

APPENDIX B

U.S. Coast Guard Equipment Requirements, Navigation Rules, and Safety/Survival Tips

U.S. Coast Guard
Equipment Requirements:
April 19, 2004

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Federal Requirements and Safety Tips for Recreational Boats

Personal Flotation Devices (PFD)

All recreational boats must carry one wearable PFD (Type I, II, III or Type V PFD) for each person aboard. A Type V PFD provides performance of either a Type I, II, or III PFD (as marked on its label) and must be used according to the label requirements. Any boat 16ft and longer (except canoes and kayaks) must also carry one throwable PFD (Type IV PFD).

PFDs must be

- Coast Guard approved,
- in good and serviceable condition, and
- the appropriate size for the intended user.

Accessibility

- Wearable PFDs must be readily accessible.
- You must be able to put them on in a reasonable amount of time in an emergency (vessel sinking, on fire, etc.).
- They should not be stowed in plastic bags, in locked or closed compartments or have other gear stowed on top of them.
- The best PFD is the one you will wear.
- Though not required, a PFD should be worn at all times when the vessel is underway. A wearable PFD can save your life, but only if you wear it.
- Throwable devices must be immediately available for use.

Inflatable PFDs

- Inflatable PFDs may be more comfortable to wear.
- The best PFD is the one you will wear.
- Inflatable PFDs require the user to pay careful attention to the condition of the device.
- Inflatable PFDs must have a full cylinder and all status indicators on the inflator must be green, or the device is NOT serviceable, and does NOT satisfy the requirement to carry PFDs.
- Coast Guard Approved Inflatable PFD's are authorized for use on recreational boats by person at least 16 years of

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age.

Child PFD Requirements

Some states require that children wear PFDs

- applies to children of specific ages
- applies to certain sizes of boats
- applies to specific boating operations

Check with your state boating safety officials.

Child PFD approvals are based on the child's weight. Check the "User Weight" on the label, or the approval statement that will read something like "Approved for use on recreational boats and uninspected commercial vessels not carrying passengers for hire, by persons weighing ___ lbs". They can be marked "less than 30", "30 to 50", "less than 50", or "50 to 90".

PFD requirements for certain boating activities under state laws

The Coast Guard recommends and many states require wearing PFDs:

- For water skiing and other towed activities (use a PFD marked for water skiing).
- While operating personal watercraft (PWC) (use a PFD marked for water skiing or PWC use).
- During white water boating activities.
- While sailboarding (under Federal law, sailboards are not "boats").

Check with your state boating safety officials.

Federal law does not require PFDs on racing shells, rowing sculls, racing canoes, and racing kayaks; state laws vary. Check with your state boating safety officials.

If you are boating in an area under the jurisdiction of the Army Corps of Engineers, or a federal, state, or local park authority, other rules may apply.

PFD Flotation

There are three basic kinds of PFD flotation in the five types of PFDs with the following characteristics:

Inherently Buoyant (primarily Foam)

- The most reliable
- Adult, Youth, Child, and Infant sizes
- For swimmers & non-swimmers
- Wearable & throwable styles

- Some designed for water sports

Minimum Buoyancy		
Wearable Size	Type	Inherent Buoyancy (Foam)
Adult	I	22 lb.
	II & III	15.5 lb.
	V	15.5 to 22 lb.
Youth	II & III	11 lb.
	V	11 to 15.5 lb.
Child and Infant	II	7 lb.
Throwable: Cushion Ring Buoy	IV	20 lb.
		16.5 & 32 lb.

Inflatable

- The most compact
- Sizes only for adults
- Only recommended for swimmers
- Wearable styles only
- Some with the best in-water performance

Minimum Buoyancy		
Wearable Size	Type	Inherent Buoyancy
Adult	I & II	34 lb.
	III	22.5 lb.
	V	22.5 to 34 lb.

Hybrid (Foam & Inflation)

- Reliable
- Adult, Youth, and Child sizes
- For swimmers & non-swimmers
- Wearable styles only
- Some designed for water sports

Minimum Buoyancy			
Wearable Size	Type	Inherent Buoyancy	Inflated Total Buoyancy
Adult	II & III	10 lb	22 lb.
	V	7.5 lb.	22 lb.
Youth	II & III	9 lb	15 lb.
	V	7.5 lb.	15 lb.
Child	II	7 lb.	12 lb.

[Types of PFD's >](#)

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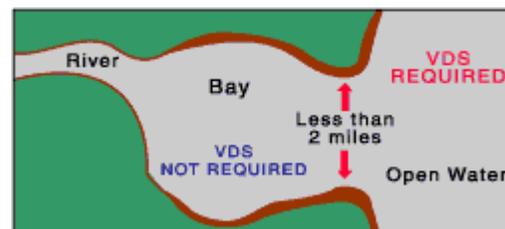
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Visual Distress Signals

All vessels used on coastal waters, the Great Lakes, territorial seas, and those waters connected directly to them, up to a point where a body of water is less than two miles wide, must be equipped with U.S.C.G. Approved visual distress signals. Vessels owned in the United States operating on the high seas must be equipped with U.S.C.G. Approved visual distress signals.



These vessels are not required to carry day signals but must carry night signals when operating from sunset to sunrise:

- Recreational boats less than 16 feet in length
- Boats participating in organized events such as races, regattas, or marine parades.
- Open sailboats less than 26 feet in length not equipped with propulsion machinery.
- Manually propelled boats.

Pyrotechnic Devices

Pyrotechnic Visual Distress Signals must be Coast Guard Approved, in serviceable condition, and readily accessible.

- They are marked with an expiration date. Expired signals may be carried as extra equipment, but can not be counted toward meeting the visual distress signal requirement, since they may be unreliable.
- Launchers manufactured before January 1, 1981, intended for use with approved signals, are not required to be Coast Guard Approved.
- If pyrotechnic devices are selected a minimum of three are required. That is, three signals for day use and three signals for night. Some pyrotechnic signals meet both day and night use requirements.

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- Pyrotechnic devices should be stored in a cool, dry location, if possible.
- A watertight container painted red or orange and prominently marked "DISTRESS SIGNALS" or "FLARES" is recommended.

U.S.C.G. Approved Pyrotechnic Visual Distress Signals and associated devices include:

- Pyrotechnic red flares, hand-held or aerial.
- Pyrotechnic orange smoke, hand-held or floating.
- Launchers for aerial red meteors or parachute flares.

[EACH OF THESE DEVICES HAS A DIFFERENT OPERATING (BURNING) TIME. CHECK THE LABEL TO SEE HOW LONG EACH PYROTECHNIC DEVICE WILL ACTUALLY BE ILLUMINATED. THIS WILL ALLOW YOU TO SELECT A WARNING DEVICE BETTER SUITED TO THE CONDITIONS WHERE YOUR BOAT WILL OPERATE?]



Non-Pyrotechnic Devices

Non-Pyrotechnic Visual Distress Signals must be in serviceable condition, readily accessible, and certified by the manufacturer as complying with U.S.C.G. requirements. They include:

Orange distress flag

- Day signal only.
- Must be at least 3 x 3 feet with a black square and ball on an orange background.
- Must be marked with an indication that it meets Coast Guard requirements in 46 CFR 160.072.
- Most distinctive when attached and waved on a paddle, boathook, or flown from a mast.
- May also be incorporated as part of devices designed to attract attention in an emergency, such as balloons, kites, or floating streamers.

Electric distress light

- Accepted for night use only
- Automatically flashes the international SOS distress signal:
(... — — — ...)
- Must be marked with an indication that it meets Coast Guard requirements in 46 CFR 161.013.

Under Inland Navigation Rules, a high intensity white light flashing at regular intervals from 50-70 times per minute is considered a distress signal. Such devices do NOT count

toward meeting the visual distress signal requirement, however.

Regulations prohibit display of visual distress signals on the water under any circumstances except when assistance is required to prevent immediate or potential danger to persons on board a vessel.

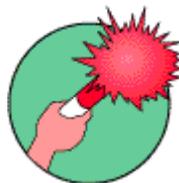
All distress signals have distinct advantages and disadvantages. No single device is ideal under all conditions or suitable for all purposes. Pyrotechnics are universally recognized as excellent distress signals. However, there is potential for injury and property damage if not properly handled. These 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 prohibited from use.

The following are just a few of the variety and combination of devices which can be carried in order to meet the requirements:

- Three hand-held red flares (day and night).
- One hand-held red flare and two parachute flares (day and night).
- One hand-held orange smoke signal, two floating orange smoke signals (day) and one electric distress light (night only).

Pyrotechnic Device Examples



Red Flare
(hand held/day and night)



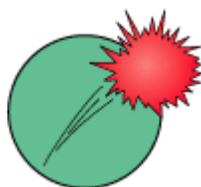
Parachute Flare
(day and night)



Orange Smoke Signal
(hand held/day only)



Floating Orange Smoke Signal
(day only)

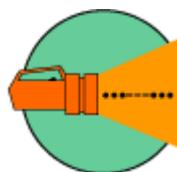


Red Meteor
(day and night)

Non-Pyrotechnic Device Examples



Orange Flag
(day only)



Electric Distress Signals
(night only)

All boaters should be able to signal for help. Boaters must have current dated U.S.C.G. Approved day and night signals for all boats operating on coastal and open bodies of water.

[Fire Extinguishers >](#)

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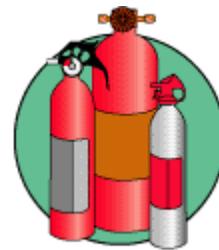
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Fire Extinguishers

Coast Guard Approved fire extinguishers are required on boats where a fire hazard could be expected from the motors or the fuel system. Extinguishers are classified by a letter and number symbol. The letter indicates the type fire the unit is designed to extinguish (Type B for example are designed to extinguish flammable liquids such as gasoline, oil and grease fires). The number indicates the relative size of the extinguisher. The higher the number, the larger the extinguisher.

Coast Guard approved extinguishers required for boats are hand portable, either B-I or B-II classification and have a specific marine type mounting bracket. It is recommended the extinguishers be mounted in a readily accessible position, away from the areas where a fire could likely start such as the galley or the engine compartment.



