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# **BOAT WISCONSIN**

*A Course On  
Responsible  
Boating*

*Approved by*



# Class Plan

- ◆ **Lesson One:** Know Your Boat
- ◆ **Lesson Two:** Before You Get Underway
- ◆ **Lesson Three:** Operating Your Boat ... Safely
- ◆ **Lesson Four:** Legal Requirements of Boating
- ◆ **Lesson Five:** Boating Emergencies ... What To Do
- ◆ **Lesson Six:** Enjoying Water Sports With Your Boat

# Lesson One



## Know Your Boat

# Key Topics

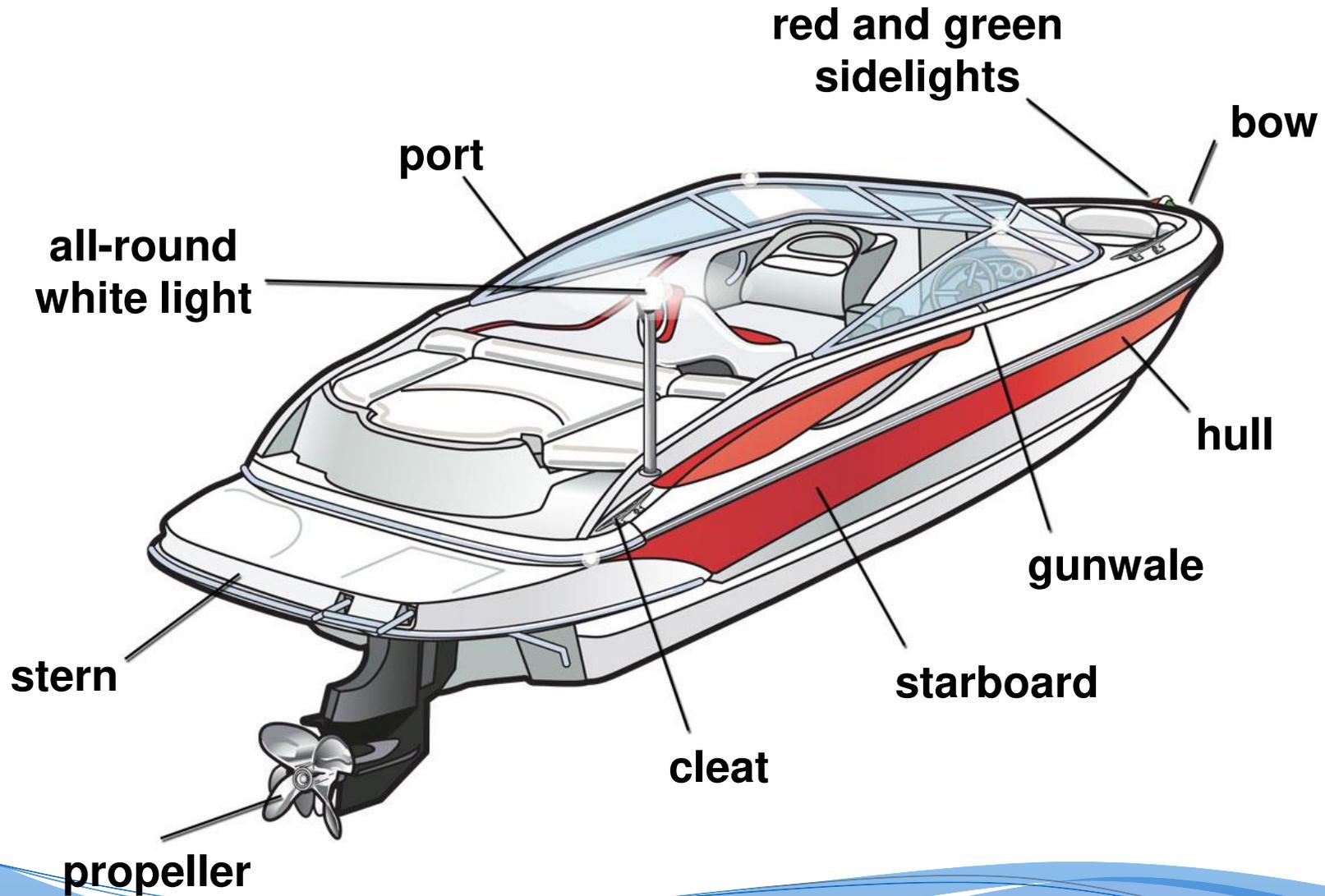
- ◆ **Parts of a Boat**
- ◆ **Types of Boat Hulls**
- ◆ **Length of a Vessel**
- ◆ **Types of Engines and Drives**
- ◆ **Personal Watercraft (PWCs)**
- ◆ **Sailboats**

# Objectives

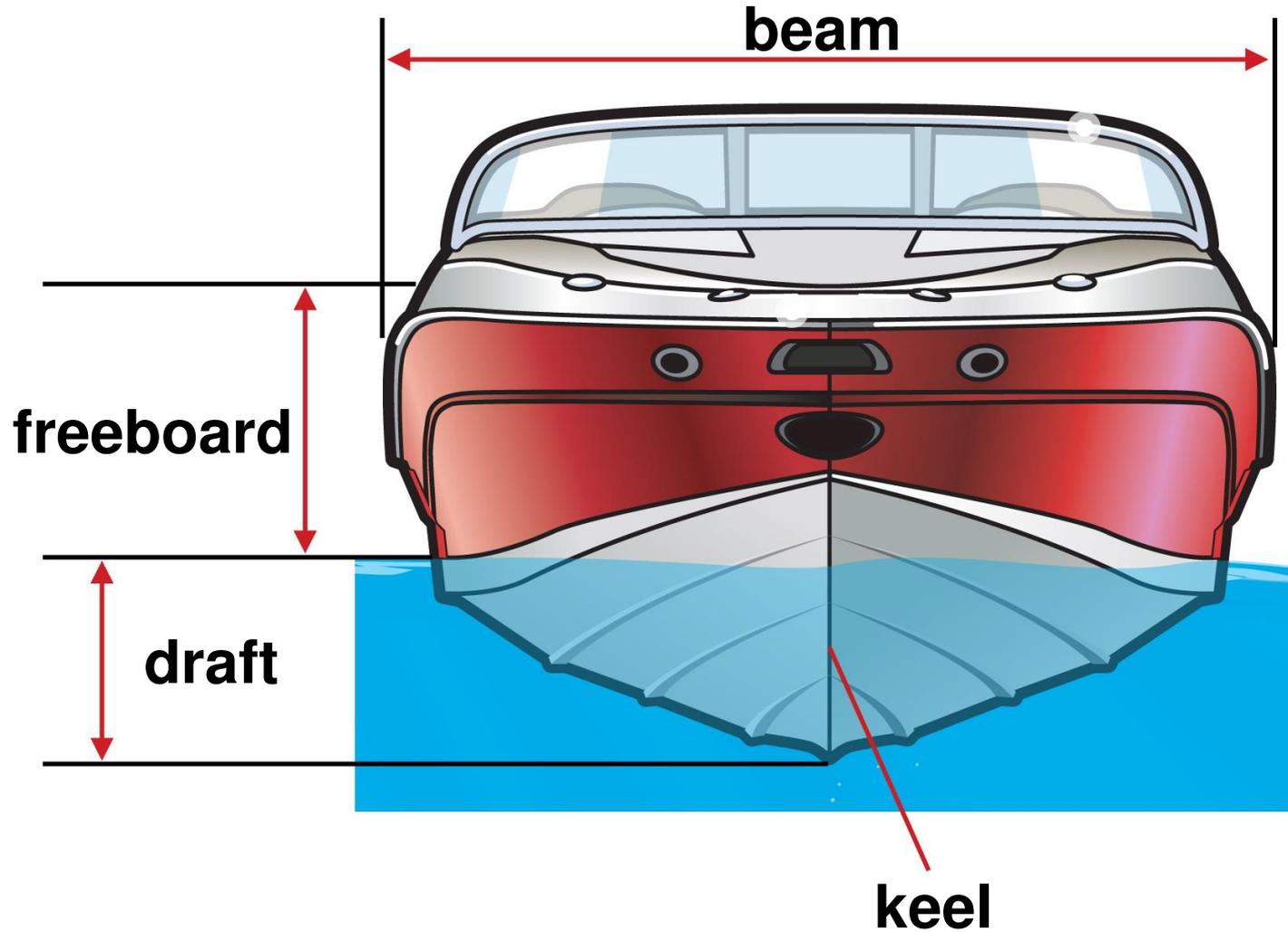
You should be able to ...

- ◆ Identify the basic parts of a boat, a PWC, and a sailboat.
- ◆ Identify the different types of hulls and their performance characteristics.
- ◆ Identify the different kinds of engines commonly found in recreational vessels.

