle steering.

- ◆ **Most PWCs do not have brakes.** 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. Even PWCs that have a braking system do not stop immediately.

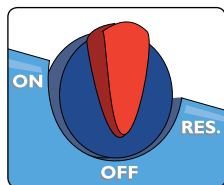
Ignition Safety Switches and Self-Circling PWCs

- ◆ Most PWCs come equipped with an emergency ignition safety switch.
 - A lanyard is attached to the safety switch and the operator's wrist or PFD. The safety switch shuts off the engine if the operator falls off the PWC. If your vessel is not equipped with an ignition safety switch, you should have one installed.
 - If a PWC has an ignition safety switch, most states require the operator to attach the lanyard.
- ◆ Your PWC may have a self-circling feature. If the operator is thrown from the PWC, the engine idles while the PWC slowly circles so that the operator can reboard. Be sure the idle speed is set correctly.

Fuel Selector Switch on a PWC

Many PWCs have a fuel selector switch. This switch can help you avoid becoming stranded without fuel.

- ◆ Use the "Off" position when the PWC's engine is turned off.
- ◆ Use the "On" position while you are underway.
- ◆ Use the "Reserve" position if you run out of fuel while underway. Switch back to "On" after refueling.



Making Emergency Repairs

Learn about the engine and propulsion system of your PWC so that you can react properly when faced with a malfunction. Most PWCs have some storage for tools and supplies. It is wise to carry some basic items in case of a breakdown. Suggested items are:

- ◆ Extra spark plugs and a wrench to install them
- ◆ Strong tape to make temporary repairs
- ◆ Anchor
- ◆ Paddle
- ◆ Length of rope to tow the PWC
- ◆ Piece of brightly colored cloth (red, orange, yellow, etc.) for signaling

Taking Precautions While Riding

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.

- ◆ Keep a constant lookout ahead of you for debris, rocks, and all traffic (swimmers, skiers, vessels, etc.) in your area, including what may be coming up from behind or beside you.
- ◆ Do not approach objects head on. Approach at an angle.
- ◆ To avoid obstacles, keep your power on and turn the steering control.
- ◆ Follow the traffic pattern. Many waterways have heavy traffic and special traffic patterns.
- ◆ Watch for canoes, kayaks, and other paddlecraft, and stay a reasonable distance away from them so that your PWC's wake will not capsize them. PWC operators are responsible for the damage caused by their wakes.
- ◆ Do not pass between a fishing boat and shore because this is generally where an angler's lines and nets will be. Slow down and maintain your distance when passing.
- ◆ Never pass between a skier and a boat.
- ◆ 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.
- ◆ Make sure that any passenger on a PWC is able to hold on securely to the person in front of him or her or to the handholds, while keeping both feet firmly on the footrests. Children who are too small to do this should not ride.
- ◆ Never allow a passenger to sit in front of the PWC operator.



- ◆ Follow the same navigation rules that apply to motorboats or any other power-driven vessel, especially right-of-way. PWC collisions are more likely to be deadly for the operator and any passengers because they ride on top of the PWC instead of down inside it.
- ◆ Know your limits, and ride according to your abilities.

Avoiding Jet Stream Injuries

The jet of water that comes out the steering nozzle at the back of the PWC is extremely dangerous. The jet stream is powerful enough to force water into a person's body cavities, causing serious internal injuries, permanent disability, or death. To avoid jet stream injuries:

- ◆ Connect the ignition safety switch lanyard to the operator's wrist or PFD. If the operator ends up in the water, shutting off the engine stops the jet stream.
- ◆ Keep everyone clear of the steering nozzle unless the PWC is shut off.
- ◆ Have everyone wear a wetsuit or other protective clothing that will keep the jet stream from entering body cavities.



Reboarding a Capsized PWC

After a fall, the PWC could be overturned completely. You should know how to right the PWC and how to reboard from the rear of the craft.

- ◆ Look for the manufacturer's decal at the rear or bottom of the craft that indicates the direction to roll your PWC to return it to an upright position.
 - If no decal exists, check your owner's manual or ask the dealer.
 - If you roll it over the wrong way, you could damage your PWC.
- ◆ Practice reboarding with someone else around to make sure you can handle it alone.
 - Don't ride your PWC if you are very tired because reboarding would be difficult.
 - Avoid riding where there are strong currents or winds, which could hamper your reboarding efforts.