Extinguisher markings can be confusing because extinguishers can be approved for several different types of hazards. For instance, an extinguisher marked "Type A, Size II, Type B:C, Size I" is a B-I extinguisher.

Look for the part of the label that says "**Marine Type USCG**"

- Make sure Type B is indicated
- Portable extinguishers will be either size I or II. Size III and larger are too big for use on most recreational boats.

Classes	Foam (Gals)	C02 (lbs)	Dry Chemical (lbs)	Halon (lbs)
B-I(TypeB, SizeI)	1.25	4	2	2.5
B-I(TypeB, Size II)	2.5	15	10	10

Fire Extinguishers are required on boats when any of the following conditions exist:

- Inboard engines are installed.
- There are closed compartments and compartments under

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- seats where portable fuel tanks may be stored.
- There are double bottoms not sealed to the hull or which are not completely filled with flotation materials.
- There are closed living spaces.
- There are closed stowage compartments in which combustible or flammable materials are stored.
- There are permanently installed fuel tanks. (Fuel tanks secured so they cannot be moved in case of fire or other emergency are considered permanently installed. There are no gallon capacity limits to determine if a fuel tank is portable. If the weight of a fuel tank is such that persons on board cannot move it, the Coast Guard considers it permanently installed.)

Fire Extinguisher Maintenance

Inspect extinguishers monthly to make sure that:

- Seals and tamper indicators are not broken or missing.
- Pressure gauges or indicators read in the operable range. (Note: CO2 extinguishers do not have gauges.)
- There is no obvious physical damage, rust, corrosion, leakage or clogged nozzles.
- Weigh extinguishers annually to assure that the minimum weight is as stated on the extinguisher label.

Fire extinguishers that do not satisfy the above requirements or that have been partially emptied must be replaced or taken to a qualified fire extinguisher servicing company for recharge.

Required Number of Fire Extinguishers

The number of fire extinguishers required on a recreational boat are based on the overall length of the boat. The following chart lists the number of extinguishers that are required. In the case where a Coast Guard approved fire extinguishing system is installed for the protection of the engine compartment, the required number of units may be reduced in accordance with the chart.

Minimum number of hand portable fire extinguishers required		
Vessel Length	No Fixed System	With approved Fixed Systems
Less than 26'	1 B-1	0
26' to less than 40'	2 B-1 or 1 B-II	1 B-I
40' to 65'	3 B-I or 1 B-II and 1 B-1	2 B-1 or 1 B-II

The pressure gauge alone is not an accurate indicator that Halon extinguishers are full. The weight of the units should be checked regularly. It is recommended that portable extinguishers be mounted in a readily accessible position.

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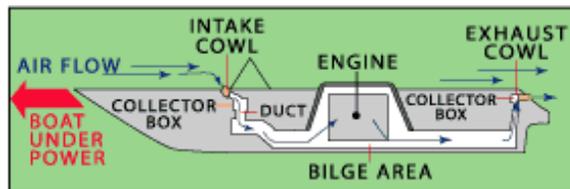
Ventilation

All boats which use gasoline for electrical generation, mechanical power or propulsion are required to be equipped with a ventilation system. A natural ventilation system is required for each compartment in a boat that:

1. contains a permanently installed gasoline engine;
2. has openings between it and a compartment that requires ventilation;
3. contains a permanently installed fuel tank and an electrical component that is not ignition-protected;
4. contains a fuel tank that vents into that compartment (including a portable tank); and
5. contains a non-metallic fuel tank.

A natural ventilation system consists of:

- A supply opening (duct/cowl) from the atmosphere (located on the exterior surface of the boat) or from a ventilated compartment or from a compartment that is open to the atmosphere;
- and an exhaust opening into another ventilated compartment or an exhaust duct to the atmosphere.



All blower motors installed in exhaust ducts must be in working condition of date of manufacture.

Each exhaust opening or exhaust duct must originate in the lower one-third of the compartment. Each supply opening or supply duct and each exhaust opening or duct in a compartment must be above the normal accumulation of bilge water.

A powered ventilation system is required for each compartment in a boat that has a permanently installed gasoline engine with a cranking motor for remote starting.

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A powered ventilation system consists of one or more exhaust blowers. Each intake duct for an exhaust blower must be in the lower one-third of the compartment and above the normal accumulation of bilge water.

For boats built prior to 1980, there was no requirement for a powered ventilation system; however, some boats were equipped with a blower.

The Coast Guard Ventilation Standard, a manufacturer requirement, applies to all boats built on or after August 1, 1980. Some builders began manufacturing boats in compliance with the Ventilation Standard as early as August 1978. If your boat was built on or after August 1, 1978 it might have been equipped with either (1) a natural ventilation system, or (2) both a natural ventilation system and a powered ventilation system. If your boat bears a label containing the words "This boat complies with U.S. Coast Guard safety standards," etc., you can assume that the design of your boat's ventilation system meets applicable regulations.

Manufacturers of boats built after 1980 with remote starters are required to display a label which contains the following information:

Warning:

Gasoline vapors can explode. Before starting engine, operate blower at least 4 minutes and check engine compartment bilge for gasoline vapors.

All owners are responsible for keeping their boat's ventilation systems in operating condition. This means making sure openings are free of obstructions, ducts are not blocked or torn, blowers operate properly, and worn components are replaced with equivalent marine type equipment.

[Backfire Flame Arrestor \(BFA\) >](#)

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Backfire Flame Arrestor (BFA)

Gasoline engines installed in a vessel after April 25, 1940, except outboard motors, must be equipped with an acceptable means of backfire flame control. The device must be suitably attached to the air intake with a flame tight connection and is required to be Coast Guard approved or comply with SAE J-1928 or UL 1111 standards and marked accordingly.

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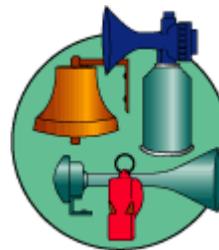
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Sound Producing Devices

The navigation rules require sound signals to be made under certain circumstances. Meeting, crossing and overtaking situations described in the Navigation Rules section are examples of when sound signals are required. Recreational vessels are also required to sound signals during periods of reduced visibility.

When operating on Inland Waters of the United States, vessels 39.4 feet/12 meters or more in length are required to carry on board a whistle or horn, and a bell.

Note: The requirement to carry a bell on board no longer applies to vessels operating on International Waters.



Signalling Devices

Any vessel less than 39.4 feet/12 meters in length may carry a whistle or horn, or some other means to make an efficient sound signal to signal your intentions and to signal your position in periods of reduced visibility.

Therefore, any vessel less than 39.4 feet/12 meters in length is required to make an efficient sound signal to signal your intentions and to signal your position in periods of reduced visibility.

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Navigation Rules

Require vessels to display lights and shapes under certain conditions.

Navigation Lights

Recreational vessels are required to display navigation lights between sunset and sunrise and other periods of reduced visibility (fog, rain, haze, etc.). The U.S. Coast Guard Navigation Rules, International-Inland, specifies lighting requirements for every description of water craft. The information provided is for power-driven and sailing vessels less than 65.5 feet/20 meters in length.

Power-driven Vessels

(Sail Vessel under machinery power is considered a power-driven vessel).

If your power-driven vessel is less than 65.5 feet/20 meters in length, then it must display navigation lights per Figure 1.

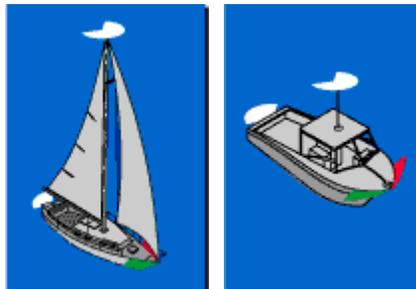


Figure 1

If your power-driven vessel is less than 39.4 feet/12 meters in length, then it may display navigation lights per Figure 2.

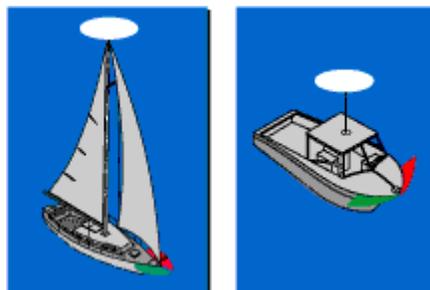


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Figure 2

If your power-driven vessel is less than 23 feet/7 meters in length and its maximum speed cannot exceed 7 knots, then it may display an all-round white light, and if practicable, sidelights instead of the lights prescribed previously. (For International Rules only)

For power-driven vessels less than 39.4 feet/12 meters in length, the masthead or all-round white light must be at least 1 meter above the sidelights.

Sidelights may be a combination light, instead of two separate lights as shown in figures 2 and 5.

Sailing Vessels

If your sailing vessel is less than 65.6 feet/20 meters in length, then it must display navigation lights as shown in Figures 3, 4, or 5.

**Figure 3****Figure 4****Figure 5**

If your vessel is less than 23 feet/7 meters in length, then it should display lights for a sailboat (Figures 3,4,or 5, if practicle). As an option, your vessel may carry an electric torch (flashlight) or lightened lantern that can show a white light in sufficient time to prevent collision. (see Figure 6)

**Figure 6****Vessel Under Oars**

If your vessel is under oars, then it should display lights for a sailboat (Figures 3 or 4), if



Figure 7

practice. As an option, your vessel may carry a flashlight or lighted lantern that can show a white light in sufficient time to prevent collision. (see Figure 7)

Lights and Shapes

To alert other vessels of conditions, which may be hazardous, there are requirements to display lights at night and shapes during the day.