# The Many Parts of a Boat



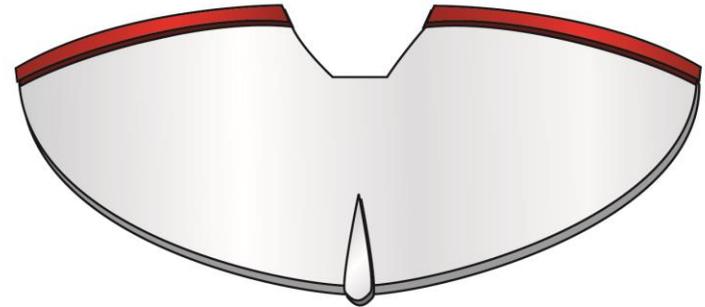
# The Many Parts of a Boat



# Types of Boat Hulls

## Displacement Hulls

### ◆ Round-Bottomed Hull

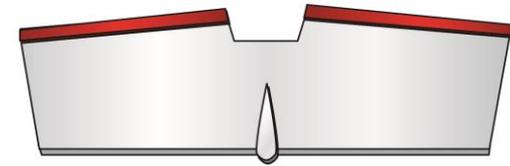


Round Bottom

# Types of Boat Hulls

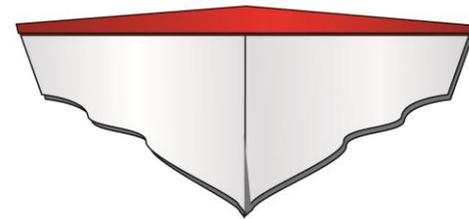
## Planing Hulls

### ◆ Flat-Bottomed Hull



Flat Bottom

### ◆ Vee-Bottomed Hull

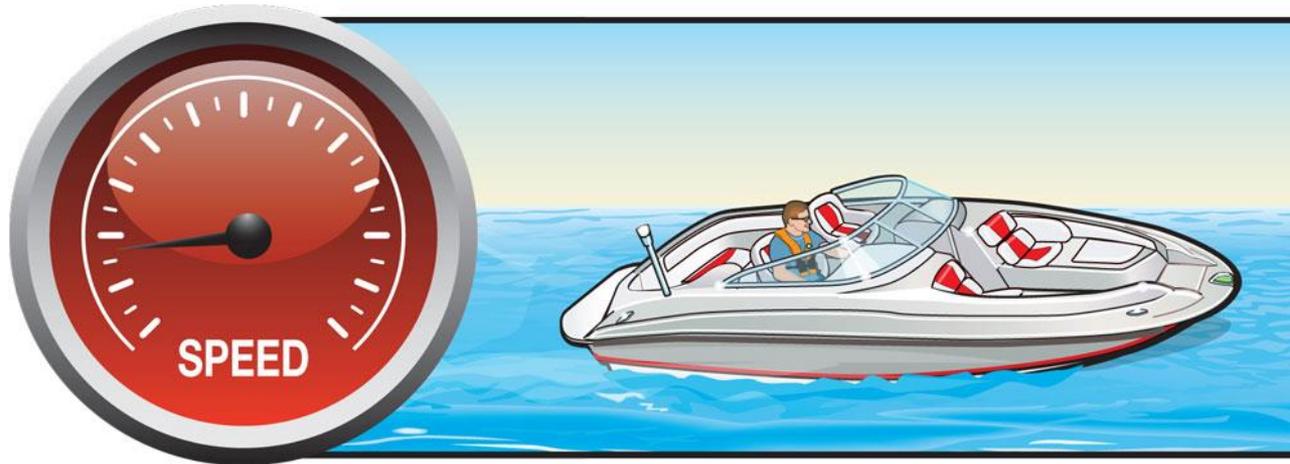


Vee Bottom

# Types of Boat Hulls

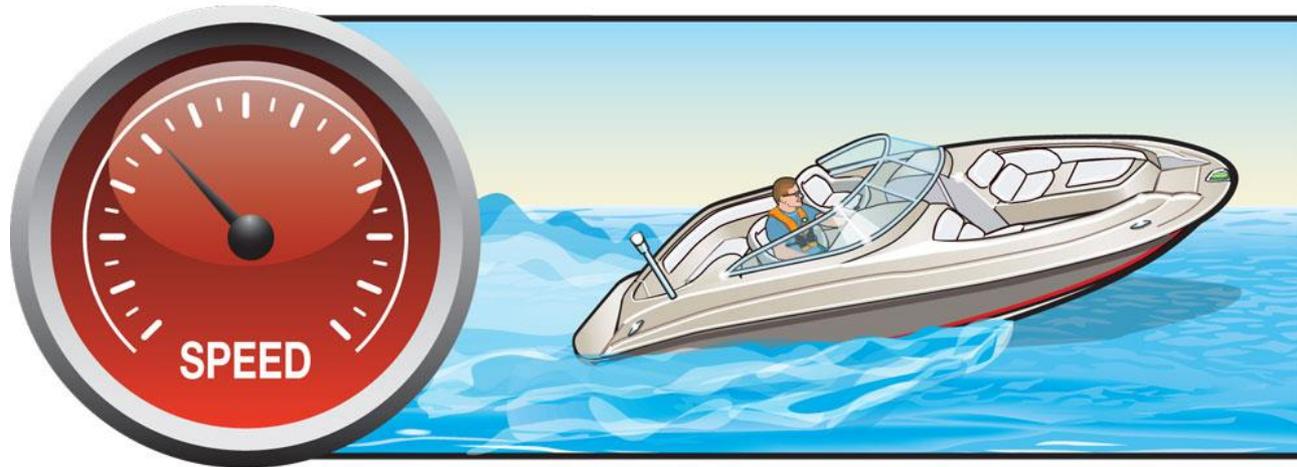
## How Planing Hulls Operate

### ◆ Displacement Mode



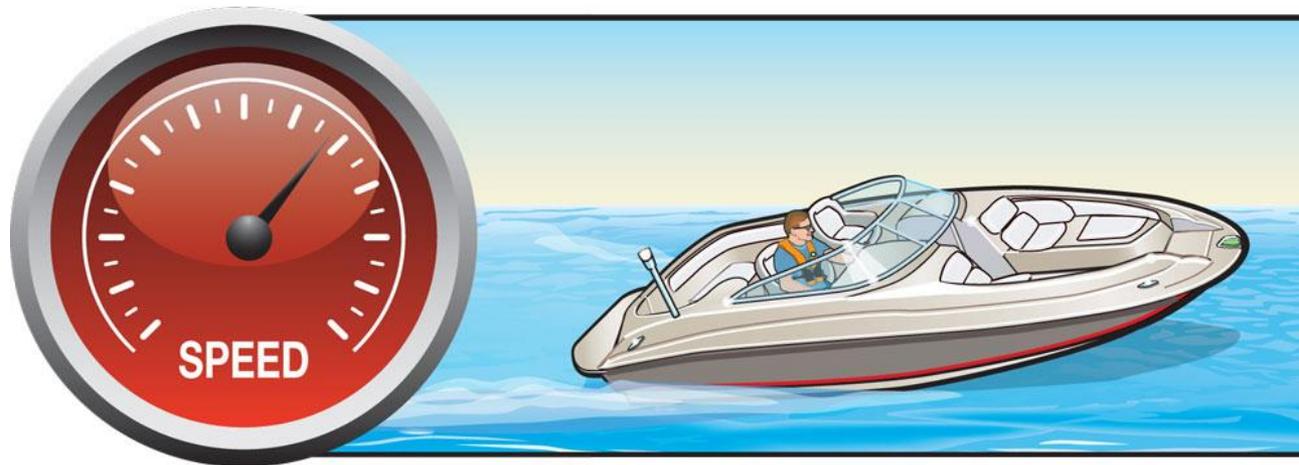
# Types of Boat Hulls

## ◆ Plowing Mode



# Types of Boat Hulls

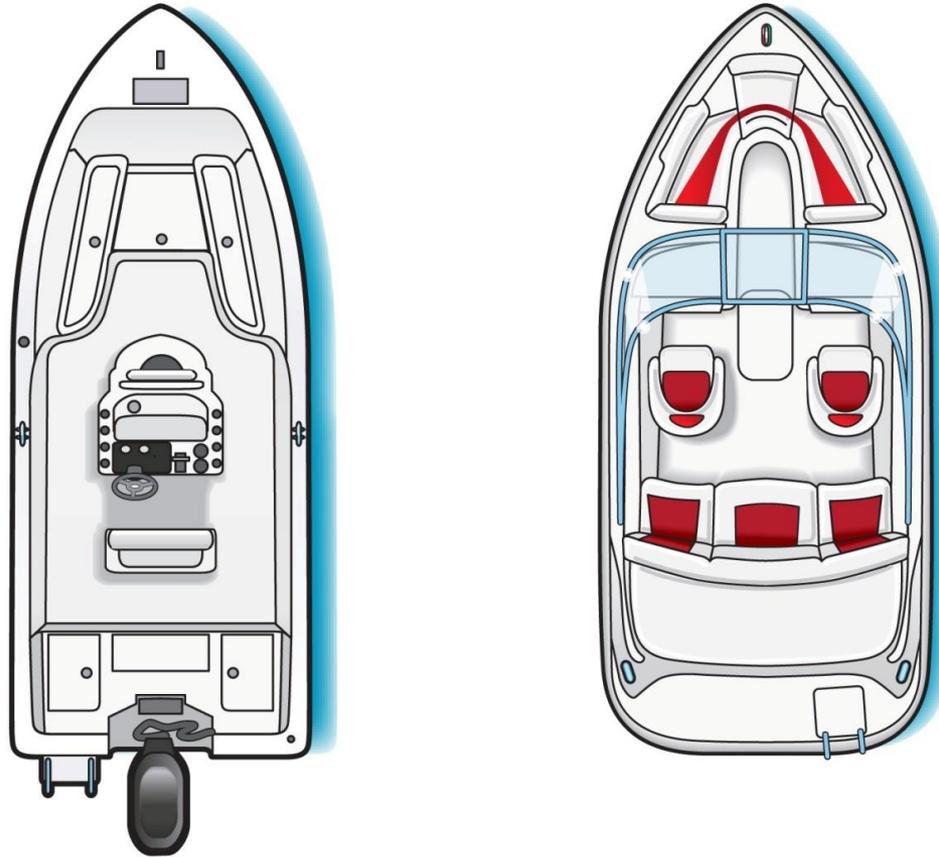
## ◆ Planing Mode



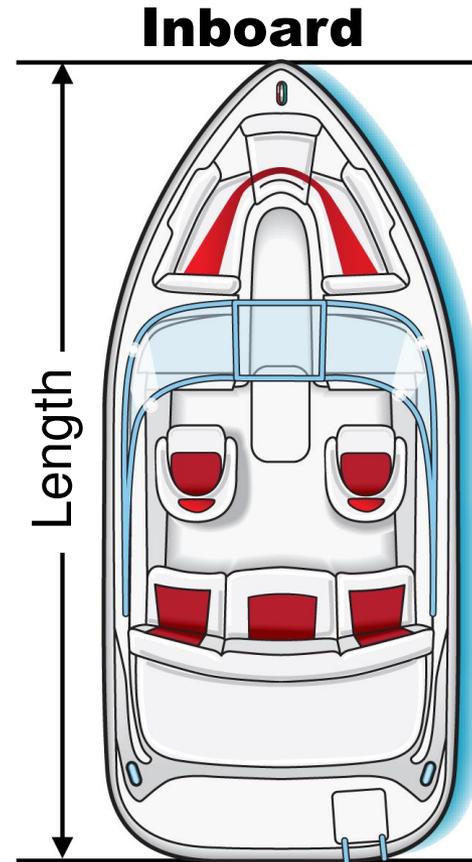
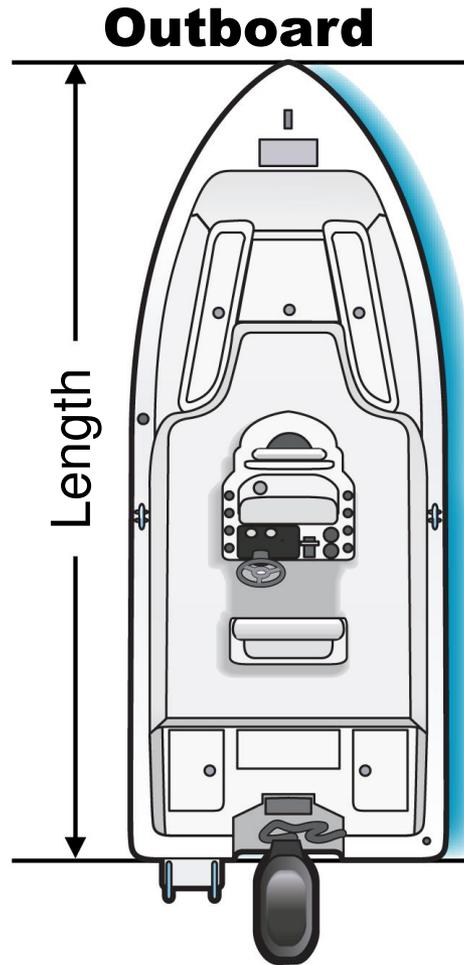
# Length of a Vessel