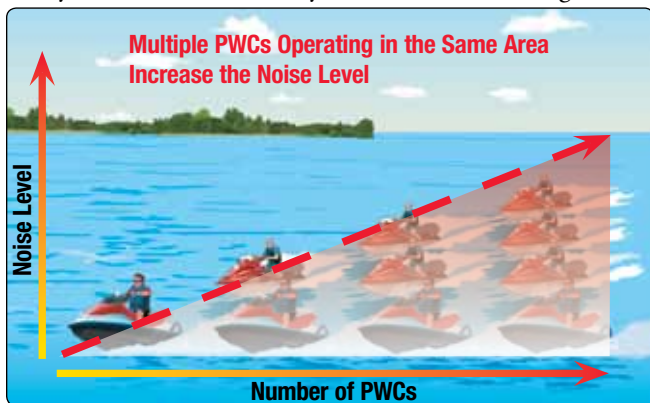


PWC Courtesy

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

- ◆ Do not jump the wake of a passing boat or ride too close to another PWC or boat. This is illegal in many states.
 - The boat making the wake may block the PWC operator's view of oncoming traffic and also conceal the PWC operator from approaching vessels.
 - Wake jumping and riding too close to other vessels are common complaints about PWC operators.

- ◆ Do not attempt to spray others with the wake of your PWC. Not only is this discourteous, but it is also dangerous and reckless operation.
- ◆ Do not make excessive noise with your PWC. This often makes PWCs unwelcome. Here are some tips.
 - Vary your operating area, and do not keep repeating the same maneuver.
 - Avoid gathering with other PWC operators near shore.
 - Avoid making excessive noise near residential and camping areas, particularly early in the morning.
 - Avoid maneuvers that cause the engine exhaust to lift out of the water because that 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.
- ◆ Respect the rights of shoreline property owners. Generally, property rights extend to the water's edge. The freedom to use the water does not include the right to use private lands. You must have permission from the owner to launch or moor a boat or PWC on private property.

Other Considerations

- ◆ Wear a *personal flotation device (life jacket)*. 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 most states require that everyone on board a PWC wear a *PFD (life jacket)*.
- ◆ Keep hands, feet, loose clothing, and hair away from the pump intake area. Before cleaning debris from the pump intake, be sure to shut off the engine.
- ◆ Never put anything into or near the pump intake grate while the engine is running.

Teaching New Riders

Before allowing others to operate your PWC, make sure they understand the rules of the road and your state's boating regulations. They need to know that they have the same responsibilities as any other vessel operator, including obeying the ***Navigation Rules***. The owner of the PWC is liable for any damage caused by the PWC, no matter who is driving at the time. In addition:

- ◆ Make sure that anyone you allow to operate your PWC meets the minimum age and education requirements for PWC operation in your state and on the local waterway.
- ◆ Never let someone too young or too inexperienced operate a PWC alone.
- ◆ Be sure the rider is wearing a life jacket.
- ◆ Make sure that the operator understands how to use the ignition safety switch and attaches the lanyard to his or her person or PFD before starting the engine. If the PWC has a self-circling feature, explain how it works.
- ◆ Show new operators how to board, start, stop, and reboard the PWC while on shore or in shallow water.

- ◆ Explain how to steer and control the PWC. Tell all new operators and remind experienced operators that ***power is required for steering control!***
- ◆ Have beginning riders practice in an area with few boats and swimmers. Tell them to stay clear of other PWCs, boats, or persons in the water.
- ◆ Explain where the vessel should and should not be ridden.
- ◆ Explain the “slow, no wake” speed marker.
- ◆ Emphasize the importance of looking around before turning to avoid steering directly into the path of another boat.
- ◆ Be sure that beginners return to shore often to rest.



Encountering Other Vessels

Safe navigation on waterways is everyone's responsibility. All operators are equally responsible for taking action necessary to avoid collisions.

- ◆ Even though no vessel has the “right-of-way” over another vessel, there are some rules that every operator should follow when encountering other vessels. It is the responsibility of both operators to take the action needed to avoid a collision.
- ◆ When operating a PWC, 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 another or laying cable, or one constrained by its draft, such as a large ship in a channel
 - A vessel engaged in commercial fishing
 - A sailboat under sail unless it is overtaking

To prevent collisions, every operator should follow the three basic rules of navigation.

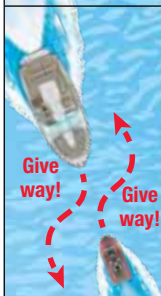
- ◆ Practice good seamanship.
- ◆ Keep a sharp lookout.
- ◆ Maintain a safe speed and distance.

Navigation Rules

There are two terms that help explain these rules.