Anchored Vessels

AT NIGHT: All vessels at anchor must display anchor lights. If your vessel is less than 164 feet/50 meters in length, then its anchor light is an all-round white light visible where it can best be seen from all directions. (Figure 8)

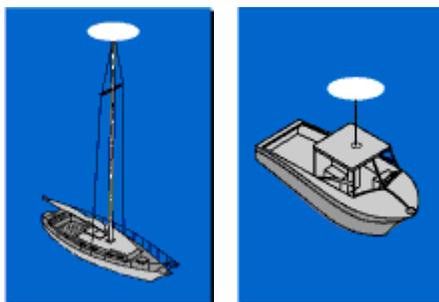


Figure 8

DURING THE DAY: All vessels at anchor must display, forward where it can be best seen, a black ball shape. (See Figure 9)

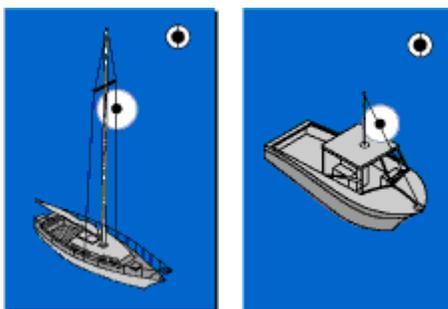


Figure 9

EXCEPTIONS: If your vessel is less than 23 feet/7 meters in length, then it is not required to display an anchor light or shape unless it is anchored in or near a narrow channel, fairway or anchorage, or where other vessels normally navigate.

If your vessel is less than 65.6 feet/20 meters in length, then it is not required to display an anchor light if it is anchored in Inland Waters in a special anchorage designated by the Secretary of

Transportation.

Sailing Vessels Under Power (Machinery)

During the day, vessels under sail also being propelled by machinery, must exhibit forward, where best seen, a black conical shape with the apex pointing down. (Figure 10)



Figure 10

EXCEPTION: If your vessel is less than 39.4 feet/12 meters in length, then it is not required to display the shape in Inland Waters.

REMINDER: If you are operating your sail vessel at night using machinery or sail and machinery, then your vessel must display lights required for a power-driven vessel. (See figures 1 or 2)

Restricted Maneuverability

The Navigation Rules require vessels restricted in their ability to maneuver to display appropriate day shapes or lights. To meet this requirement, if your vessel is engaged in diving activities during the day, then it must exhibit a rigid replica of the international code flag "Alpha" not less than 3.3 feet/ 1 meter in height. If the diving activities are at night, then your vessel must display the navigation lights shown in Figure 11. This requirement does not affect the use of a red and white divers flag, which may be required by State or local law to mark a diver's location. The "A" flag is a navigation signal indicating your vessel's restricted maneuverability and does not pertain to the diver.

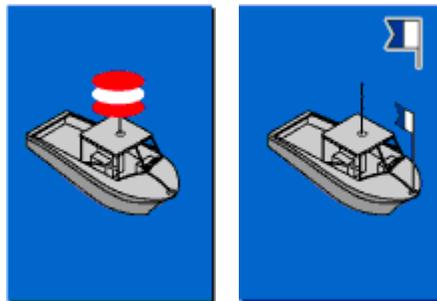


Figure 11

[Radio Regulations >](#)



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Radio Regulations

Carrying a Radio

Most recreational vessels under 65.6ft/20m in length do not have to carry a marine radio. Any vessel that carries a marine radio must follow the rules of the Federal Communications Commission (FCC).

Radio Licenses

The FCC does not require operators of recreational vessels to carry a radio or to have an individual license to operate VHF marine radios (with or without digital selective calling capability), EPIRBs, or any type of radar. Operators must however follow the procedures and courtesies that are required of licensed operators specified in FCC Rules. You may use the name or registration number of your vessel to identify your ship station.

Users of VHF marine radio equipped with digital selective calling will need to obtain a maritime mobile service identity (MMSI) number from the FCC. It is unlawful to use digital selective calling without obtaining this identity.

Vessels required to be licensed:

1. Vessels that use MF/HF single side-band radio, satellite communications, or telegraphy,
2. Power Driven vessels over 65.6 feet/20 meters in length.
3. Vessels used for commercial purposes including:
 - Vessels documented for commercial use, including commercial fishing vessels.
 - CG inspected vessels carrying more than 6 passengers.
 - Towboats more than 25.7 feet/7.8 meters in length.
 - Vessels of more than 100 tons certified to carry at least 1 passenger.
 - Cargo ships over 300 tons.
4. Any vessel, including a recreational vessel, on an international voyage.

Radio Listening Watch

Vessels not required to carry a radio (e.g. recreational vessels less than 65.6 feet/20 meters in length), but which voluntarily

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carry a radio, must maintain a watch on channel 16 (156.800 MHz) whenever the radio is operating and not being used to communicate. Such vessels may alternatively maintain a watch on VHF channel 9 (156.450 MHz), the boater calling channel.

Distress Call Procedures

1. Make sure radio is on
2. Select Channel 16
3. Press/Hold the transmit button
4. Clearly say: MAYDAY MAYDAY MAYDAY
5. Also give:
 - Vessel Name and/or Description
 - Position and/or Location
 - Nature of Emergency
 - Number of People on Board
6. Release transmit button
7. Wait for 10 seconds – If no response Repeat "MAYDAY" Call.

False Distress Alerts

It is unlawful to intentionally transmit a false distress alert, or to unintentionally transmit a false distress alert without taking steps to cancel that alert.

For further information:

FCC — Toll free telephone: 1-888 CALL FCC
World Wide Web: <http://www.fcc.gov/wtb/>

USCG — World Wide Web:
<http://www.navcen.uscg.gov/marcomms/>

For a complete listing of VHF Channels and Frequencies visit the USCG Navigation Center web site: www.navcen.uscg.gov

VHF Marine Radio Channels

The chart below contains a partial listing of channels recreational boaters should be familiar with:

Channel	Type of Message and Use
06	Intership Safety: Used for ship-to-ship safety messages and search messages and ships and aircraft of the Coast Guard.
09	Boater Calling: FCC has established this channel as a supplementary calling channel for recreational boaters in order to relieve congestion on VHF Channel 16.
13, 67	Navigation Safety (Also known as the Bridge-to-Bridge channel): Ships greater than 20 meters in length maintain a listening watch on this channel in US waters. This

channel is available to all ships. Messages must be about ship navigation (i.e. passing or meeting other ships). You must keep your messages short. Your power output must not be more than one watt. This is also the main working channel at most locks and drawbridges. Channel 67 is for lower Mississippi River only.

16 **International Distress, Safety and Calling:** Use this channel to get the attention of another station (calling) or in emergencies. Ships required to carry a radio maintain a listening watch on this channel. USCG and most coast stations also maintain a listening watch on this channel.

21A, 23A, 83A **U.S. Coast Guard only**

22A **Coast Guard Liaison and Maritime Safety Information Broadcasts:** Announcements of urgent marine information broadcasts and storm warnings on Channel 16.

24, 25, 26, 27, 28, 84, 85, 85, 87 **Public Correspondence (Marine Operator):** Use these channels to call the marine operator at a public station. By contacting a public coast station, you can make and receive calls from telephones on shore. Except for dis-tress calls, public stations usually charge for this service.

70 **Digital Selective Calling:** Use this channel for distress and safety calling and for general purpose calling using only digital selective calling (DSC) techniques.

Note: The U.S. Coast Guard will not be equipped to respond to DSC distress calls on Channel 70 until 2006—use Channel 16.

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Pollution Regulations

The Refuse Act of 1899 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.

The Federal Water Pollution Control Act prohibits the discharge of oil or hazardous substances which may be harmful into U.S. navigable waters. Vessels 26 feet in length and over must display a placard at least 5 by 8 inches, made of durable material, fixed in a conspicuous place in the machinery spaces, or at the bilge pump control station, 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.

Regulations issued under the Federal Water Pollution Control Act require all vessels with propulsion machinery to have a capacity to retain oily mixtures on board and be equipped with a fixed or portable means to discharge these oily mixtures to a reception facility. On recreational vessels, a bucket, oil absorbent pads and heavy duty plastic bag, bailer or portable pump are some suitable means that meet the requirement for retention on board until transferring the oily mixture to a reception facility. No person may intentionally drain oil or oily waste from any source into the bilge of any vessel. You must immediately notify the U.S. Coast Guard if your vessel discharges oil or hazardous substances in the water. Call toll-free 800-424-8802 (In Washington, D.C. (202) 267-3675).

Report the following information:

- location
- size
- source
- color
- time observed
- substances

Discharge of Garbage Prohibited

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The Act to Prevent Pollution from Ships (MARPOL ANNEX V) places limitations on the discharge of garbage from vessels. It is illegal to dump plastic trash anywhere in the ocean or navigable waters of the United States. It is also illegal to discharge garbage in the navigable waters of the United States, including inland waters as well as anywhere in the Great Lakes. The discharge of other types of garbage is permitted outside of specific distances offshore as determined by the nature of that garbage.

Garbage Type	Discharge
Plastics – includes synthetic ropes, fishing nets, and plastic bags	Prohibited in all areas
Floating dunnage, lining and packing materials	Prohibited less than 25 miles from nearest land
Food waste, paper, rags, glass, metal, bottles, crockery and similar refuse	Prohibited less than 12 miles from nearest land
Comminuted or ground food waste, paper, rags, glass, etc.	Prohibited less than 3 miles from nearest land

United States vessels of 26 feet or longer must display in a prominent location, a durable placard at least 4 by 9 inches notifying the crew and passengers of the discharge restrictions.

United States oceangoing vessels of 40 feet or longer, which are engaged in commerce or are equipped with a galley and berthing must have a written Waste Management Plan describing the procedures for collecting, processing, storing and discharging garbage, and designate the person who is in charge of carrying out the plan.

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Marine Sanitation Devices

All recreational boats with installed toilet facilities must have an operable marine sanitation device (MSD) on board. Vessels 65 feet and under may use a Type I, II or III MSD. Vessels over 65 feet must install a Type II or III MSD. *All installed MSDs must be Coast Guard certified.* Coast Guard certified devices are so labeled except for some holding tanks, which are certified by definition under the regulations.

When operating a vessel on a body of water where the discharge of treated or untreated sewage is prohibited the operator must secure the device in a manner which prevents any discharge. Some acceptable methods are: padlocking overboard discharge valves in the closed position, using non releasable wire tie to hold overboard discharge valves in the closed position, closing overboard discharge valves and removing the handle, locking the door, with padlock or keylock, to the space enclosing the toilets (for Type I and Type II only).