# Length of a Vessel

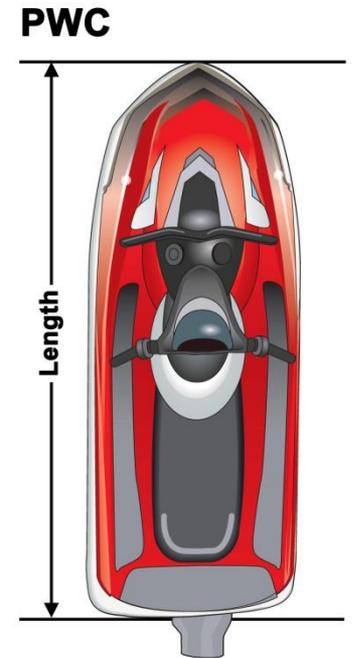


# Length of a Vessel



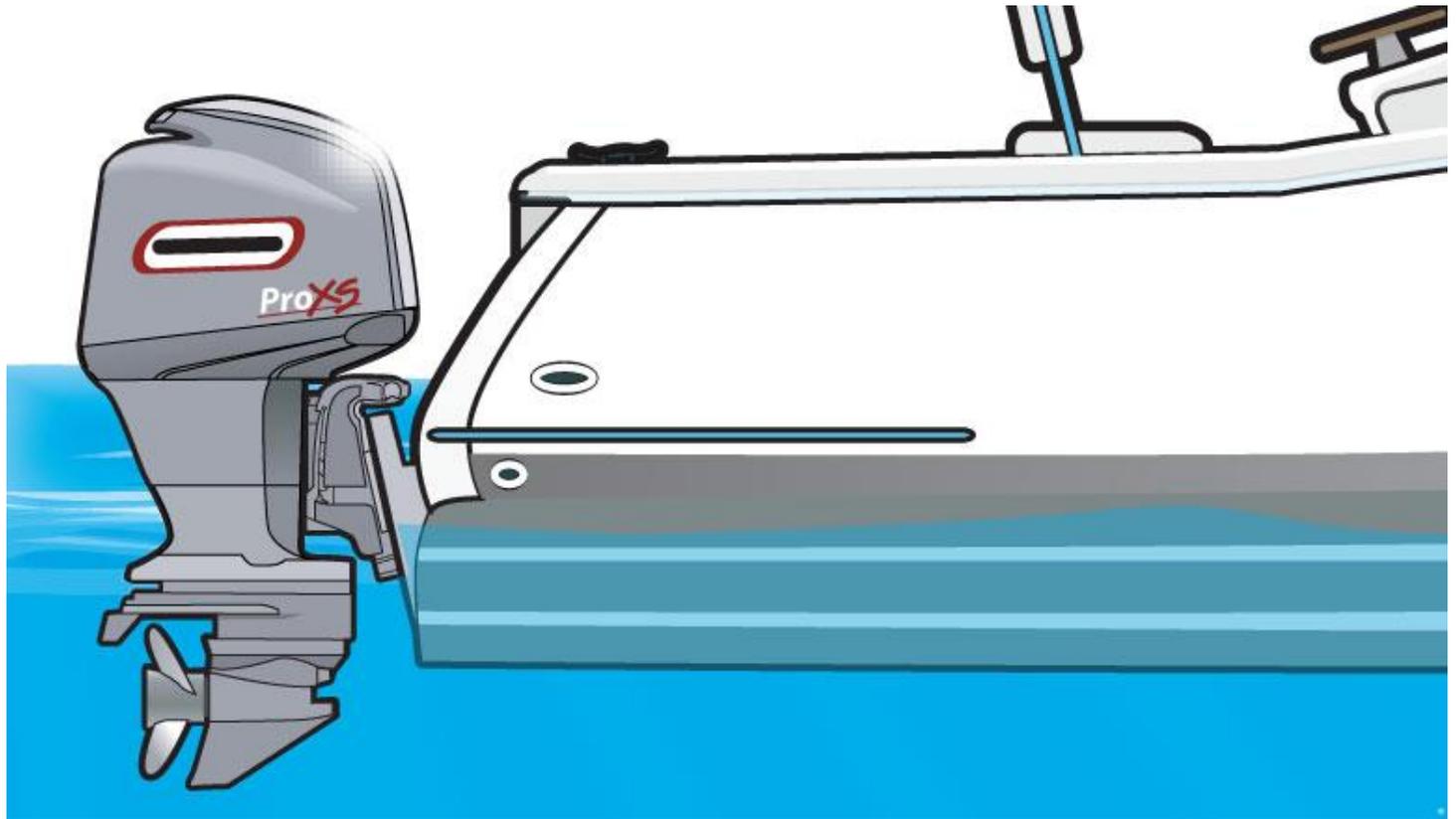
# Length of a Vessel

- ◆ Less than 16 feet (Class A)
- ◆ 16 feet to less than 26 feet (Class 1)
- ◆ 26 feet to less than 40 feet (Class 2)
- ◆ 40 feet to less than 65 feet (Class 3)