- ◆ **Stand-on vessel:** The vessel that should maintain its course and speed
- ◆ **Give-way vessel:** The vessel that must take early and substantial action to avoid collision by stopping, slowing down, or changing course

Power vs. Power



Meeting Head-On

Power vs. Power: Neither vessel is the stand-on vessel. Both vessels should keep to the starboard (right).

Power vs. Sail: The PWC is the give-way vessel. The sailboat is the stand-on vessel.

Crossing Situations

Power vs. Power: The vessel on the operator's port (left) side is the give-way vessel. The vessel on the operator's starboard (right) side is the stand-on vessel.

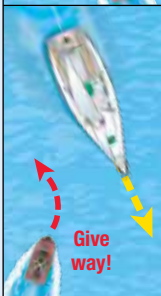
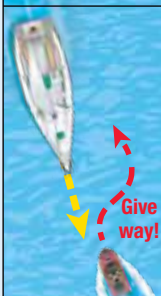
Power vs. Sail: The PWC is the give-way vessel. The sailboat is the stand-on vessel.

Overtaking

Power vs. Power: The vessel that is overtaking another vessel is the give-way vessel. The vessel being overtaken is the stand-on vessel.

Power vs. Sail: The vessel that is overtaking another vessel is the give-way vessel. The vessel being overtaken is the stand-on vessel.

Power vs. Sail



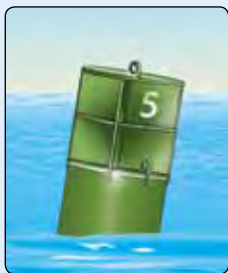
Nighttime Navigation

Most states prohibit PWC operation at night (from sunset to sunrise). In some states, however, a PWC may be operated at night if it is equipped with the required navigation lights. Check your state laws, and see “Navigation Lights” on page 33. If your state allows you to operate a PWC at night, be on the lookout for the lights of other vessels when boating at night.

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 PWC operator, you will need to know the lateral navigation markers and non-lateral markers of the U.S. Aids to Navigation System.

Lateral Markers



Cans

Green cylindrical-shaped buoys marked with odd numbers to show the left side of the channel as you enter from the open sea or head upstream

Nuns

Red cone-shaped buoys marked with even numbers to show the right side of the channel as you enter from the open sea or head upstream



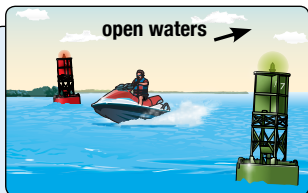
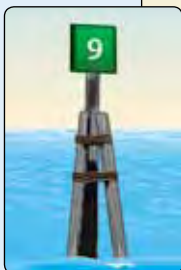


Lighted buoys

Lateral marker colors and numbers with a matching colored light

Daymarks

Permanently placed signs attached to structures, such as posts, in the water. Common daymarks are green squares (equivalent to cans) and red triangles (equivalent to nuns). They may be lighted also.

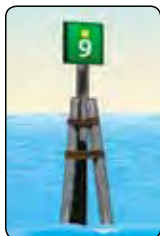


Red Right Returning

is a reminder of the correct course when returning from open waters or heading upstream.

Intracoastal Waterway System (ICW)

- ◆ The ICW is a chain of channels that provide an inland passage along the U.S. coast.
- ◆ When following the ICW from New Jersey to Brownsville, Texas, in a clockwise direction:
 - Any marker displaying a yellow triangle should be passed by keeping it on the starboard (right) side of your PWC.
 - Any marker displaying a yellow square should be passed by keeping it on the port (left) side of your PWC.



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 navigation markers on the Western Rivers System are not numbered. The numbers that are displayed below the daymark shape give distance from a river mouth.



Non-Lateral Markers



Information

Squares indicate where to find food, supplies, repairs, etc. and give directions and other information.



Controlled

Circles indicate a controlled area such as speed limit, no fishing or anchoring, ski only or no skiing, or "slow, no wake."



Exclusion

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



Danger

Diamonds warn of dangers such as rocks, shoals, construction, dams, or stumps. Always proceed with caution.

Other Non-Lateral Markers

Safe Water Markers are white with red vertical stripes and mark mid-channels or fairways. They may be passed on either side.



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

Mooring Buoy

Mooring buoys are white with a blue horizontal band and are found in marinas and other areas where vessels are allowed to anchor.



Weather Emergencies

Weather can change very rapidly and create unexpected situations for boat operators. Even meteorologists have trouble predicting rapid weather changes. You should always monitor weather developments. One way is to tune a VHF radio to the frequencies listed here.