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Federal Requirements and Safety Tips for Recreational Boats

Vessel Safety Check (VSC) Program

Introduction

The mission of the Coast Guard Recreational Boating Safety program is to minimize the loss of life, personal injury, property damage and environment impact associated with the use of recreational vessels through preventive means. The VSC program supports one of the program's key goals: to improve the demonstrated knowledge, skills, abilities and behaviors of boaters.

The VSC is not a boarding or law enforcement issue. No citations will be given as a result of this encounter. The boater will be given a copy of the completed evaluations so that the boater may follow some of the suggestions given. Vessels that pass will be able to display the distinctive VSC decal. This does not exempt the boater from law enforcement boarding, but the boater can be prepared to make this a positive encounter.

What is a Vessel Safety Check?

A Vessel Safety Check (VSC) is a FREE check to boaters who wish to be sure that their vessel meets all federal and state equipment requirements. Vessel Examiners performing this service have been trained to look for some of the more common problems, which might occur on vessels or their associated safety equipment. The items checked are:

- Proper Display of Numbers
- Registration/Documentation
- Personal Flotation Devices (PFDs)
- Visual Distress Signals (VDS)
- Fire Extinguishers
- Ventilation
- Backfire Flame Arrestor
- Sound Producing Devices/Bell
- Navigation Lights
- Pollution Placard
- MARPOL Trash Placards
- Marine Sanitation Device
- Navigation Rules
- State and/or Local Requirements
- Overall Vessel Condition

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If the vessel has all the required items (listed above) on board and are in good working order, the vessel examiner will award a VSC decal to affix to the vessel.



Additional Safety Equipment

- Marine Radio
- Dewatering Device & Backup
- Mounted Fire Extinguishers
- Anchor and Line for Area
- First Aid and Person-In-Water Kit (PIW)
Note: PIW consists of one extra wearable PFD and a throwable type IV PFD with line
- Inland Visual Distress Signals
- Capacity/Certification of Compliance

Note: The above items not required for the award of the Vessel Safety Check decal.

Boating Safety Education

During the Vessel Safety Check, the vessel examiner will discuss with the recreational boater the purpose of specific marine safety equipment, will clarify various federal and state regulations, will discuss certain safety procedures practices, and will answer any boating related questions. Some of the topics discussed are:

- Accident Reporting/Owner Responsibility
- Charts and Aids to Navigation
- Offshore Operations
- Survival Tips
- First Aid
- Float Plans
- Weather and Sea Conditions
- Fueling and Fuel Management
- Boating Checklist
- Availability of Boating Safety Classes

For Further Information

To get your vessel "Safety Checked" or for more information on the Vessel Safety Check program, contact your local U.S. Coast Guard Auxiliary or U.S. Power Squadron member or visit the

Vessel Safety Check web site at www.safetyseal.net.

Remember!

This is a FREE public service provided in the interest of Boating Safety...

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Quick Reference Chart

Vessel Length (in feet)	Equipment				Requirement
	<16	16<26	26<40	40<65	
X X X X	Certificate of Number (State Registration)	All undocumented vessels equipped with propulsion machinery must be State registered. Certificate of Number must be on board when vessel is in use. Note: some States require all vessels to be registered.			
X X X X	State Numbering	(a) Plain Block letters/numbers not less than 3 inches in height must be affixed on each side of the forward half of the vessel (Contrasting color to boat exterior). (b) State validation sticker must be affixed within six inches of the registration number			
X X X	Certificate of Documentation	Applies only to "Documented" vessels: (a) Original and current certificate must be on board (b) Vessel name/hailing port marked on exterior part of hull -- letters not less than 4 inches in height. (c) Official Number permanently affixed on interior structure -- numbers not less than 3 inches in height.			

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	X	X	X	X	Life Jackets (PFDs)	<p>(a) One Type I, II, III, or V wearable PFD for each person on board. (must be USCG approved)</p> <p>(b) In addition to paragraph (a), must carry One Type IV (throwable) PFD.</p>
		X	X	X		
	X				Visual Distress Signal (VDS)	<p>(a) One electric distress light or Three combination (day/night) red flares. Note: only required to be carried on board when operating between sunset and sunrise.</p> <p>(b) One orange distress flag and One electric distress light - or - Three hand-held or floating orange smoke signals and One electric distress light - or - Three combination (day/night) red flares: hand-held, meteor or parachute type.</p>
		X	X	X		
Vessel Length (in feet)					Equipment	Requirement
<16	16<26	26<40	40<65			
X	X				Fire Extinguishers	<p>(a) One B-I (when enclosed compartment)</p> <p>(b) One B-II or Two B-I. Note: fixed system equals One B-I</p> <p>(c) One B-II and One B-I or Three B-I. Note: fixed system equals One B-I or Two B-II</p>
		X				
			X			
X	X	X	X	X	Ventilation	<p>(a) All vessels built after 25 April 1940 that use gasoline as their fuel with enclosed engine and /or fuel tank compartments must have natural ventilation (at least two ducts fitted with cowls).</p> <p>(b) In addition to paragraph (a), a vessel built after 31 July 1980 must have rated power exhaust blower.</p>

X	X	X		Sound Producing Devices	<p>(a) A vessel 39.4 ft must, at a minimum, have some means of making an "efficient" sound signal - (i.e. handheld air horn, athletic whistle - Human voice/ sound not acceptable).</p> <p>(b) A vessel 39.4 ft (12 meters) or greater, must have a sound signaling appliance capable of producing an efficient sound signal, audible for 1/2 mile with a 4 to 6 seconds duration. In addition, must carry on board a bell with a clapper (bell size not less than 7.9 inches - based on the diameter of the mouth)</p>
		X	X		
X	X	X	X	Backfire Flame Arrestor	Required on gasoline engines installed after 25 April 1940, except outboard motors
X	X	X	X	Navigational Lights	Required to be displayed from sunset to sunrise and in or near areas of reduced visibility.
				Oil Pollution Placard	<p>(a) Placard must be at least 5 by 8 inches, made of durable material.</p> <p>(b) Placard must be posted in the machinery space or at the bilge station.</p>
		X	X	Garbage Placard	<p>(a) Placard must be at least 4 by 9 inches, made of durable material.</p> <p>(b) Displayed in a conspicuous place notifying all on board the discharge restrictions.</p>
X	X	X	X	Marine Sanitation Device	If installed toilet: Vessel must have an operable MSD Type I, II, or III.
		X	X	Navigation Rules	The operator of a vessel 39.4 ft (12 meters) or

(Inland Only) greater must have on board a copy of these rules.

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Vessels Operating Offshore

If you operate offshore, you should seriously consider carrying additional equipment beyond the minimum federal requirements. This equipment should include appropriate communications gear, an Emergency Position Indicating Radio Beacon (EPIRB), a means of accurately determining your location, and an inflatable life raft. In cold waters, an immersion suit should be carried for everyone on board.

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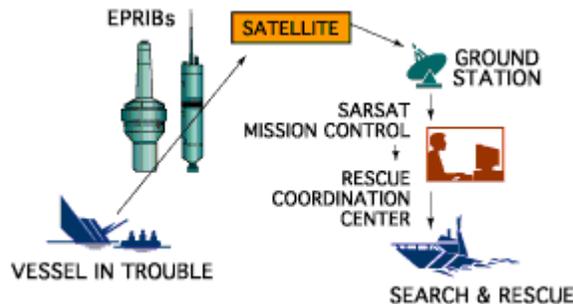
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Communications

Carry communications gear, marine VHF-FM and/or HF transceiver(s), appropriate to your operating area. Cellular phone coverage is available in many coastal areas. HOWEVER, cellular phones should NOT BE considered a substitute for VHF-FM marine band radios for emergency purposes.

Satellite EPIRBs

Satellite EPIRBs (406 MHz) are 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.



When activated, the satellite EPIRB transmits a distress signal with a beacon-unique identifying code. The system detects the signal, calculates an accurate distress position, checks the unique identifying code against the EPIRB registration database (vessel and point of contact information supplied by the owner) and routes the distress alert with registration information to the responsible U.S. Coast Guard (or international) Rescue Coordination Center (RCC). 406 MHz EPIRBs with GPS (internal or attached) also provide an immediate GPS position in the information passed to the RCC.

Geostationary satellites make detection almost immediate. If the EPIRB does not have the ability to provide a GPS position, the process to determine a position takes about an hour on average and almost always less than two hours. Satellite EPIRBs also include a homing beacon and strobe to

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help rescue forces quickly locate the distress scene.

Satellite beacons have significant coverage, alerting timeliness, position accuracy, and signaling advantages over other types of EPIRBs (121.5 MHz). Before purchasing or using an other-than-406MHz EPIRB, be sure you understand its capabilities and limitations.

Mount the EPIRB to float free according to the manufacturer's instructions, if possible. Otherwise, make sure it is readily accessible. Register the EPIRB with NOAA, according to the instructions provided with the beacon. Registration is mandatory, improves response and reduces false alarms.

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Immersion Suits

Immersion suits will delay the effects of [hypothermia](#) in cold water. They should be stored and maintained according to the manufacture's instructions.

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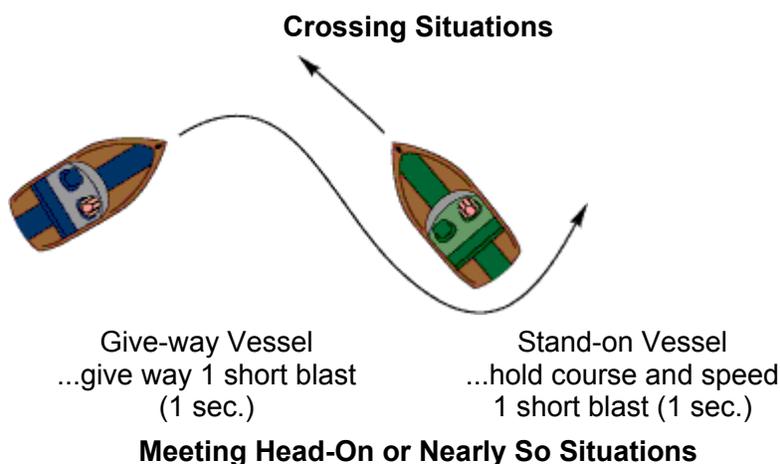
Navigation Rules

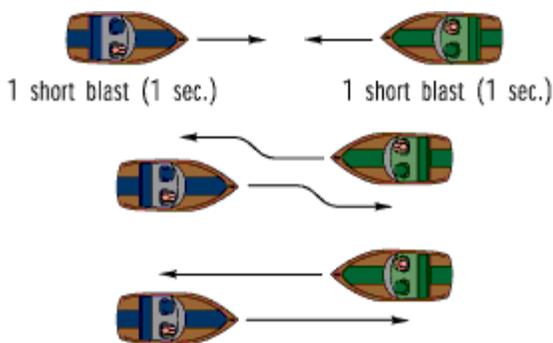
The Navigation Rules establish actions to be taken by vessels to avoid collision. The Rules are divided into two parts, INLAND and INTERNATIONAL. Inland Rules apply to vessels operating inside the line of demarcation while International apply outside. Demarcation lines are printed on most navigational charts and are published in the Navigation Rules.