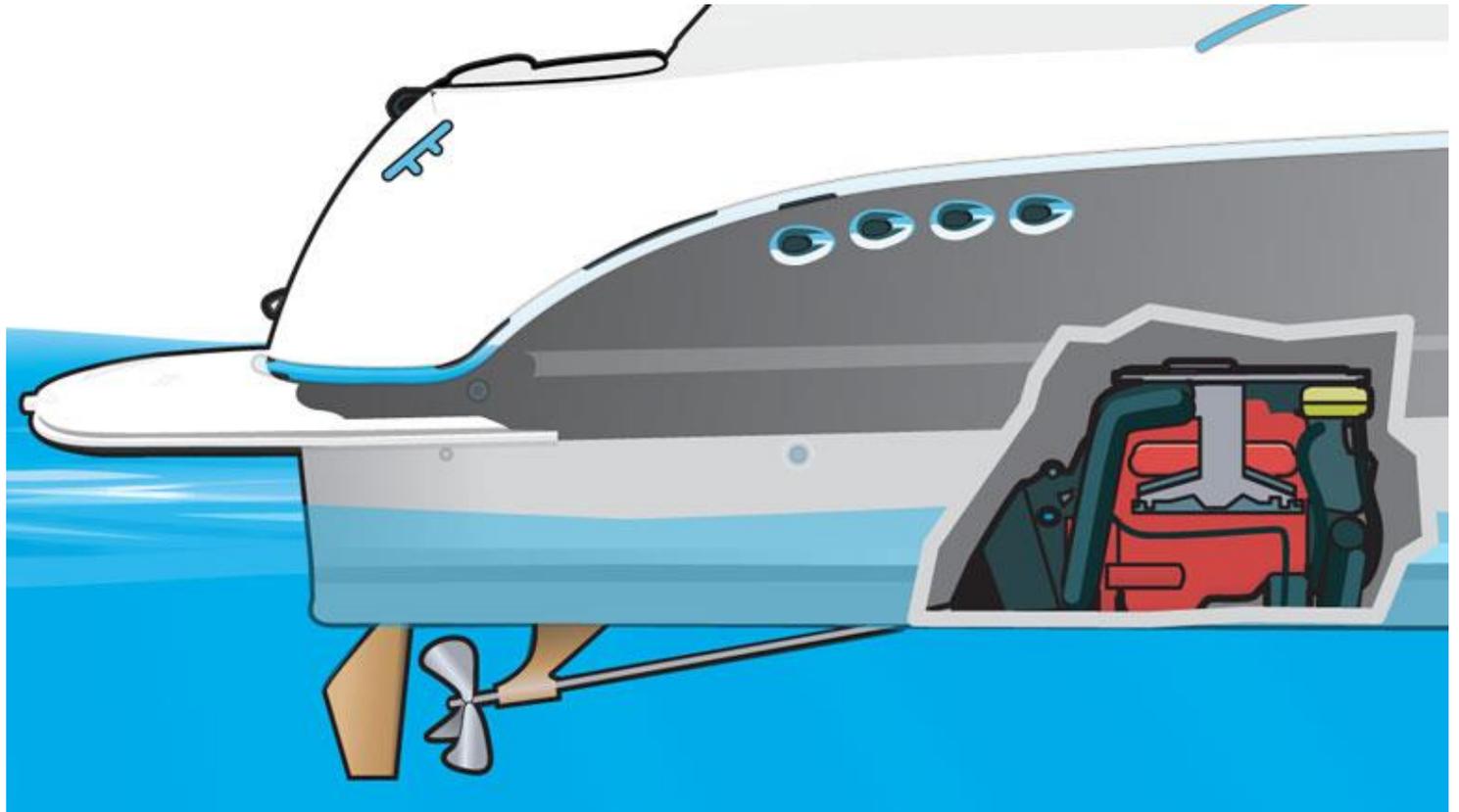
# Types of Engines and Drives

## Outboards



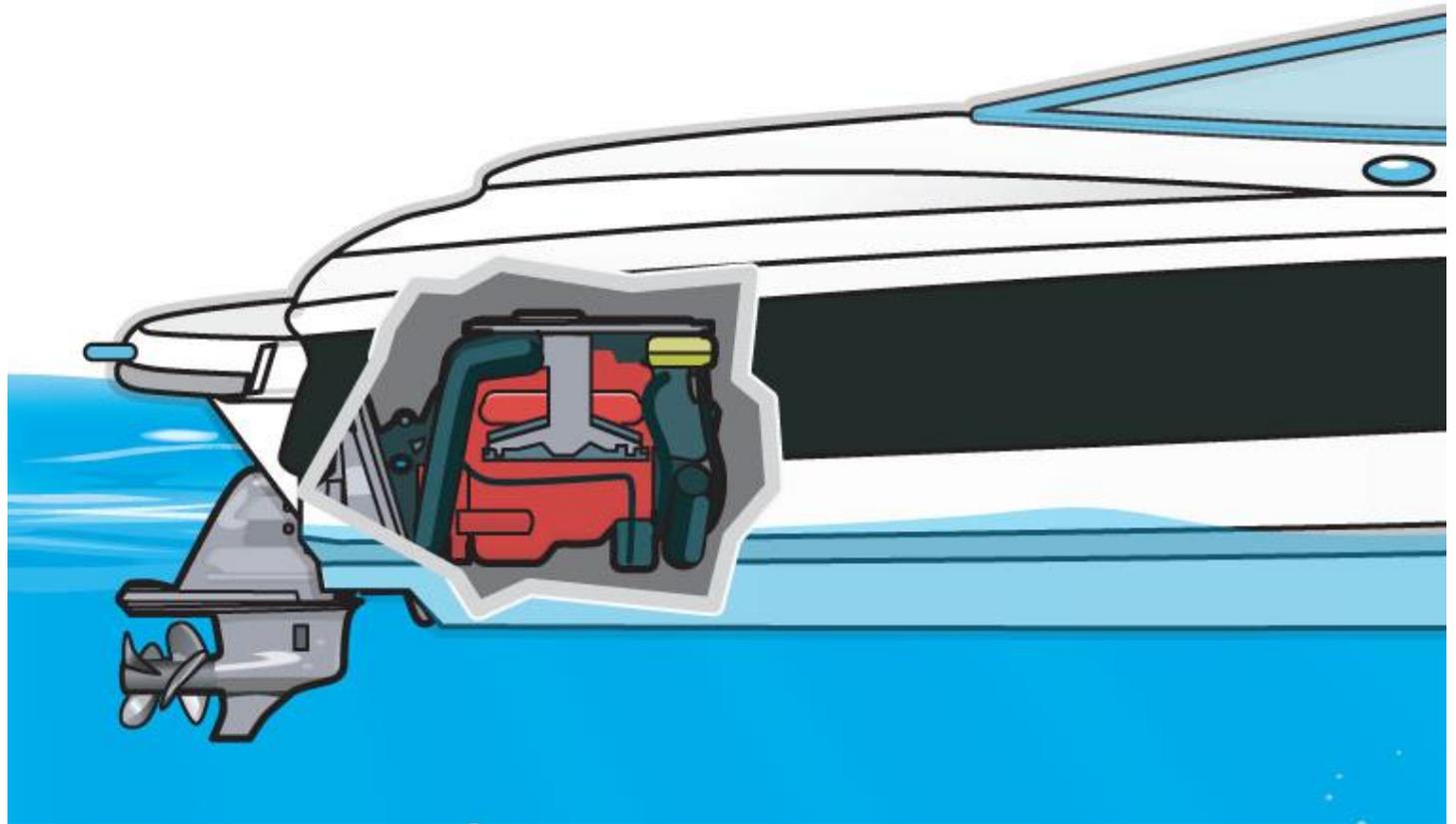
# Types of Engines and Drives

## Inboards



# Types of Engines and Drives

## Stern Drives



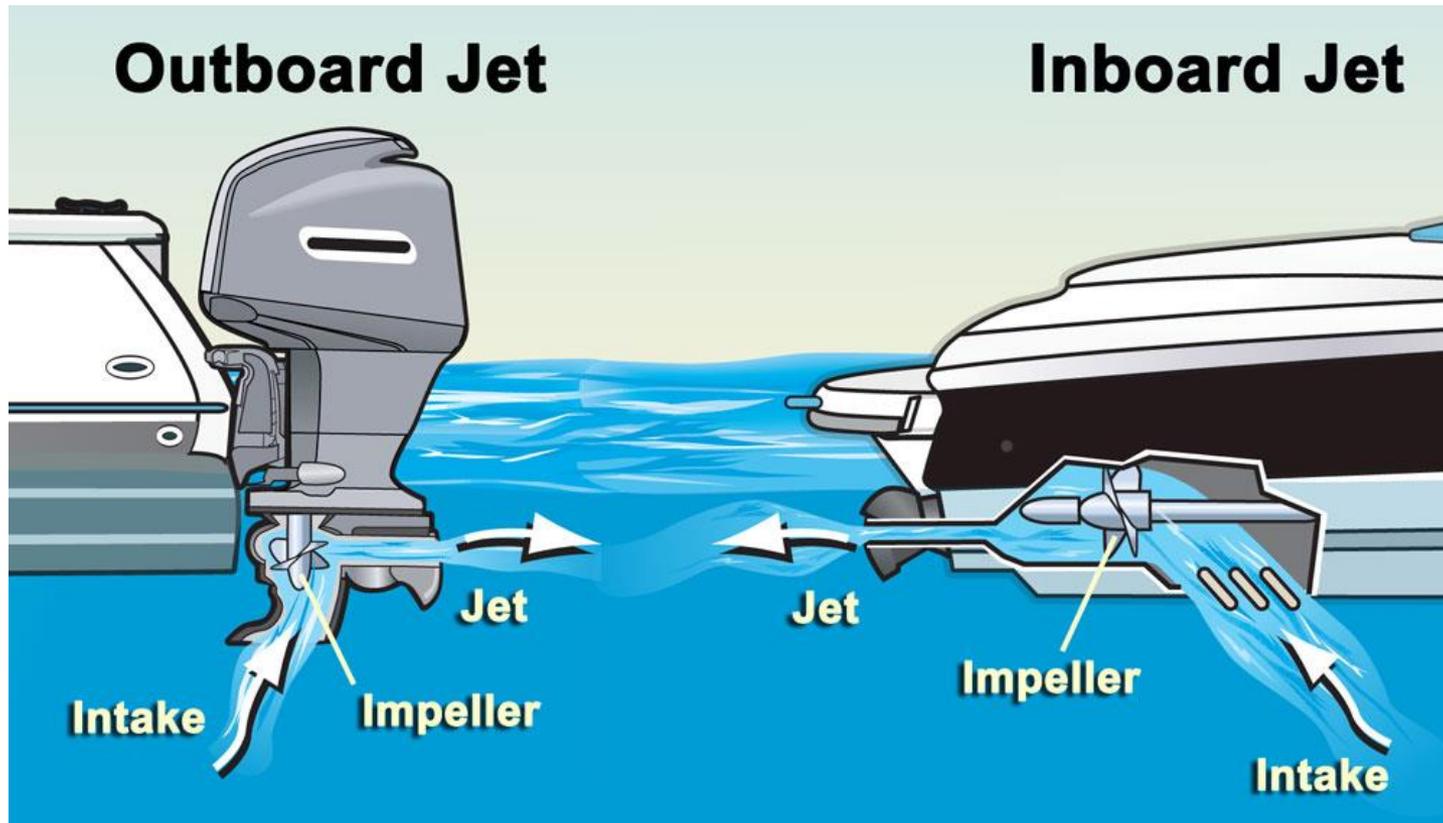
# Types of Engines and Drives

## Jet Drives



# Types of Engines and Drives

## Jet Drives



# Personal Watercraft

- ◆ **Use an inboard jet drive as primary source of propulsion.**
- ◆ **Are included in the group of inboard vessels less than 16 feet in length.**
- ◆ **Are subject to the same laws and requirements of any other vessel plus some specific to PWCs.**

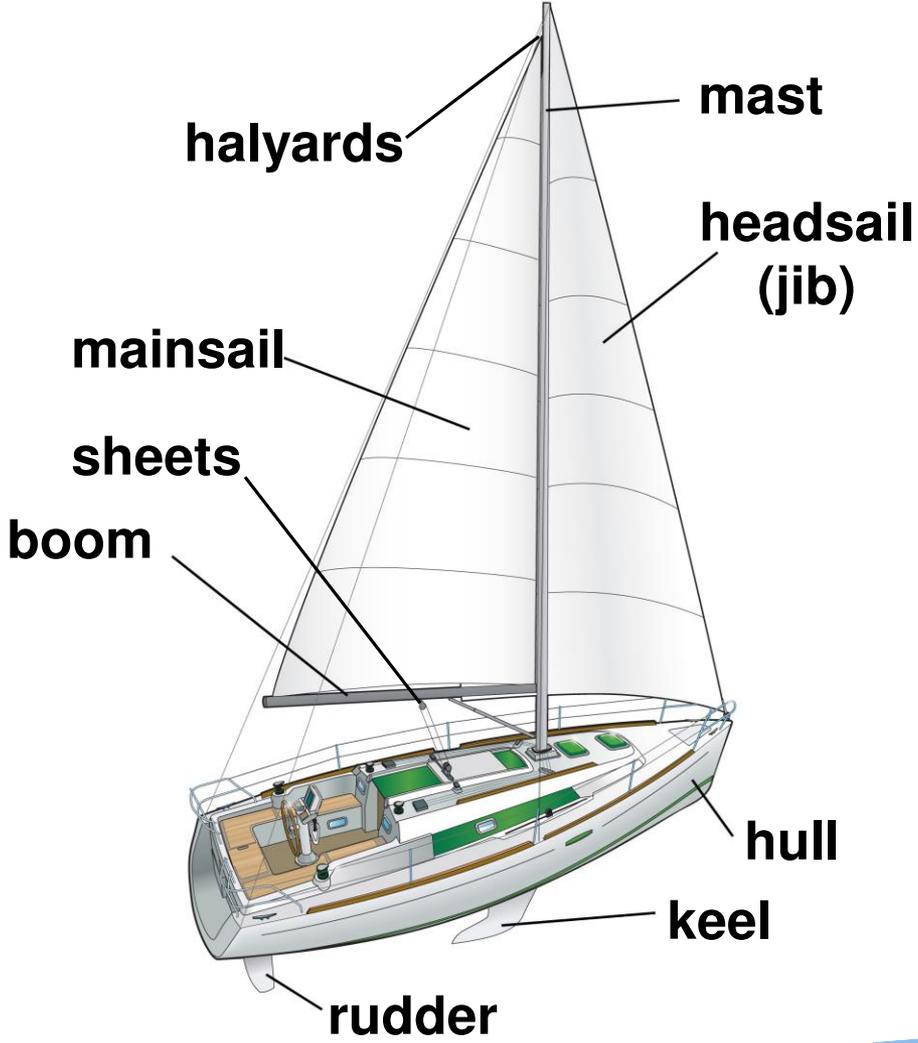
# Personal Watercraft



# Personal Watercraft



# Sailboats



# **Review Questions for Lesson 1: Know Your Boat**

*Answer a series of interactive questions.*

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10



***Drag and match each label to the correct vessel part.***



**all-round  
white light**

**bow**

**cleat**

**gunwale**

**hull**

**port**

**red and green  
sidelights**

**starboard**

**stern**



***Drag and match each label to the correct vessel part.***



**intake**

**engine**

**impeller**

**drive shaft**

**steering  
nozzle**

**safety  
lanyard**

**steering  
control**

**intake grate**

**stern**

**bow**



# Lesson Two



## Before You Get Underway

# Key Topics

- ◆ **Boat's Capacity**
- ◆ **Float Plans**
- ◆ **Fueling a Vessel and a PWC**
- ◆ **Trailer/Courtesy on the Boat Ramp**
- ◆ **Vessel and Engine Maintenance**

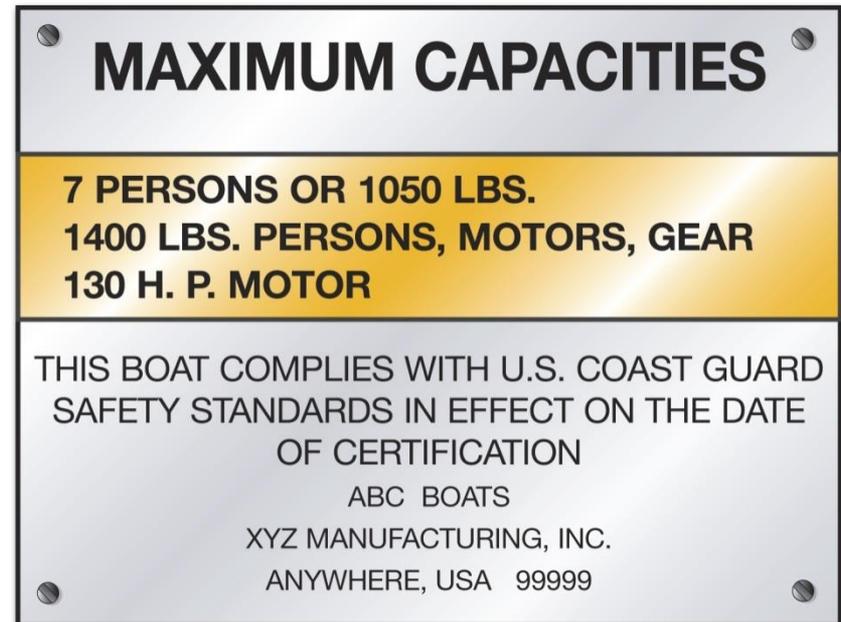
# Objectives

You should be able to ...