VHF Frequencies Broadcasting NOAA Weather Reports

162.400 MHz

162.450 MHz

162.500 MHz

162.550 MHz

162.425 MHz

162.475 MHz

162.525 MHz

Other Boating Emergencies

Hypothermia

◆ If you are boating in cold water:

- Dress in several layers of clothing under your life jacket or wear a wetsuit.
- Learn to recognize the symptoms of hypothermia. Symptoms begin with shivering and bluish lips and nails, and progress to a coma and, ultimately, death.

◆ To reduce the effects of hypothermia:

- Put on a life jacket if not wearing one. It helps you to float without excessive movement and insulates your body.
- Get as much of your body out of the water as possible.
- Don't take your clothes off unless necessary—clothes can help you float and provide insulation.
- Don't thrash or move about. You will lose body heat.
- Draw your knees to your chest and your arms to your sides. This will protect the major areas of heat loss.
- If others are in the water with you, huddle together with your arms around their shoulders.

Carbon Monoxide Poisoning

Carbon monoxide is an invisible, odorless, tasteless gas that can be deadly. To prevent carbon monoxide poisoning:

- Take extreme caution when running a PWC at a dock, in a boat house, or near other vessels. Make sure the area is fully ventilated.
- Whenever people are in the water close to the stern, turn off the engine.
- Do not allow anyone to stand behind a PWC when the engine is running.
- When boating, be careful running downwind as exhaust gases may blow back on board.

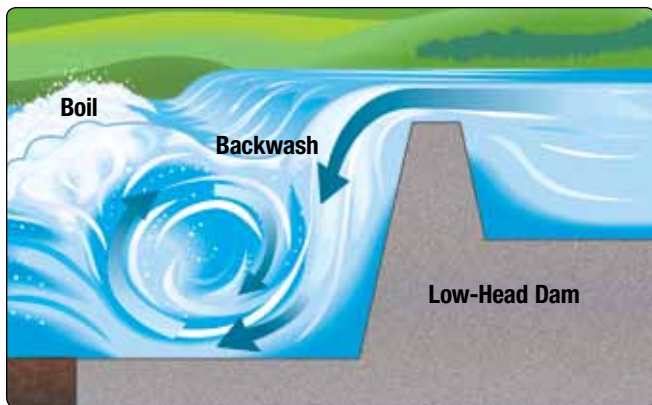
Fatigue

A long day on the water in any type of boat will cause fatigue. The motion, sound, and glare may reduce your reflexes to about the same level as someone who is legally intoxicated. Take breaks during the day, and slow down at the end of the day.

Environmental Considerations

- ◆ Make sure that the water you operate in is at least 30 inches deep. Riding in shallow water can cause bottom sediments or aquatic vegetation to be sucked into the pump, damaging your PWC and the environment.
- ◆ Avoid causing erosion by operating at slow speed and by not creating a wake 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 harm the aquatic environment. Fuel on land if possible.
- ◆ Avoid spreading aquatic nuisance species (see page 44).
- ◆ Never use your PWC to disturb, chase, or harass wildlife.





Dams

There are two types of dams. Both are dangerous above and below the dams.

◆ Low-Head Dams:

- They vary from about one foot to several feet in height.
- The upstream water circulation at the base can trap a boat against the dam and hold it there. This circulation can be strong enough to pull a person in a life jacket under the water.
- You should locate any low-head dams in your area and stay away from them.

◆ Conventional Dams:

- They are a more recognizable hazard than low-head dams.
- You should stay clear above and below the dam. Dangerous currents and turbulence can exist in both places.
- In many states, it is illegal to boat close to a dam.

Before Going Out



The U.S. Coast Guard is responsible for federal laws, equipment requirements, and safety recommendations for personal watercraft. The owner and/or operator of a PWC also may be required to follow specific state regulations.

Registering Your PWC

You must have a Certificate of Number (registration card) and a validation decal(s) to operate your PWC legally on public waters. Requirements for registration vary from state to state.

- ◆ If you move to a new state, the Certificate of Number usually is valid for 60 days.
- ◆ The Certificate of Number must be on board and available for inspection by an enforcement officer whenever the PWC is operated.
- ◆ The registration number and validation decal(s) must be displayed as follows.
 - Number must be painted, applied as a decal, or otherwise affixed to both sides of the bow.
 - Number must read from left to right on both sides of the bow.
 - Number must be in at least three-inch-high **BLOCK** letters.
 - Number's color must contrast with its background.
 - Letters must be separated from the numbers by a space or hyphen: **MC 3717 ZW** or **TX-4809-AB**.
 - No other numbers may be displayed on either side of the bow.