The operator of a vessel 39.4 feet/12 meters or greater is responsible for having on board and maintaining a copy of the Inland navigation rules. The following diagrams describe the whistle signals and action to be taken by vessels in a crossing, meeting or overtaking situation while operating in inland waters. These are basic examples, for further information consult the "NAVIGATION RULES" International Inland (Commandant Instruction M16672.2 Series)

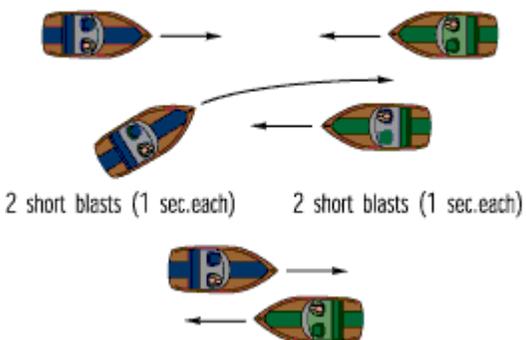
Copies of the rules may be obtained from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 371954, Pittsburgh, PA 15250-7954 tel. (202) 512-1800

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Vessels generally pass portside to portside. However, vessels may pass starboard to starboard if proper signals are given.



Overtaking Situations



[Aids to Navigation >](#)



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Aids to Navigation

Aids to Navigation are placed along coasts and navigable waters as guides to mark safe water and to assist mariners in determining their position in relation to land and hidden dangers. Each aid to navigation is used to provide specific information.

Several aids to navigation are usually used together to form a local aid to navigation system that helps the mariner follow natural and improved channels. Such aids to navigation also provide a continuous system of charted marks for coastal piloting. Individual aids to navigation are used to mark landfall from seaward, and to mark isolated dangers.

Lateral markers are buoys or beacons that indicate the port and starboard sides of a route to be followed. Virtually all U.S. lateral marks follow the traditional 3R rule of "red, right, returning". This means, when returning from sea, keep red marks on the right-hand (starboard) side of the vessel.

Mariners must NOT rely on buoys alone for determining their position. Storms and wave action can cause buoys to move.

[Lateral Aids >](#)

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Lateral Aids

Lateral aids marking the sides of channels as seen when entering from seaward.

Port Side (Odd Numbers) Standard Side (Even Numbers)



Chart Symbol
G "9"
Fl G 4 sec

Lighted Buoy (Green Light Only)



Chart Symbol
R "8"
Fl R 4 sec

Lighted Buoy (Red Light Only)

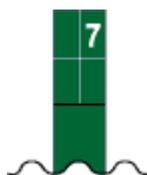


Chart Symbol
C "7"

Can Light (Unlighted)

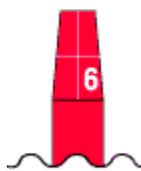


Chart Symbol
N "6"

Nun Buoy (Unlighted)



Chart Symbol
G "1"

Daybreak



Chart Symbol
R "2"

Daybreak

Do not tie up to Aids to Navigation, it is dangerous and illegal.

Safe Water Markers

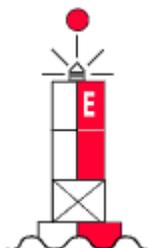


Chart Symbol
RW "E"
Mo (A)

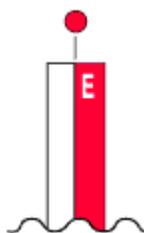


Chart Symbol
RW "E"

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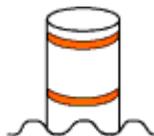


Chart Symbol



RW
"A"

Information and Regulatory Markers



Diamond Shape
warns of danger



Diamond Shape with cross
means boats keep out



Circle marks area controlled
"as indicated"



For displaying informaion such as
directions, distances, locations,
ect.

[Nautical Charts >](#)

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Nautical Charts

One of the most important tools used by boaters for planning trips and safely navigating waterways are Nautical Charts. Nautical Charts show the nature and shape of the coast, depths of water, general configuration and character of the bottom, prominent landmarks, port facilities, aids to navigation, marine hazards, and other pertinent information. Changes brought about by people and nature require that nautical charts be constantly maintained and updated to aid safe navigation. To meet the needs of the boating public, the National Ocean Service (NOS) produces a variety of nautical charts and chart products. The date of a nautical chart is critical to the boater. Only up-to-date charts should be used for navigation. Nautical charts vary in scale and format. For coastal navigation, for instance, boaters should use the largest chart scale available. Chart updating information can be obtained from "Local Notice to Mariners" published by the U.S. Coast Guard.

NOS nautical charts may be purchased either directly by mail from the NOS Distribution Branch or through an authorized agent. There are more than 1,700 nautical chart agents that sell NOS charts. To obtain a list of the agents near you, request a free catalog.

FAA/National Aeronautical Charting Office
 Distribution Division, AVN-530
 6303 Ivy Lane, Suite 400
 Greenbelt, MD 20770
 Telephone: (301) 436-8301 or 1-800-638-8972 U.S. Only
 FAX: (301) 436-6829
 Email: 9-AMC-chartsales@faa.gov
 Website: <http://naco.faa.gov/>

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Safety and Survival Tips:
April 19, 2004

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Safety and Survival Tips

Operator's Responsibilities

Your water fun depends on you, your equipment and other people who, like yourself, enjoy spending leisure time on, in or near the water. Let's take a look at your responsibilities:

- Make sure the boat is in top operating condition and that there are no tripping hazards. The boat should be free of fire hazards and have clean bilges
- Safety equipment, required by law, is on board, maintained in good condition, and you know how to properly use these devices.
- File a float plan with a relative or friend.
- Have a complete knowledge of the operation and handling characteristics of your boat.
- Know your position and know where you are going.
- Maintain a safe speed at all times to avoid collision.
- Keep an eye out for changing weather conditions, and act accordingly.
- Know and practice the Rules of the Road (Navigation Rules).
- Know and obey Federal and state regulations and waterway markers.
- Maintain a clear, unobstructed view forward at all times. "Scan" the water back and forth; avoid "tunnel" vision. Most boating collisions are caused by inattention.

You are the key to water safety!

[Overloading >](#)

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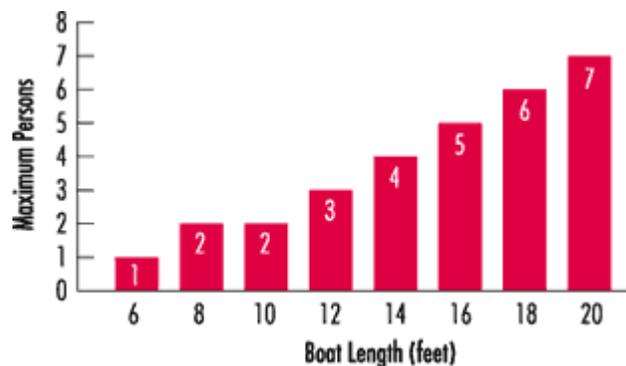
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Overloading

Never overload your boat with passengers and cargo beyond its safe carrying capacity. Too many people and/or gear will cause the boat to become unstable. Always balance the load so that the boat maintains proper trim. Here are some things to remember when loading your boat:

- Distribute the load evenly fore and aft and from side to side.
- Keep the load low.
- Keep passengers seated (Do not stand up in a small boat!).
- Fasten gear to prevent shifting.
- Do not exceed the "U.S. Coast Guard Maximum Capacities" information label (commonly called the Capacity Plate).
- If there is no capacity plate, use the following chart as a guide to determine the maximum number of persons you can safely carry in calm weather. (The chart is applicable only to mono-hull boats less than 20ft in length.) A mono-hull is a boat, which makes a single "footprint" in the water when loaded to its rated capacity. For example, a catamaran, trimaran, or a pontoon boat is not a mono-hull boat.



Number of People = $(\text{Length of Boat} \times \text{Boat Width})$

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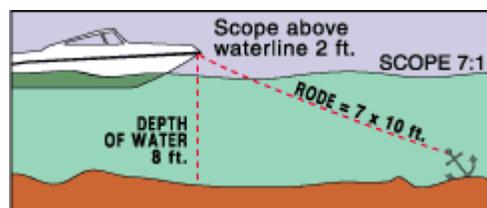
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Anchoring

Anchoring is done for two principal reasons: first, to stop for fishing, swimming, lunch, or an overnight stay and secondly, to keep you from running aground in bad weather or as a result of engine failure. Anchoring can be a simple task if you follow these guidelines:

- Make sure you have the proper type of anchor (danforth/plow/mushroom).
- A three to six foot length of galvanized chain should be attached to the anchor. The chain will stand up to the abrasion of sand, rock or mud on the bottom much better than a fiber line.
- A suitable length of nylon anchor line should be attached to the end of the chain (this combination is called the "Rode"). The nylon will stretch under heavy strain cushioning the impact of the waves or wind on the boat and the anchor.
- Select an area that offers maximum shelter from wind, current and boat traffic.
- Determine depth of water and type of bottom (preferably sand or mud).
- Calculate amount of anchor line you will need. General rule: 5 to 7 times as much anchor line as the depth of water plus the distance from the water to where the anchor will attach to the bow. For example, if the water depth is 8 feet and it is 2 feet from the top of the water to your bow cleat, you would multiply 10 feet by 5 to 7 to get the amount of anchor line to put out (See diagram below)



- Secure the anchor line to the bow cleat at the point you want it to stop.
- Bring the bow of the vessel into the wind or current.
- When you get to the spot you want to anchor, place the

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- engine in neutral.
- When the boat comes to a stop, slowly lower the anchor. Do not throw the anchor over, as it will tend to foul the anchor.
 - When all anchor line has been let out, back down on the anchor with engine in idle reverse to help set the anchor.
 - When anchor is firmly set, use reference points (landmarks) in relation to the boat to make sure you are not drifting. Check these points frequently.