- ◆ **Locate and understand a boat's capacity plate.**
- ◆ **File a proper float plan.**
- ◆ **Explain how to fuel a vessel safely.**
- ◆ **Explain how to launch a vessel from a trailer and retrieve it from the water safely and courteously.**
- ◆ **Give the basics of vessel and engine maintenance.**

# Boat Capacity

- ◆ **Maximum weight includes weight of:**
  - **Passengers**
  - **Gear**
  - **Motors**



# Boat Capacity

- ◆ Do not exceed the recommended capacity found in the owner's manual and on manufacturer's warning decal.
- ◆ On outboard boats, never exceed the maximum horsepower rating shown on the capacity plate.
- ◆ On vessels less than 20 feet in length without a capacity plate:

$$\text{Number of people} = \frac{\text{vessel length (ft.)} \times \text{vessel width (ft.)}}{15}$$

# Boat Capacity

## Example:

Boat Length: 18 feet

Boat Width: 6 feet

---

Number of people =  $\frac{18 \text{ feet long} \times 6 \text{ feet wide}}{15}$

Number of people =  $\frac{108}{15}$

Number of people = 7.2 passengers  
(no more than 7 passengers)

# File a Float Plan

- ◆ For short outings, inform a responsible person of:
  - **WHERE** you are boating
  - **WHEN** you are returning
  - **WHO** to call



# File a Float Plan

- ◆ For extended outings, include:
  - WHO is going
  - WHERE you are going
  - WHAT boat you are in
  - WHEN you are leaving and returning

# File a Float Plan

**FLOAT PLAN**

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

# Fuel Your Vessel ... Safely

## ◆ Before fueling:

- Refuel away from the water.
- Tie up the boat.
- Unload all passengers.
- Turn off all sources that could result in a flame.
- Close all windows, ports, and doors.
- Unload portable fuel tanks.

# Fuel Your Vessel ... Safely

## ◆ While filling the fuel tank:

- Keep nozzle of fuel-pump hose in contact with tank opening.
- Use caution and fill tank slowly.
- Never fill tank to brim.

# Fuel Your Vessel ... Safely

## ◆ After fueling:

- Put fill cap on tightly.
- Wipe up any spilled fuel.
- Open all windows, ports, doors, and other openings.
- Turn on exhaust blower for four minutes.
- Sniff for fuel vapors.
- Start engine and reload passengers.

# Fuel Your Vessel ... Safely

- ◆ To make sure you do not run out of fuel, use this rule:
  - One-third to get out
  - One-third to get back
  - One-third in reserve

# Fuel Your Vessel ... Safely

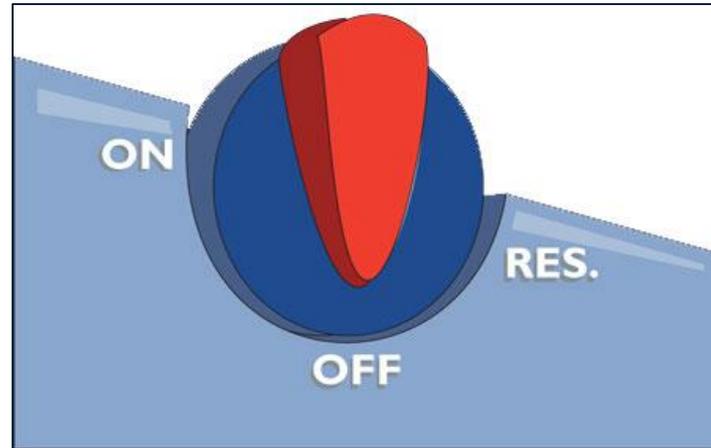
## Fueling Issues for a PWC

- ◆ Check fuel system for leaks and inspect connections frequently.
- ◆ Avoid fuel spills in or near water.
- ◆ **Do not tip PWC to fill all the way up.**
- ◆ After fueling, sniff to check for gas fumes.



# Fuel Selector Switch on a PWC

- ◆ OFF
- ◆ ON
- ◆ RESERVE



# Trailer Your Vessel

## Choose the Right Trailer & Vehicle To Tow Your Vessel

- ◆ **The trailer and towing vehicle should be designed to fit your vessel.**
  - **Use the size of vessel to determine the trailer's dimensions.**

# Trailer your Vessel

- **Make sure the weight of the vessel and engine does not exceed 90% of trailer's load capacity. The trailer must carry your:**
  - **Vessel**
  - **Engine**
  - **Fuel**
  - **Gear**



# Trailer Your Vessel

## Example:

Boat Size: 19 feet long

Weight of Vessel: 2600 lbs. (Includes weight of engine, fuel, and gear)

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Which capacity trailer would you choose?



2300 lbs.

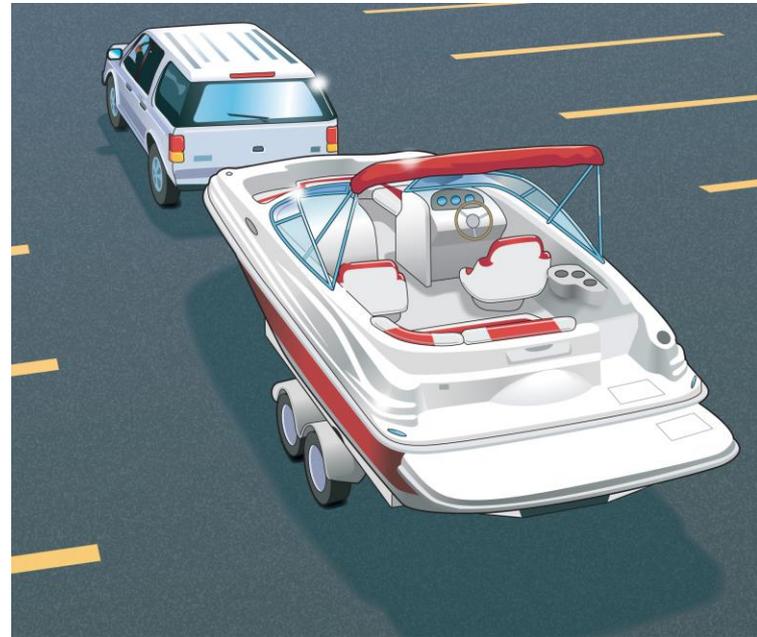
OR

3000 lbs.

# Trailerding Your Vessel

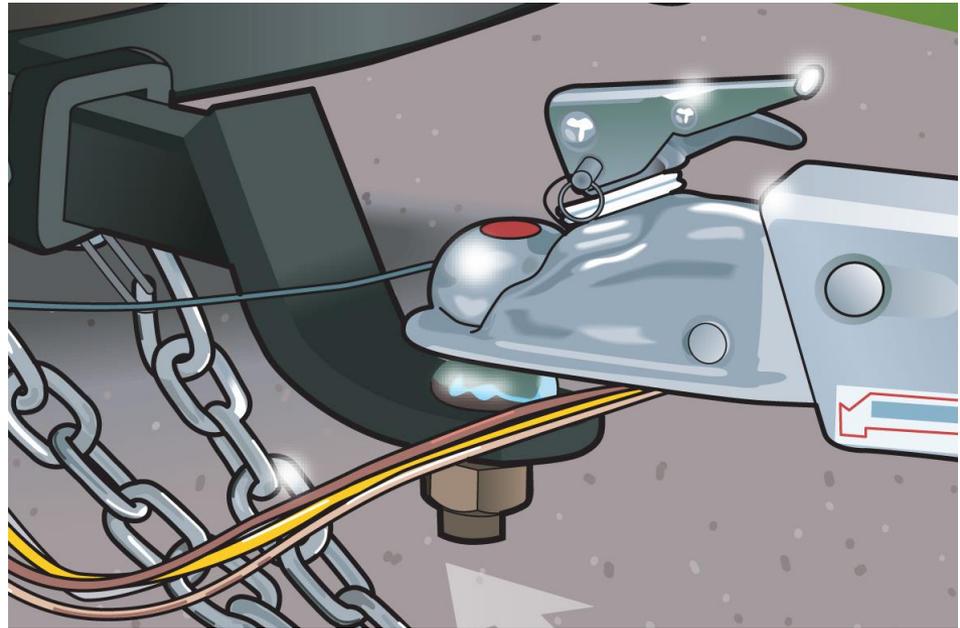
## Choosing the Right Vehicle

- The towing vehicle must be rated to tow the combined weight of:
  - Vessel
  - Engine
  - Trailer



# Trailer Your Vessel

- ◆ **Towing hitch must be appropriate for the loaded trailer.**
  - **Ball Hitch**
  - **Coupler**
  - **Tongue Weight**



# Trailer Your Vessel

## Example:

The trailer for the boat has a  $2 \frac{5}{16}$ " coupler.

Which of the following sizes of ball hitch must be used on the towing vehicle?



$2 \frac{1}{4}$ "

$2 \frac{1}{2}$ "

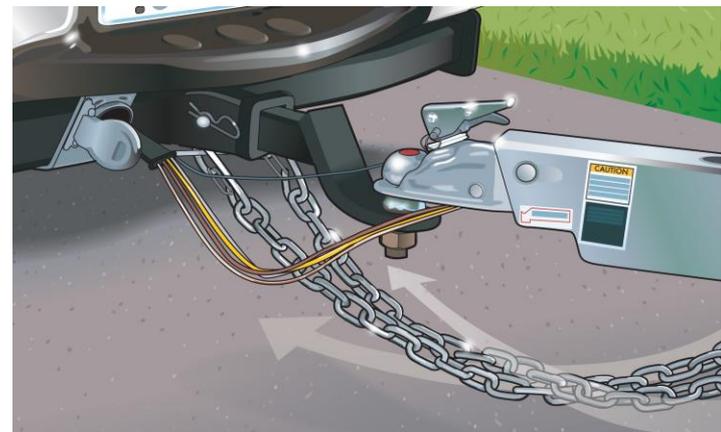
$2 \frac{5}{16}$ "

$2 \frac{3}{8}$ "

# Trailerding Your Vessel

## Before leaving home:

- ◆ Secure all gear in the vessel.
- ◆ Secure the vessel to the trailer.
- ◆ Secure engine.
- ◆ Crisscross two safety chains under the trailer tongue.