SOUTH CAROLINA DEPARTMENT OF NATURAL RESOURCES			
TITLE NUMBER	HULL I.D.		COUNTY
3717ZW	ABC 6789	B6 06	RICHLAND
MAKE		REGISTRATION NUMBER	
EXPIRATION DATE	LENGTH	YEAR	CONST. PWR. FUEL USE TYPE
RANGER 01/14	17' 08"	2006	SC 3717 ZW 4 1 1 2 1
JOHN DOE 100 NORTH ST. HOPKINS, SC 29061			

- In most states, the validation decals must be affixed on both sides of the bow, within six inches of the number.
- ◆ It is illegal to operate your PWC or allow others to operate it unless it is registered and numbered as required by your state's boating agency.



Validation Decal

PWCs are required to display the registration number and validation decals.

Hull Identification Number (HIN)

- ◆ The HIN is a unique 12-digit number assigned by the manufacturer.
- ◆ Hull Identification Numbers are engraved in the fiberglass or on a metal plate permanently attached to the transom.
- ◆ You should write down the HIN and keep it in a safe place in case you need it.

Who May Operate a PWC

- ◆ Many states have laws governing the age at which you may operate a PWC legally. Certain ages may be allowed to operate only if under adult supervision.
- ◆ In addition, many states require you to complete a boater education course before you may operate a PWC legally.
- ◆ *Check with your state's boating agency to find out what age, education, and licensing requirements apply to you.*

Required Equipment



When preparing to go out on a vessel, the operator must check that the legally required equipment is on board.

Personal Flotation Devices (PFDs)

- ◆ All PWCs must have at least one USCG-approved Type I, II, III, or V PFD (life jacket) for each person on board.
- ◆ Most states require each person on board a PWC to wear a USCG-approved Type I, II, III, or V PFD (life jacket).
- ◆ Most states require anyone being towed behind a PWC on water skis or other device to wear a USCG-approved PFD.
- ◆ Besides being USCG-approved, all PFDs must be:
 - *In good and serviceable condition.*
 - *Readily accessible*, which means you are able to put the PFD on quickly in an emergency.
 - *Of the proper size for the intended wearer.* Sizing for PFDs is based on body weight and chest size.
- ◆ *Check with your state's boating agency for the PFD laws in your state.*



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 rescue is likely. A Type II may not turn some unconscious wearers face up in the water.



TYPE III: Flotation Aids

These vests or full-sleeved jackets are good for calm waters when quick rescue is likely. They are not recommended for rough waters since they will not turn most unconscious persons face up.



TYPE IV: Throwable Devices

These cushions and ring buoys are designed to be thrown to someone in trouble. Since a Type IV is not designed to be worn, it is neither for rough waters nor for persons who are unable to hold onto it.



TYPE V: Special-Use Devices

These vests, deck suits, hybrid PFDs, and others are designed for specific activities such as windsurfing, kayaking, or water-skiing. *To be acceptable, Type V PFDs must be used in accordance with their label.*

Riding Gear

When riding a PWC, you should expect to get wet and even end up overboard at times. Therefore, in addition to wearing a life jacket, you and your passengers should consider wearing other riding gear also.

- ◆ **Eyewear:** Prevents water spray from affecting your vision. Choices include glasses, goggles, and other wraparound eye protection.
- ◆ **Footwear:** Helps you keep your footing and avoid scrapes and bruises.
- ◆ **Gloves:** Improve your grip on wet controls and provide protection during docking and loading.
- ◆ **Wetsuit:** May help prevent hypothermia if you capsize in cold water.
- ◆ **Helmet:** Protects your head from injuries, but also presents risks. Think about where and how you will be riding to decide if you need a helmet.



Navigation Lights

Some states let PWCs operate at night if they have navigation lights. If your state allows nighttime operation, the required navigation lights must be displayed between sunset and sunrise and during periods of restricted visibility.

- ◆ PWC operators should never leave shore without a waterproof flashlight. Even if you plan to return before dark, unforeseen developments might delay your return past nightfall.
- ◆ *Before going out on a PWC, check with your state's boating agency to find out your state laws about operating a PWC at night.*

Backfire Flame Arrestors

Backfire flame arrestors are designed to prevent the ignition of gasoline vapors in case the engine backfires.