Do not anchor by the Stern!!

Anchoring a small boat by the stern has caused many to capsize and sink. The transom is usually squared off and has less freeboard than the bow. In a current, the force of the water can pull the stern under. The boat is also vulnerable to swamping by wave action. The weight of a motor, fuel tank, or other gear in the stern increases the risk.

[Fueling Precautions >](#)

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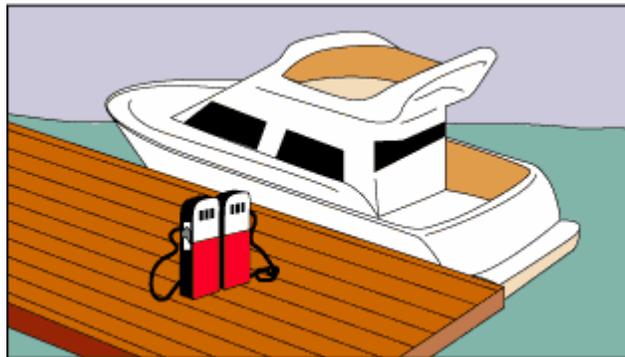
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Fueling Precautions

Most fires and explosions happen during or after fueling. To prevent an accident follow these rules:

- Portable tanks should be refueled ashore.
- Close all hatches and other openings before fueling.
- Extinguish all smoking materials.
- Turn off engines, all electrical equipment, radios, stoves and other appliances.
- Remove all passengers.
- Keep the fill nozzle in contact with the tank and wipe up any spilled fuel.
- Open all ports, hatches and doors to ventilate.
- Run the blower for at least four minutes.
- Check the bilges for fuel vapors before starting the engine.
- Do the "sniff test". Sniff around to make sure there is no odor of gasoline anywhere in the boat.



Do not start the engine until all traces of fuel vapors are eliminated!!

Fuel Management

Practice the "One-Third Rule" by using:

- One-third of the fuel going out
- One-third to get back
- One-third in reserve

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Float Plan

Play it safe, keep a stack of float plan forms on hand. Leave a copy with a friend, relative or local marina before heading out on the water. In case of an emergency, pertinent information will be right at their fingertips to enable them to contact the local marine police or Coast Guard with necessary details. A word of caution—in case you're delayed, and it's not an emergency, inform those with your float plan, and be sure to notify them when you return so the float plan can be "closed out" and an unnecessary and costly search avoided. An example of a float plan is provided [here as a PDF](#).

[Propeller Blades Warning >](#)

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Propeller Blades Warning

Never forget the danger to persons in the water that boat propellers can inflict. Statistics indicate that most propeller injuries and fatalities involve open motorboats 16 to less than 26 feet in length and are due to operator inattention, inexperience, and carelessness. Remember to shut off your engines when approaching swimmers. When engines are running, alert swimmers to stay clear of the stern. Propeller guards are not suitable for all types of boats. Therefore, the best and safest course of action to take when people are in the water near your boat—Shut off your engines!



People in the water can be severely injured or killed!

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Weather

You should never leave the dock without first checking the local weather forecast. You can get the weather information from the TV, radio, local newspaper, on-line, or from one of the weather channels on your VHF radio.

At certain times of the year weather can change rapidly and you should continually keep a "weather eye" out. While you are out in a boat here are a few signs you can look for that indicate an approaching weather change:

- Weather changes generally come for the west. Scan the sky with your weather eye, especially to the west.
- Watch for cloud build up, especially rapid vertically rising clouds.
- Sudden drop in temperature.
- Sudden change in wind direction and/or speed.
- If you have a barometer on your boat, check it every 2 to 3 hours. A rising barometer indicates fair weather and a rise in wind velocity; a falling barometer indicates stormy or rainy weather.

What To Do in Severe Weather

- Reduce speed, but keep just enough power to maintain headway.
- Put on your PFDs.
- Turn on running lights.
- Head for nearest shore that is safe to approach, if possible.
- Head bow of boat into the waves at about a 45-degree angle.
- Keep bilges free of water.
- Seat passengers on bottom of boat near centerline.
- If your engine fails, trail a sea anchor on a line from the bow to keep the boat headed into the waves. A bucket will work as a sea anchor in an emergency.
- Anchor the boat if necessary

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Small Boats and Water Activities

Many hunters and anglers do not think of themselves as boaters, but use small semi v-hull vessels, flat bottom jon-boats or canoes to pursue their sports. These boats tend to be unstable and easily capsize. Capsizings, sinkings, and falls overboard from small boats account for 70% of boating fatalities and these facts mean you must have a greater awareness of the boat's limitations and the skill and knowledge to overcome them.

Standing in a small boat raises the center of gravity, often to the point of capsizing. Standing for any reason or even changing position in a small boat can be dangerous, as is sitting on the gunwales or seat backs or on a pedestal seat while underway. A wave or sudden turn may cause a fall overboard or capsizing because of the raised center of gravity.

[Staying Afloat >](#)

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Staying Afloat

It is common belief that someone dressed in heavy clothing or waders will sink immediately if they fall overboard. This is not true. Air trapped in clothing provides considerable flotation, and bending the knees will trap air in waders, providing additional flotation. To stay afloat follow these rules:

- Remain calm, do not thrash about or try to remove clothing or footwear. This leads to exhaustion and increases the loss of air that keeps you afloat.
- Keep your PFD on.
- Keep your knees bent.
- Float on your back and paddle slowly to safety.

[Cold Water Survival >](#)

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Cold Water Survival

Sudden immersion in cold water can induce rapid, uncontrolled breathing, cardiac arrest, and other physical body conditions, which can result in drowning. Always wearing a PFD will help you survive in rapid immersion situations. In other situations where you must enter the water, here are a few things to follow:

- Wear a PFD.
- Button up your clothing.
- Cover your head if possible and enter the water slowly.
- Keep your head out of the water if at all possible.
- Assume the Heat Escape Lessening Posture (H.E.L.P.) position.



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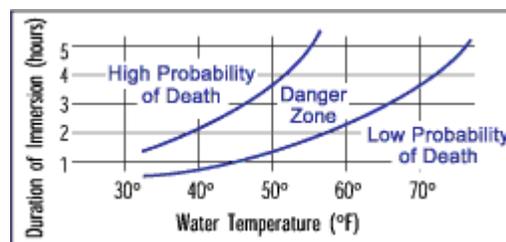
Federal Requirements and Safety Tips for Recreational Boats



Hypothermia

Immersion in water speeds the loss of body heat and can lead to hypothermia. Hypothermia is the abnormal lowering of internal body temperature. If your boat capsizes it will likely float on or just below the surface. Outboard powered vessels built after 1978 are designed to support you even if full of water or capsized. To reduce the effects of hypothermia get in or on the boat. Try to get as much of your body out of the water as possible. If you can't get in the boat a PFD will enable you to keep your head out of the water. This is very important because about 50% of body heat loss is from the head.

It may be possible to revive a drowning victim who has been under water for considerable time and shows no signs of life. Numerous documented cases exist where victims have been resuscitated with no apparent harmful effects after long immersions. Start CPR immediately and get the victim to a hospital as quickly as possible.



The Danger Zone indicates where safety precautions and appropriate behavior (adopting H.E.L.P.) can increase your chances of survival when immersed in cold water.

[Carbon Monoxide >](#)

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Carbon Monoxide Hazards on Recreational Boats

The Facts

Carbon Monoxide can be a "silent killer" on houseboats and other recreational vessels. Each year, boaters are injured or killed by carbon monoxide. Virtually all of the poisonings are preventable.

Carbon monoxide is a by-product of combustion of carbon based material such as gasoline, propane, charcoal or wood. Common sources aboard boats include main and auxiliary engines, generators, cooking ranges, space heaters, and water heaters. (Note: Cold and poorly tuned engines produce more carbon monoxide than warm properly tuned engines).

Carbon monoxide can collect within a boat in a variety of ways. Exhaust leaks (the leading cause of death by carbon monoxide) can allow carbon monoxide to migrate throughout the boat and into enclosed areas. Even properly vented exhaust can re-enter a boat if it's moored too close to a dock or another boat, or if the exhaust is pushed back by prevailing winds. Exhaust can re-enter boats when cruising under certain conditions – the station wagon effect – especially with canvas in place. Exhaust can also collect in enclosed spaces near the stern swim platform.

What To Do?

- Schedule regular engine and exhaust system maintenance inspections by experienced and trained mechanics.
- Be aware that dangerous concentrations of carbon monoxide can accumulate when a boat, generator or other fueled device is operated while the boat is at a pier, seawall or alongside another boat. Do not run engines or equipment for extended periods of time under these conditions or without continuous monitoring.
- Keep forward facing hatches open to allow fresh air circulation in accommodation spaces, even in inclement weather.
- Keep people clear of the rear deck area and swim platform of the boat while either the generator or engines

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- are running. Always monitor the swimming area.
- Do not confuse carbon monoxide poisoning with seasickness or intoxication. If someone on board complains of irritated eyes, headaches, nausea, weakness or dizziness, immediately move the person to fresh air, investigate the cause and take corrective action. Seek medical attention, if necessary.
 - Install a carbon monoxide detector in each accommodation space on your boat. Check the detectors periodically to be sure they are functioning properly.