# Trailer Your Vessel

- ◆ **Inspect and maintain trailering equipment.**
  - **Check tire pressure on all tires.**
  - **Tighten lug nuts.**
  - **Grease wheel bearings.**
  - **Check lights and brakes.**
  - **Check tie-down straps, lines, winch, safety chains, and hitch.**



# Trailer Your Vessel

## On the Road With a Trailer

- ◆ **Drive cautiously.**
  - Drive at moderate speeds.
  - On long trips, pull over every hour or so to check vehicle, trailer, and gear.
- ◆ **Allow for added length and weight of trailer.**
  - Make wider turns at corners and curves.
  - Allow extra time and distance to stop and pass.

# Trailerding Your Vessel

## Launching Your Vessel from a Trailer

- ◆ **Don't block ramp traffic!**
  - **Transfer all gear to the vessel.**
  - **Disconnect trailer lights.**
  - **Leave the winch line secured to the vessel.**
  - **Remove tie-down straps.**
  - **Ensure drain plug is in place.**
  - **Tie a rope to the vessel's bow.**



# Trailer Your Vessel

- ◆ **Back the trailer into the water.**
  - **Set the parking brake on the towing vehicle.**
  - **Lower the vessel's engine or outdrive.**
  - **Start the engine.**
  - **Back the trailer into the water until the vessel floats.**
  - **Undo the winch line. Back the vessel off the trailer.**

# Trailerding Your Vessel

## Retrieving Your Vessel

- ◆ Wait for your turn.
- ◆ Back the trailer into the water.
  - Set parking brake.
  - Attach winch line.
  - Shut off engine.
  - Raise engine or outdrive.
  - Pull trailer out of the water.



# Trailerding Your Vessel



# Trailerding Your Vessel

- ◆ Prepare for drive home well away from boat ramp.
  - Do not block ramp traffic.
  - Remove and dispose of all aquatic nuisance species.
  - Remove the drain plug.
  - Secure your vessel and gear.



# Trailer Your Vessel

## Courtesy on the Boat Ramp

- ◆ **Prepare your vessel for launching well away from the ramp.**
- ◆ **Use at least two experienced people to launch and retrieve.**
- ◆ **Never block ramp with unattended vessel or vehicle.**

# Trailer Your Vessel

- ◆ When retrieving, **do not** pull vessel into launch lane until towing vehicle is at ramp.
- ◆ After retrieving your vessel, pull well away from ramp before preparing for the drive home.

# Vessel Maintenance

- ◆ **Examine the hull when it is out of the water.**
- ◆ **Store vessels in a dry area out of the sun.**
- ◆ **Clean all lines, and keep them out of the sun.**
- ◆ **Clean sails, and make repairs.**
- ◆ **Follow the maintenance schedule in the owner's manual.**

# Engine Maintenance

**Follow a regular maintenance program.**

- ✓ **Keep engine clean and tuned properly.**
- ✓ **Check oil and fluid levels before every outing.**
- ✓ **Tighten battery connections. Clean battery terminals.**
- ✓ **Inspect hoses, belts, and bolts.**
- ✓ **Never use automotive electrical parts.**

# Preventing Theft

- ◆ **Store vessel so it is not easily accessed.**
- ◆ **Chain and lock motor and fuel tanks to vessel.**
- ◆ **Mark or engrave all equipment.**
- ◆ **Photograph or videotape interior and exterior of vessel. Make a complete inventory.**
- ◆ **Remove all valuables.**
- ◆ **Cover vessel and remove keys.**

# ***Review Questions for Lesson 2: Before You Get Underway***

***Answer a series of interactive questions.***

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9



# Lesson Three



## Operating Your Boat ... Safely

# Key Topics

- ◆ **Casting Off and Docking**
- ◆ **Navigation Rules**
- ◆ **Navigation Lights**
- ◆ **Night Navigation**
- ◆ **Sound Signals**
- ◆ **Navigational Aids**

# Key Topics

- ◆ **Anchoring**
- ◆ **Dams, Locks, and Bridges**
- ◆ **Changing Water Levels**
- ◆ **Compasses and Charts**
- ◆ **PWC Operation**
- ◆ **Ignition Safety Switches**
- ◆ **Avoiding Propeller Strike Injuries**

# Objectives

You should be able to ...

- ◆ **Cast off and dock under different wind and current conditions.**
- ◆ **Give three major responsibilities of a vessel operator.**
- ◆ **Explain what to do when encountering another vessel.**
- ◆ **List the types of nighttime navigation lights and explain how to interpret them.**

# Objectives

- ◆ **Use and understand sound signals.**
- ◆ **Explain what to do when encountering buoys and markers of the U.S. Aids to Navigation System.**
- ◆ **Anchor a vessel correctly.**
- ◆ **Explain what to do when encountering various hazards—dams, locks, bridges, and changing water levels.**

# Objectives

- ◆ **Explain how to use a compass and read a nautical chart.**
- ◆ **Operate a PWC safely and courteously.**
- ◆ **Explain how an ignition safety switch works.**
- ◆ **Explain how to avoid propeller strike injuries.**

# Casting Off

## ◆ Before casting off:

- **Keep the boat tied to dock while the engine warms up.**
- **Make sure everyone is seated and wearing a life jacket.**
- **Check that the engine is running properly and the area is clear of traffic.**

# Casting Off

- ◆ **If there is no wind or current:**
  - **Cast off the bow and stern lines.**
  - **Shift to forward.**
  - **Slowly move forward, gradually turning the boat away from the dock.**

# Casting Off



# Casting Off



# Docking

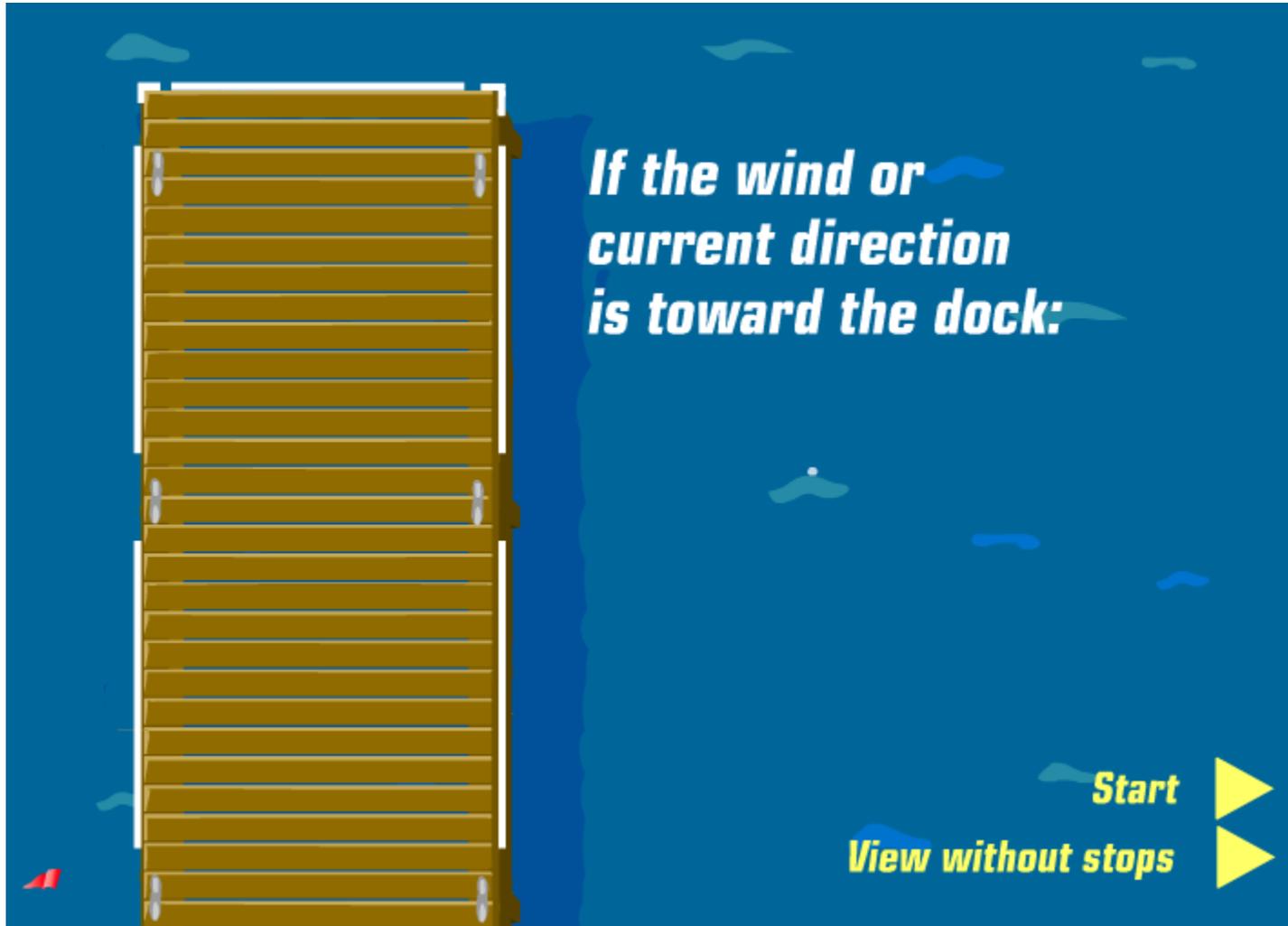
**As you approach the dock:**

- ◆ **Slow down.**
- ◆ **Wait for traffic to clear.**
- ◆ **Get bow and stern lines ready.**
- ◆ **Head into the wind or current—whichever is stronger.**
- ◆ **Put boat fenders in place.**

# Docking



# Docking



# Docking



# Navigation Rules

**Three basic rules of navigation:**

- ◆ **Practice good seamanship.**
- ◆ **Keep a proper lookout.**
- ◆ **Maintain a safe speed.**

# Navigation Rules

- ◆ Two terms help explain what to do when encountering other vessels.