- ◆ All PWCs must have an approved backfire flame arrestor on each carburetor.
- ◆ Backfire flame arrestors must be:
 - In good and serviceable condition *and ...*
 - U.S. Coast Guard-approved (must comply with SAE J-1928 or UL 1111 standards).
- ◆ Periodically clean the flame arrestor(s) and check for damage.

Mufflers

- ◆ All PWC engines must have a factory-installed muffler or exhaust water manifold for noise reduction or another effective muffling system. PWC operators may not hear sound signals or voices if the engine is not adequately muffled.
- ◆ Many states also have specific laws prohibiting PWCs from making excessive or disturbing levels of noise.
- ◆ *Check with your state's boating agency to find out the muffler and noise level restrictions that apply to your PWC.*

Sound-Producing Devices

- ◆ In periods of reduced visibility or whenever a vessel operator needs to signal his or her intentions or position, a sound-producing device is essential.
- ◆ When operating on federally controlled waters, PWCs are required to carry on board a whistle or horn or some other means to make an efficient sound signal audible for at least one-half mile.
- ◆ *Check with your state's boating agency to find out your state laws about sound-producing devices.*



Visual Distress Signals (VDSs)

- ◆ Visual Distress Signals (VDSs) allow PWC operators to signal for help in the event of an emergency.
- ◆ PWCs on federally controlled waters must be equipped with visual distress signals that are U.S. Coast Guard–approved, in serviceable condition, and readily accessible.
 - If your state allows nighttime operation, you must carry night signals when operating between sunset and sunrise.
 - PWCs are not required to carry day signals if they are less than 16 feet in length.
- ◆ If pyrotechnic VDSs are used, a minimum of three must be carried in the vessel. Also, pyrotechnic VDSs must be dated and may not be carried past their expiration date.
- ◆ It is prohibited to display visual distress signals while on the water unless assistance is required to prevent immediate or potential danger to persons on board.

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).

Pyrotechnic Visual Distress Signals

Orange Smoke—Handheld

Orange Smoke—Floating

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



Federally Controlled Waters

Vessels must observe federal requirements on these waters:

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



Arm Signal

Although this signal does not meet VDS equipment requirements, wave your arms to summon help if you do not have other distress signals on board.

Fire Extinguishers

- ◆ Extinguishers are classified by a letter and number symbol. The number indicates the relative size of the extinguisher. The letter indicates the type of fire it will extinguish. Type B fires are of flammable liquids like gasoline or oil.
- ◆ Most states require PWCs to have a Type B, USCG–approved fire extinguisher on board.
- ◆ Approved types of fire extinguishers are identified by the following marking on the label—“Marine Type USCG Approved”—followed by the type and size symbols and the approval number.
- ◆ A fire extinguisher has a charge indicator. Use the indicator to check the charge level of your fire extinguisher regularly. Replace it immediately if it is not fully charged.
 - If the charge indicator is a green button, depress the button. If the extinguisher is fully charged, the green button should pop back out immediately.
 - If the charge indicator is a gauge, the needle should be in the “full” range.
- ◆ PWC operators need to take special steps in case of fire. Because their fire extinguishers may not be easily accessible, they should simply swim away quickly and use another operator’s extinguisher. They should not open the engine compartment to put out the fire.
- ◆ *Check with your state’s boating agency to find out your state’s fire extinguisher requirements.*

Ventilation

PWCs do not have power ventilation systems. To reduce the chance of a life-threatening explosion, open the engine compartment and sniff for gasoline fumes before starting the engine.

Other Equipment and Local Regulations

State and local laws may require other equipment for your PWC and/or trailer. *Check with your state's boating agency for additional information.* For example, you may need to:

- ◆ License and/or register your trailer.
- ◆ Have certain equipment (brakes, lighting) for your trailer.

Diver-Down Flag

The **Navigation Rules** give specific requirements for recreational vessels engaged in diving, scuba diving, or snorkeling.

- ◆ During the day, the vessel must display a blue-and-white International Code Flag A (or Alfa flag) not less than 3.3 feet high to indicate that the vessel is restricted in its ability to maneuver.
- ◆ At night, red-over-white-over-red, 360-degree lights must be displayed.
- ◆ In addition, a red-and-white divers flag may be required by state or local law to mark a diver's location. The divers flag is a rectangular red flag with a white diagonal stripe.
- ◆ *Check with your state's boating agency for specific requirements for diver-down flags.*



Divers Flag



Alfa Flag

Skier-Down Flag

In some states, PWCs towing water-skiers or participating in a similar activity must display an orange or red skier-down flag whenever the towed person is in the water. *Check with your state's boating agency for requirements.*



Skier-Down Flag

A rectangular, international orange flag



The laws for PWC operation vary from state to state. *Before going out on a PWC, check with your state's boating agency to find out the laws for your state.*

Unlawful Operation of a PWC

Negligent and reckless operation of a PWC is prohibited by law. Reckless operation is defined as the failure to exercise the care necessary to prevent the endangerment of life, limb, or property of any other person. Reckless operation applies to both the operation of a PWC and the use of a device being towed behind a PWC.