[Checklist >](#)

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Checklist

Each Trip:

- Make sure all exhaust clamps are in place and secure.
- Look for exhaust leaking from the exhaust system components evidenced by rust and /or black streaking, water leaks, or corroded or cracked fittings.
- Inspect rubber exhaust hoses for burned or cracked sections. All rubber hoses should be pliable and free of kinks.
- Confirm that cooling water flows from the exhaust outlet when the engines and generator are started.
- Listen for any change in exhaust sound that could indicate a failure of an exhaust component.
- Test the operation of each carbon monoxide detector by pressing the test button.

Do not operate the vessel if any of these problems exist!

At Least Annually:

(Performed by a qualified marine technician)

- Replace exhaust hoses if any evidence of cracking, charring or deterioration is found.
- Inspect each water pump impeller and inspect the condition of the water pump housing. Replace if worn or cracked (refer to the engine and generator manuals for further information).
- Inspect each of the metallic exhaust components for cracking, rusting, leaking or looseness. Pay particular attention to the cylinder head, exhaust manifold, and water injection elbow.
- Clean, inspect and confirm the proper operation of the generator cooling water anti-siphon valve (if equipped).

Regular maintenance and proper operation of the boat are the best defenses against injury from carbon

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monoxide...

To find out more information about how you can prevent carbon monoxide poisoning on recreational boats, contact:

U.S. Coast Guard Infoline
1-800-368-5647
www.uscgboating.org

National Marine Manufacturers Association
312-946-6200
www.nmma-medialink.com

[Download](#) a printable pdf of the checklist.

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Boater's Pre-Departure Checklist

Know your vessel. Before departure, always be sure your vessel is in good working condition and properly equipped for emergencies. Avoid inconvenience and potential danger by taking a few minutes to check the following:

Minimum Federal Required Equipment

	Yes	No
State Registration Documentation		
State Numbering Displayed		
Certificate of Documentation		
Lifejackets (PFDs) - one for each person		
Throwable PFD		
Visual Distress Signals		
Fire Extinguishers (fully charged)		
Proper Ventilation		
Backfire Flame Arrestor		
Sound Producing Device(s)		
Navigation lights		
Oil Pollution Placard		
Garbage Placard		
Marine Sanitation Device		
Navigation rules		
Any Additional State Requirements		

Besides meeting the federal requirements, prudent boaters carry additional safety equipment. The following additional items are suggested depending on the size, location and use of your boat:

Recommended Equipment

	Yes	No	N/A
VHF Marine Radio			
Anchor and Tackle			
Chart(s) of Area & Navigation Tools			
Magnetic Compass			
Fenders and Boat Hook			

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Mooring Lines and Heaving line
 Manual Bilge Pump or Bailing
 Device
 Tool Kit
 Spare Parts (fuses, spark plugs,
 belts, etc)
 Spare Battery (fully charged)
 Spare Propeller
 Extra Fuel & Oil
 Alternate Propulsion (paddles/oar)
 Flashlight & Batteries
 Search Light
 First Aid Kit
 Sunscreen (SPF 30+)
 Mirror
 Food and Water
 Extra Clothing
 AM - FM Radio
 Cellular Phone
 Binoculars

Safety Checks and Tests

Yes No N/A

Test Marine Radio (voice call)
 Test Navigation and Anchor Lights
 Test Steering (free movement)
 Test Tilt / Trim
 Test Bilge Pump
 Check for any excessive water in
 bilges
 Check Fuel System for any leaks
 Check Engine Fluids
 Ensure Boat Plug is properly installed
 Check Electrical System
 Check Galley / Heating Systems
 Check Gauges (i.e. batteries)
 Check Fuel Amount
 Ensure Anchor is ready for use
 Check load of vessel and secure
 gear from shifting
 Ensure passengers know Emergency
 Procedures and Equipment Location
 Everyone put on a Lifejacket to check
 for proper fitting.
 Check the Weather Forecast
 File a Float Plan with family or friend

[Download](#) a printable pdf of the pre-departure checklist.

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Federal Requirements and Safety Tips for Recreational Boats

Be Safe on the Water

Know the navigation rules, observe the courtesies of safe boating and

KNOW . . .

- your **B**oat
- the **E**quipment
- the **S**afety devices and wear PFDs
- about **A**lcohol and other distress stressors
- about **F**irst aid and emergency procedures
- your **E**nvironment, area and weather

. BEFORE YOU GO!

Boating Safety is no accident. To build sound knowledge, proficiency and confidence, the keys to safe boating, take a boating safety course.

For more information on boating safety and boating courses, contact your State Boating Agency, Coast Guard Auxiliary, US Power Squadron, Coast Guard District or call the Boating Safety Infoline (1-800-368-5647).

**Take Time to Reflect on Safety
Safe Boating Begins Here . . .
with You!**

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Federal Requirements

Metric Measure	Feet in Decimals	Feet and Inches
50.0 Meters (M)	164.0 ft.	164' 1/2"
20.0 M	65.6 ft.	65' 7 1/2"
12.0 M	39.4 ft.	39' 4 1/2"
10.0 M	32.8 ft.	32' 9 3/4"
8.0 M	26.3 ft.	26' 3"
7.0 M	23.0 ft.	22' 11 1/2"
6.0 M	19.7 ft.	19' 8 1/4"
5.0 M	16.4 ft.	16' 4 3/4"
4.0 M	13.1 ft.	13' 1 1/2"
2.5 M	8.2 ft.	8' 2 1/2"
1.0 M	3.3 ft.	3' 3 1/3"

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APPENDIX C

Washington Administrative Code (WAC) Boating Statutes

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WAC 352-60-030 Personal flotation devices required. No person shall operate or permit the operation of a vessel on the waters of the state unless the vessel has on board United States Coast Guard approved personal flotation devices as follows:

(1) Vessels less than sixteen feet (4.9 meters) in length, and canoes and kayaks of any length, must have one Type I, II, or III PFD of the proper size for each person on board.

(2) Vessels sixteen feet (4.9 meters) or more in length, except a canoe or kayak, must have one Type I, II, or III wearable PFD of the proper size for each person on board and, in addition, one Type IV throwable PFD.

(3) Alternate PFD requirement. A United States Coast Guard approved Type V PFD may be carried in lieu of any required PFD under this section if it is approved for the activity in which the vessel is engaged in and used in compliance with requirements on the approval label.

(4) Stowage and condition. All personal flotation devices required by this section shall be readily accessible to all persons on board and be in good and serviceable condition. All devices shall be approved by the United States Coast Guard and marked in compliance with Coast Guard standards.

(5) Exemptions. Racing shells, rowing sculls and racing kayaks are exempt from the requirements of this section provided they are manually propelled, recognized by a national or international racing association and designed solely for competitive racing.

[Statutory Authority: RCW [43.51.400](#), [88.12.065](#), [88.12.125](#), [88.12.245](#) and chapter 33, CFR Part 175.15. 94-16-027, § 352-60-030, filed 7/25/94, effective 8/25/94. Statutory Authority: RCW [43.51.400](#). 84-11-057 (Order 79), § 352-60-030, filed 5/18/84.]

WAC 352-60-040 Visual distress signals. (1) Application. The requirements for this section apply to coastal waters.

(2) No person shall operate or permit the operation of a vessel unless visual distress signals are carried on board under the following conditions:

(a) For vessels sixteen feet (4.9 meters) or more in length, devices suitable for day use and devices suitable for night use, or devices suitable for both day and night use must be carried on board.

(b) For vessels less than sixteen feet (4.9 meters) in length, visual distress signals for night use must be carried on board when operating between sunset and sunrise.

(3) Visual distress signals accepted. Any of the following signals as specified in Title 46, Code of Federal Regulations, Part 160, when carried in the number required, can be used to meet the requirements of this section:

(a) An electric distress light meeting the standards of Chapter 46, Code of Federal Regulations, Part 161.013. One is required to meet the night only requirement.

(b) An orange flag meeting the standards of Chapter 46, Code of Federal Regulations, Part 160.072. One is required to meet the day only requirement.

(c) Pyrotechnics meeting the standards noted in the table below:

Distress Signal Description	USCG Approval Number	Use	Number Required
Hand-Held Red Flare Signals	160.021	Day and Night	3
Floating Orange Smoke Signals	160.022	Day Only	3
Parachute Red Flare Signals	160.024	Day and Night	3
Hand-Held Rocket Propelled Parachute Red Flare Signals	160.036	Day and Night	3
Hand-Held Orange Smoke Signals	160.037	Day Only	3
Floating Orange Smoke Signals	160.057	Day Only	3
Red Aerial Pyrotechnic Flares	160.066	Day and Night	3

(4) Marking and stowage. Visual distress signals required by this section must be legibly marked with the United States Coast Guard approval number and must be readily accessible.

(5) Condition and expiration date. Visual distress signals required by this section must be in serviceable condition, and if marked with an expiration date, shall not be expired.

(6) Launchers. Any vessel that carries a visual distress signal required by this section where a launcher is necessary to activate the signal, must also have on board a launcher approved by the United States Coast Guard.

(7) Prohibited use. No person in a vessel shall display a visual distress signal on the waters of Washington state under any circumstance except a situation where assistance is needed because of immediate or potential danger to the persons on board.

(8) Exceptions. The following vessels, when operating between sunset and sunrise, must carry visual distress signals that meet the requirements of this section and are suitable for night use:

(a) A vessel competing in any organized marine parade, regatta, race or similar authorized event;

(b) A vessel being manually propelled; or

(c) A sailing vessel of completely open construction, less than twenty-six feet (7.9 meters) in length, and not equipped with propulsion machinery.

(9) Any combination of signal devices selected from the types noted in subsection (3)(a), (b) and (c) of this section, when carried in the number required, may be used to meet both day and night requirements. Examples - the combination of two hand-held red flares (160.021), and one parachute red flare (160.024 or 160.036) meets both day and night requirements. Three hand-held orange smoke (160.037) with one electric distress light (161.013) meet both day and night requirements.

[Statutory Authority: RCW [43.51.400](#), [88.12.065](#), [88.12.125](#), [88.12.245](#) and chapter 33, CFR Part 175.15. 94-16-027, § 352-60-040, filed 7/25/94, effective 8/25/94. Statutory Authority: RCW [43.51.400](#), 84-11-057 (Order 79), § 352-60-040, filed 5/18/84.]