Give-Way Vessel

Stand-On Vessel

# Navigation Rules

- ◆ **The action a vessel operator should take when encountering another vessel depends on:**
  - **How the two vessels are propelled**
  - **How the two vessels are approaching one another**

# Navigation Rules

## Rules of Responsibility

- ◆ All boaters are responsible for preventing collisions.
- ◆ If you must make a departure from the navigation rules, make this decision based on:
  - All the dangers of navigation
  - The risk of a collision
  - Any special conditions

# Navigation Rules

## ◆ Always give way to:

- Anchored or disabled vessels
- Vessels restricted in their ability to maneuver
- Vessels constrained by their draft
- Commercial fishing vessels

# Navigation Rules

## Navigation During Restricted Visibility

- ◆ **Keep a safe speed for the conditions.**
- ◆ **Slow down to avoid a collision.**
- ◆ **Reduce speed to idle speed if necessary.**

# Navigation Rules

**Power-Driven Vessel  
Encountering Power-Driven  
Vessel, Meeting Head-On**

**Start**



***View without stops***



# Navigation Rules

**Power-Driven Vessel  
Encountering Power-Driven  
Vessel on Paths That Cross**

**Start**



**View without stops**



# Navigation Rules

**Power-Driven Vessel Overtaking a  
Power-Driven Vessel**

**Start**



***View without stops***



# Navigation Rules

**Sailing Vessel Encountering Sailing  
Vessel, Wind on Same Side**

**Start**



***View without stops***



# Navigation Rules

**Sailing Vessel Encountering Sailing  
Vessel, Wind on Different Sides**

**Start**

***View without stops***



# Navigation Rules

*Power-Driven Vessel  
Encountering Sailing Vessel,  
Meeting Head-On*

**Start**



**View without stops**



# Navigation Rules

*Power-Driven Vessel  
Encountering Sailing Vessel  
on Paths That Cross*

*Start*



*View without stops*



# Navigation Rules

*Power-Driven Vessel Overtaking a  
Sailing Vessel, OR Sailing Vessel  
Overtaking a Power-Driven Vessel*

**Start**

**View without stops**



# Night Navigation



# Night Navigation



Lights – red, green, white

# Night Navigation



Lights – white

# Night Navigation



Lights – green, white

# Night Navigation



Lights – red, white

# Night Navigation



Lights – green

# Night Navigation



Lights – red

# Night Navigation



Lights – red, green

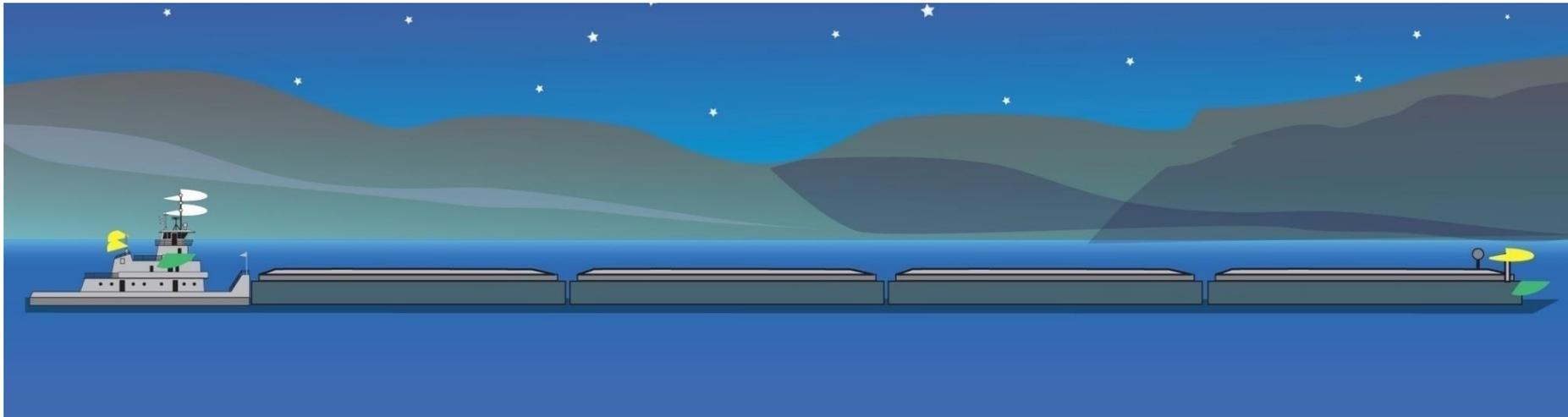
# Night Navigation

- ◆ **Boats must use navigation lights:**
  - From sunset to sunrise
  - When visibility is restricted
- ◆ **Lights tell you:**
  - If the other vessel is power-driven or under sail
  - Which way the other vessel is going
- ◆ **Follow the same navigational rules used in the daytime.**

# Night Navigation

## Towing Lights

- ◆ When commercial vessels are towing, they display one or more yellow lights in place of a sternlight.



# Sound Signals

- ◆ **Sound signals use short and prolonged blasts. They must be audible for at least one-half mile.**
  - **Short blast—about one second in duration**
  - **Prolonged blast—4-6 seconds in duration**

# Sound Signals

- ◆ **Change in Direction**
  - **One short blast**
  - **Two short blasts**
  - **Three short blasts**

# Sound Signals

## ◆ Poor Visibility

- One prolonged blast every two minutes
- One prolonged blast + two short blasts every two minutes

# Sound Signals

## ◆ Danger

- One prolonged blast
- Five or more short, rapid blasts

# U.S. Aids To Navigation System

## Lateral Markers

**Nun Buoys:  
Red With Even Numbers**



**Can Buoys:  
Green With Odd Numbers**



# U.S. Aids To Navigation System

## Lighted Buoys

### Green Colors and Lights



### Red Colors and Lights



# U.S. Aids To Navigation System

## Daymarks (on a fixed post or piling)

Reflective Green, Odd Numbers



Reflective Red, Even Numbers



# U.S. Aids To Navigation System

“Red, Right, Returning”