- ◆ The U.S. Coast Guard may impose a civil penalty for negligent operation. Grossly negligent operation is a criminal offense.
- ◆ Examples of actions that may constitute reckless, negligent, or grossly negligent operation are:
 - Operating your PWC in restricted areas without regard for other boaters or persons in the water, posted speeds and wake restrictions, diver-down flags, etc.
 - Operating a PWC in a swimming area.
 - Operating a PWC while under the influence of alcohol and/or drugs.
 - Failing to regulate speed—that is, operating a PWC at speeds that may cause danger, injury, damage, or unnecessary inconvenience. You must obey all regulatory markers, including “idle speed” or “slow, no wake speed.”

“Idle speed” or “slow, no wake speed” is the slowest speed at which it is still possible to maintain steering and headway; your vessel should not produce a wake at this speed.

- Overloading a PWC beyond the manufacturer's recommended capacity.
 - Water-skiing in a hazardous manner.
 - Following directly behind a powerboat or another PWC.
 - Chasing, harassing, or disturbing wildlife with your PWC.
- ◆ *Check with your state's boating agency to find out:*
- *What is specifically defined as reckless or negligent operation*
 - *Speed and distance limitations in your state*

Requirements Specific to PWCs

Many states have laws such as the following.

- ◆ Each person riding on or being towed behind a PWC must *wear* a U.S. Coast Guard-approved Type I, II, III, or V life jacket (PFD). It is advisable and recommended for PWC riders to wear a PFD that is designed to withstand the impact of hitting the water at high speed.
- ◆ PWCs must be equipped with a fully operational self-circling device or a lanyard-type ignition safety switch. If the ignition safety switch is used, the lanyard must be attached to the person, clothing, or PFD of the operator.
- ◆ It is illegal to operate a PWC between sunset and sunrise.
- ◆ It is illegal to jump the wake of another vessel unnecessarily close to the other vessel or when visibility around the other vessel is restricted.

Towing a Person With a PWC Legally

PWC operators towing a person(s) on water skis, surfboard, or a similar device may have additional laws that must be obeyed. The specific laws for towing persons on water skis or other devices vary from state to state. Many states have laws similar to the following.

- ◆ Those being towed must *wear* a U.S. Coast Guard-approved Type I, II, III, or V PFD (life jacket).
- ◆ It is illegal for PWCs to tow persons on water skis, surfboards, or similar devices between sunset and sunrise.
- ◆ Every PWC towing a person(s) on water skis, a surfboard, or a similar device must have:
 - A person, in addition to the vessel operator, observing the towed person(s) ***or ...***
 - A wide-angle rearview mirror mounted such that the operator can observe the towed person(s) at all times.
- ◆ If an observer is on board when towing a person behind a PWC, the PWC must be rated for at least three people—the operator, the observer, and the retrieved skier.
- ◆ PWCs towing water-skiers or participating in a similar activity must operate in a careful and prudent manner.
 - Keep a reasonable distance from other vessels, people, and property.
 - Do not buzz or spray another vessel or swimmer.
- ◆ *Check with your state's boating agency to find out the laws for your state.*



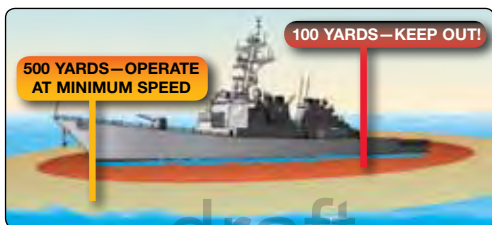
Obstructing Navigation

It is illegal to:

- ◆ Operate any PWC in such a way that it will interfere unnecessarily with the safe navigation of other vessels.
- ◆ Anchor a PWC in the traveled portion of a river or channel in a way that will prevent or interfere with any other vessel passing through the same area.
- ◆ Moor or attach a PWC 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.
- ◆ Obstruct a pier, wharf, boat ramp, or access to any facility.