RCW 79A.60.130**Muffler or underwater exhaust system required -- Exemptions -- Enforcement -- Penalty.**

(1) All motor-propelled vessels shall be equipped and maintained with an effective muffler that is in good working order and in constant use. For the purpose of this section, an effective muffler or underwater exhaust system does not produce sound levels in excess of ninety decibels when subjected to a stationary sound level test that shall be prescribed by rules adopted by the commission, as of July 25, 1993, and for engines manufactured on or after January 1, 1994, a noise level of eighty-eight decibels when subjected to a stationary sound level test that shall be prescribed by rules adopted by the commission.

(2) A vessel that does not meet the requirements of subsection (1) of this section shall not be operated on the waters of this state.

(3) No person may operate a vessel on waters of the state in such a manner as to exceed a noise level of seventy-five decibels measured from any point on the shoreline of the body of water on which the vessel is being operated that shall be specified by rules adopted by the commission, as of July 25, 1993. Such measurement shall not preclude a stationary sound level test that shall be prescribed by rules adopted by the commission.

(4) This section does not apply to: (a) A vessel tuning up, testing for, or participating in official trials for speed records or a sanctioned race conducted pursuant to a permit issued by an appropriate governmental agency; or (b) a vessel being operated by a vessel or marine engine manufacturer for the purpose of testing or development. Nothing in this subsection prevents local governments from adopting ordinances to control the frequency, duration, and location of vessel testing, tune-up, and racing.

(5) Any officer authorized to enforce this section who has reason to believe that a vessel is not in compliance with the noise levels established in this section may direct the operator of the vessel to submit the vessel to an on-site test to measure noise level, with the officer on board if the officer chooses, and the operator shall comply with such request. If the vessel exceeds the decibel levels established in this section, the officer may direct the operator to take immediate and reasonable measures to correct the violation.

(6) Any officer who conducts vessel sound level tests as provided in this section shall be qualified in vessel noise testing. Qualifications shall include but may not be limited to the ability to select the appropriate measurement site and the calibration and use of noise testing equipment.

(7) A person shall not remove, alter, or otherwise modify in any way a muffler or muffler system in a manner that will prevent it from being operated in accordance with this chapter.

(8) A person shall not manufacture, sell, or offer for sale any vessel that is not equipped with a muffler or muffler system that does not comply with this chapter. This subsection shall not apply to power vessels designed, manufactured, and sold for the sole purpose of competing in racing events and for no other purpose. Any such exemption or exception shall be documented in any and every sale agreement and shall be formally acknowledged by signature on the part of both the buyer and the seller. Copies of the agreement shall be maintained by both parties. A copy shall be kept on board whenever the vessel is operated.

(9) Except as provided in RCW 79A.60.020, a violation of this section is an infraction under chapter 7.84 RCW.

(10) Vessels that are equipped with an engine modified to increase performance beyond the engine manufacturer's stock configuration shall have an exhaust system that complies with the standards in this section after January 1, 1994. Until that date, operators or owners, or both, of such vessels with engines that are out of compliance shall be issued a warning and be given educational materials about types of muffling systems available to muffle noise from such high performance engines.

(11) Nothing in this section preempts a local government from exercising any power that it possesses under the laws or Constitution of the state of Washington to adopt more stringent regulations.

[2000 c 11 § 97; 1993 c 244 § 39. Formerly RCW 88.12.085.]

NOTES:

Intent -- 1993 c 244: See note following RCW 79A.60.010.

RCW 79A.60.180**Loading or powering vessel beyond safe operating ability -- Penalties.**

(1) A person shall not load or permit to be loaded a vessel with passengers or cargo beyond its safe carrying ability or carry passengers or cargo in an unsafe manner taking into consideration weather and other existing operating conditions.

(2) A person shall not operate or permit to be operated a vessel equipped with a motor or other propulsion machinery of a power beyond the vessel's ability to operate safely, taking into consideration the vessel's type, use, and construction, the weather conditions, and other existing operating conditions.

(3) A violation of subsection (1) or (2) of this section is an infraction punishable as provided under chapter 7.84 RCW except as provided under RCW 79A.60.020 or where the overloading or overpowering is reasonably advisable to effect a rescue or for some similar emergency purpose.

(4) If it appears reasonably certain to any law enforcement officer that a person is operating a vessel clearly loaded or powered beyond its safe operating ability and in the judgment of that officer the operation creates an especially hazardous condition, the officer may direct the operator to take immediate and reasonable steps necessary for the safety of the individuals on board the vessel, including directing the operator to return to shore or a mooring and to remain there until the situation creating the hazard is corrected or ended. Failure to follow the direction of an officer under this subsection is a misdemeanor punishable as provided under RCW 9.92.030.

[2000 c 11 § 100; 1993 c 244 § 16. Formerly RCW 88.12.135.]

NOTES:

Intent -- 1993 c 244: See note following RCW 79A.60.010.

RCW 79A.60.200**Duty of operator involved in collision, accident, or other casualty -- Immunity from liability of persons rendering assistance -- Penalties.**

(1) The operator of a vessel involved in a collision, accident, or other casualty, to the extent the operator can do so without serious danger to the operator's own vessel or persons aboard, shall render all practical and necessary assistance to persons affected by the collision, accident, or casualty to save them from danger caused by the incident. Under no circumstances may the rendering of assistance or other compliance with this section be evidence of the liability of such operator for the collision, accident, or casualty. The operator shall also give all pertinent accident information, as specified by rule by the commission, to the law enforcement agency having jurisdiction: **PROVIDED**, That this requirement shall not apply to operators of vessels when they are participating in an organized competitive event authorized or otherwise permitted by the appropriate agency having jurisdiction and authority to authorize such events. These duties are in addition to any duties otherwise imposed by law. Except as provided for in RCW 79A.60.020 and subsection (3) of this section, a violation of this subsection is a civil infraction punishable under RCW 7.84.100.

(2) Any person who complies with subsection (1) of this section or who gratuitously and in good faith renders assistance at the scene of a vessel collision, accident, or other casualty, without objection of the person assisted, shall not be held liable for any civil damages as a result of the rendering of assistance or for any act or omission in providing or arranging salvage, towage, medical treatment, or other assistance, where the assisting person acts as any reasonably prudent person would have acted under the same or similar circumstances.

(3) An operator of a vessel is guilty of a class C felony and is punishable pursuant to RCW 9A.20.021 if the operator: (a) Is involved in a collision that results in injury to a person; (b) knew or reasonably should have known that a person was injured in the collision; and (c) leaves the scene of the collision without rendering all practical and necessary assistance to the injured person as required pursuant to subsection (1) of this section, under circumstances in which the operator could have rendered assistance without serious danger to the operator's own vessel or persons aboard. This subsection (3) does not apply to vessels involved in commerce, including but not limited to tugs, barges, cargo vessels, commercial passenger vessels, fishing vessels, and processing vessels.

[2000 c 11 § 102; 1996 c 36 § 1; 1993 c 244 § 18; 1984 c 183 § 1; 1983 2nd ex.s. c 3 § 48. Formerly RCW 88.12.155, 88.12.130, and 88.02.080.]

NOTES:

Intent -- 1993 c 244: See note following RCW 79A.60.010.

RCW 79A.60.210**Casualty and accident reports -- Confidentiality -- Use as evidence.**

(1) All reports made to the commission pursuant to RCW 79A.60.200 and 79A.05.310 shall be without prejudice to the person who makes the report and shall be for the confidential usage of governmental agencies, except as follows:

(a) Statistical information which shall be made public;

(b) The names and addresses of the operator and owner and the registration number or name of the vessel as documented which was involved in an accident or casualty and the names and addresses of any witnesses which, if reported, shall be disclosed upon written request to any person involved in a reportable accident, or, for a reportable casualty, to any member of a decedent's family or the personal representatives of the family.

(2) A report made to the commission pursuant to RCW 79A.60.200 and 79A.05.310 or copy thereof shall not be used in any trial, civil or criminal, arising out of an accident or casualty, except that solely to prove a compliance or failure to comply with the report requirements of RCW 79A.60.200 and 79A.05.310, a certified statement which indicates that a report has or has not been made to the commission shall be provided upon demand to any court or upon written request to any person who has or claims to have made a report.

[1999 c 249 § 1502; 1984 c 183 § 3. Formerly RCW 88.12.165, 88.12.140, and 43.51.402.]

NOTES:

Severability -- 1999 c 249: See note following RCW 79A.05.010.

RCW 79A.60.220**Boating accident reports by local government agencies -- Investigation -- Report of coroner.**

Law enforcement authorities, fire departments, or search and rescue units of any city or county government shall provide to the commission a report, prepared by the local government agency regarding any boating accident occurring within their jurisdiction resulting in a death or injury requiring hospitalization. Such report shall be provided to the commission within ten days of the occurrence of the accident. The results of any investigation of the accident conducted by the city or county governmental agency shall be included in the report provided to the commission. At the earliest opportunity, but in no case more than forty-eight hours after becoming aware of an accident, the agency shall notify the commission of the accident. The commission shall have authority to investigate any boating accident. The results of any investigation conducted by the commission shall be made available to the local government for further processing. This provision does not eliminate the requirement for a boating accident report by the operator required under RCW 79A.60.200.

The report of a county coroner, or any public official assuming the functions of a coroner, concerning the death of any person resulting from a boating accident, shall be submitted to the commission within one week of completion. Information in such report may be, together with information in other such reports, incorporated into the state boating accident report provided for in RCW 79A.05.310(4), and shall be for the confidential usage of governmental agencies as provided in RCW 79A.60.210.

[1999 c 249 § 1503; 1987 c 427 § 1. Formerly RCW 88.12.175, 88.12.150, and 43.51.403.]

NOTES:

Severability -- 1999 c 249: See note following RCW 79A.05.010.

Boating accidents and boating safety services -- Study -- Report -- 1987 c 427: "The parks and recreation commission shall conduct a study of boating accidents and boating safety services in Washington including a review of how the local option tax for funding of boating safety enforcement is used. Further the parks and recreation commission shall develop recommendations to address identified problems and report these recommendations to the legislature by January 2, 1988." [1987 c 427 § 4.]