Homeland Security Restrictions

- ◆ Do not approach within 100 yards and slow to minimum speed within 500 yards of any U.S. Naval vessel. If you need to pass within 100 yards of a U.S. Naval vessel for safe passage, you must contact the vessel or the USCG escort vessel on VHF-FM channel 16.
- ◆ Observe and avoid all security zones. Avoid commercial port operation areas, especially those that involve military, cruise-line, or petroleum facilities.
- ◆ Observe and avoid other restricted areas near dams, power plants, etc. Do not stop or anchor beneath bridges or in the channel.
- ◆ Keep a sharp eye out for anything out of the ordinary and report it to the closest authority.



Alcohol and Drugs

Alcohol and drugs cause impaired balance, blurred vision, poor coordination, impaired judgment, and slower reaction times. Alcohol is a major contributor to boating accidents and fatalities.

- ◆ Operating a vessel while intoxicated became a specific federal offense beginning on January 13, 1988.
- ◆ For operators of recreational vessels being used only for pleasure, some states consider you to be intoxicated if you have a blood alcohol concentration (BAC) of 0.08% or higher. Other states use a different level.
- ◆ Violators are subject to a civil penalty not to exceed \$1,000 or a criminal penalty not to exceed \$5,000, imprisonment for one year, or both a fine and imprisonment.
- ◆ In most states, when you operate a vessel on state waters, you have consented to testing for alcohol and drugs if requested by a law enforcement officer.
- ◆ *Check with your state's boating agency for:*
 - *The blood alcohol concentration (BAC) at which a person is considered to be intoxicated*
 - *Other laws governing boating while intoxicated*



Boating Accidents

- ◆ 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 *and ...*
 - Give, in writing, his or her name, address, and vessel identification to anyone injured and to the owner of any property damaged by the accident.
- ◆ A vessel operator involved in a boating accident must immediately report the accident to the state enforcement authority if the accident caused:
 - Death of any person *or ...*
 - Disappearance of any person under circumstances that indicate the possibility of death or injury.
- ◆ Accidents involving more than \$2,000 damage or complete loss of a vessel should be reported within 10 days. (Note: Many states require accidents to be reported for damage less than \$2,000.)
- ◆ *Check with your state's boating agency to find out the specific accident reporting requirements for your state.*

Enforcement

The U.S. Coast Guard, federal, state, and local law enforcement officers and all other peace officers enforce boating laws.

- ◆ Officers have the authority to stop and board your vessel in order to check that you are complying with state and federal laws.
- ◆ It is illegal to refuse to follow the directive of an enforcement officer. An operator who has received a signal from an enforcement officer must stop.

Discharge of Oil and Other Hazardous Substances

- ◆ You are not allowed to discharge oil or hazardous substances into the water.
- ◆ You must dispose of oil waste at an approved reception facility.
- ◆ If your PWC discharges oil or hazardous substances into the water, immediately call the U.S. Coast Guard at **1-800-424-8802**. Also notify the state agency.

Discharge of Trash

- ◆ It is illegal to dump refuse, garbage, or plastics into any state or federally controlled waters.
- ◆ You must store trash in a container while on board and place it in a proper receptacle after returning to shore.

Aquatic Nuisance Species

Introducing non-native species into any waters can upset the balance of the ecosystem, harming the environment. Aquatic nuisance species, such as zebra mussels, quagga mussels, milfoil, and hydrilla, are most often spread between waterways by hitching a ride on vessels and trailers. When transplanted into new waters, these organisms proliferate, displacing native species and damaging the water resource.



To prevent spreading aquatic nuisance species:

- ◆ Inspect your PWC and trailer, and remove any plants and animals you see before leaving the area.
- ◆ Drain your motor and bilge on land before leaving the area.
- ◆ Rinse your PWC, trailer, and equipment.
- ◆ Air-dry your PWC and equipment for as long as possible.



Required Equipment Checklist

This is a sample checklist for your PWC.
*Check your state's boating laws to learn about
the required equipment for your PWC.*

Boater Education Certificate On Board	✓
Certificate of Number On Board	✓
Validation Decals Displayed	✓
PFDs: Type I, II, III, or V	✓
Type B-I Fire Extinguisher	✓
Ignition Safety Switch	✓
Backfire Flame Arrestor	✓
Muffler	✓
Horn, Whistle, or Other Sound-Producing Device	✓
Nighttime Visual Distress Signals	✓ ¹
Navigation Lights	✓ ¹

1. Required if your state allows PWCs to be operated between sunset and sunrise.



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