# U.S. Aids To Navigation System

## Lateral Markers—(ICW)

Keep on your port (left) side



Keep on your starboard (right) side



# U.S. Aids To Navigation System

## Western Rivers System Marker



**Indicates 73.5 miles from the  
river mouth**

# U.S. Aids To Navigation System

## Non-Lateral Markers

Information



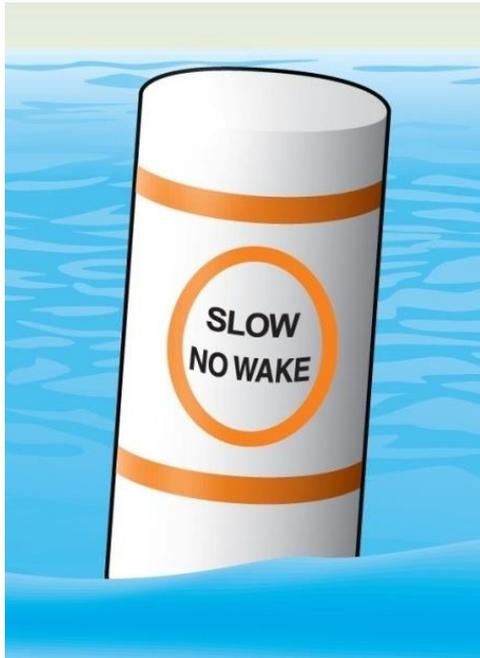
Danger Area



# U.S. Aids To Navigation System

## Non-Lateral Markers

Controlled Area



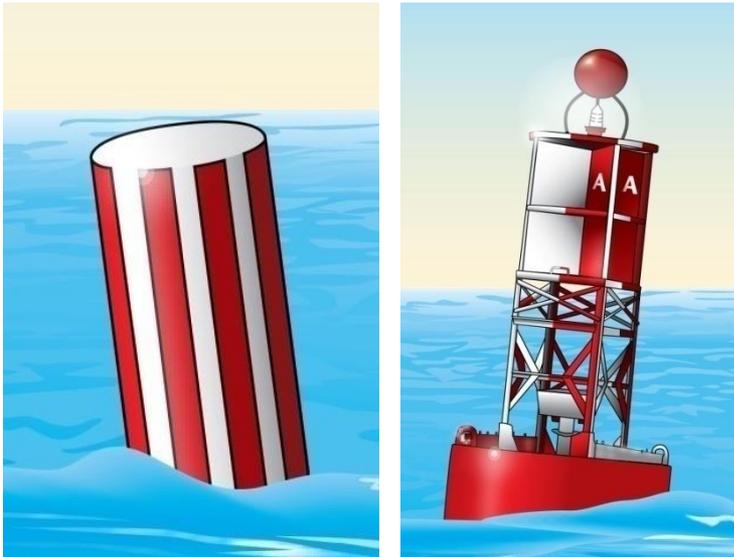
Exclusion Area



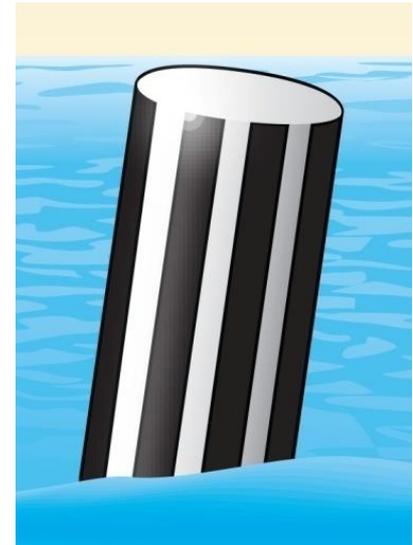
# U.S. Aids To Navigation System

## Other Non-Lateral Markers

### Safe Water Markers



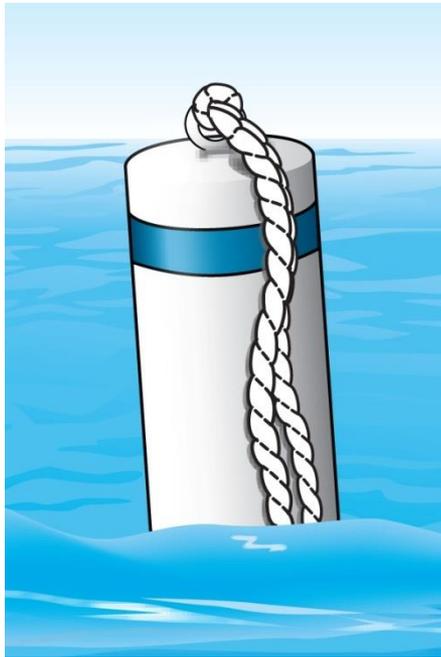
### Inland Waters Obstruction Marker



# U.S. Aids To Navigation System

## Other Non-Lateral Markers

### Mooring Buoys



# U.S. Aids To Navigation System

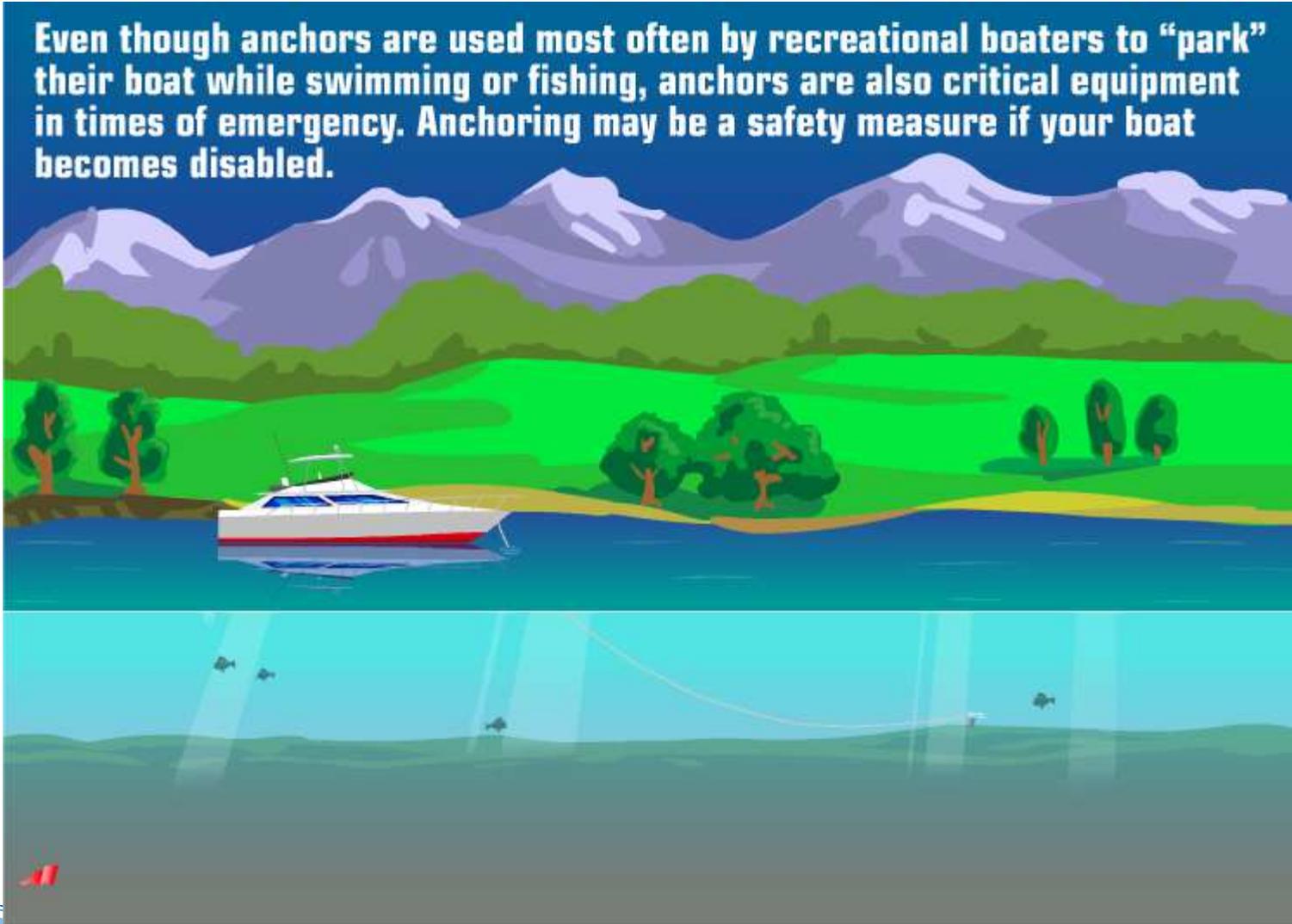
*"U.S. Aids to Navigation System  
(ATON)"*

**Start**



# Anchoring

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



# Dams, Locks, and Bridges

## *Dangers Posed by Low-Head Dams*

*The low-head dam is the most dangerous type of dam and has been named the “drowning machine.”*



Start



# Dams, Locks, and Bridges



# Dams, Locks, and Bridges

## Bridges

- ◆ Reduce speed and proceed with caution.
- ◆ Check clearance before passing under a bridge.
- ◆ For drawbridges, contact the bridge operator.
- ◆ Watch for debris that collects around pilings.



# Changing Water Levels

- ◆ **Be aware that water levels can change rapidly and cause hazards.**
  - **Running aground**
  - **Docking to a fixed pier**
- ◆ **Learn about the tides when boating on coastal waters.**
  - **Fluctuating water levels**
  - **Strong tidal currents**

# Compasses and Charts

## Steering Compass



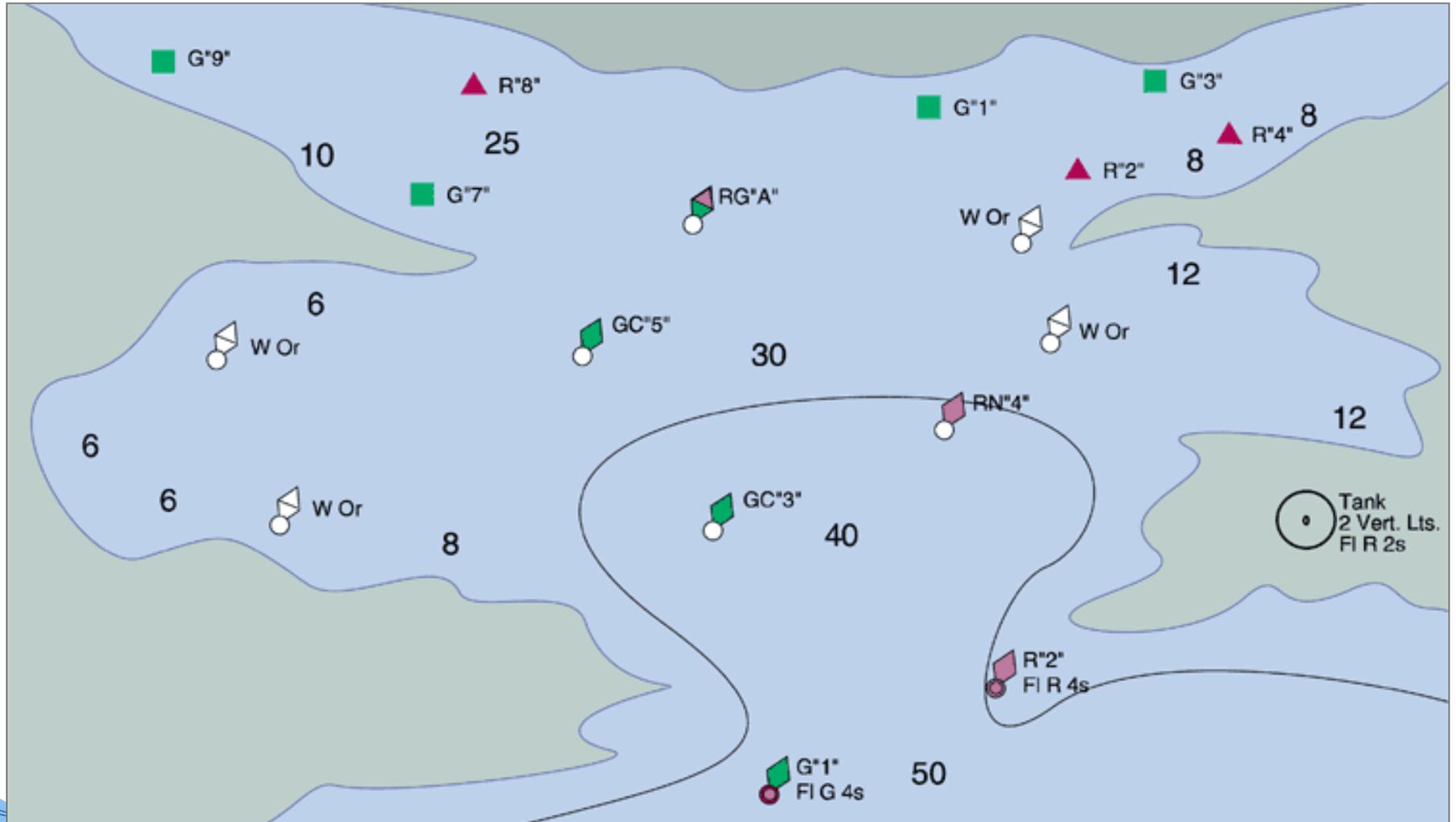
- ◆ Can be invaluable in bad weather at night.
- ◆ Mount it away from iron, magnets, and electrical wiring and equipment.

# Compasses and Charts

## Nautical Charts

- ◆ In bays or large lakes, charts give:
  - water depths
  - locations of channels, sand bars, rocks, and vegetation
  - most direct course possible

# Compasses and Charts



# Operating a Personal Watercraft (PWC)

## *Personal Watercraft*



**Start** ►

# Operating a Personal Watercraft

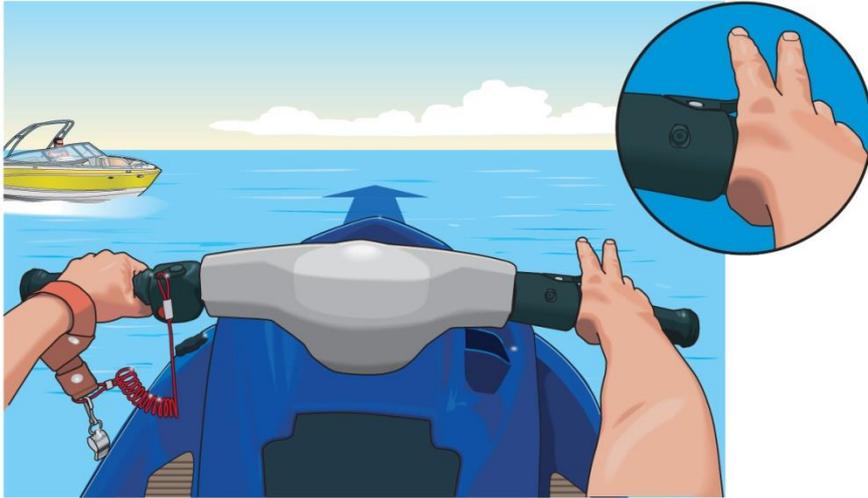
## Steering and Stopping a PWC

- ◆ Most PWCs must have power to change direction.



The operator is holding down the throttle lever and steering the PWC straight ahead.

# Operating a Personal Watercraft



The operator releases the throttle lever.



The PWC continues to go straight ahead even though the operator is trying to turn right.

◆ Newer PWCs allow for off-throttle steering.

# Operating a Personal Watercraft

## *Environmental Considerations*

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



# Operating a Personal Watercraft

## Other PWC Considerations

- ◆ Know the PWC regulations for your state.
- ◆ Wear a life jacket.
- ◆ Make sure passenger can hold on securely.
- ◆ Do not seat a passenger in front of the operator.



# Operating a Personal Watercraft

- ◆ Keep hands, feet, loose clothing, and hair away from the pump intake area.
- ◆ Wear a wetsuit or clothing that provides equivalent protection.
- ◆ Do not board PWC if operator is applying the throttle.

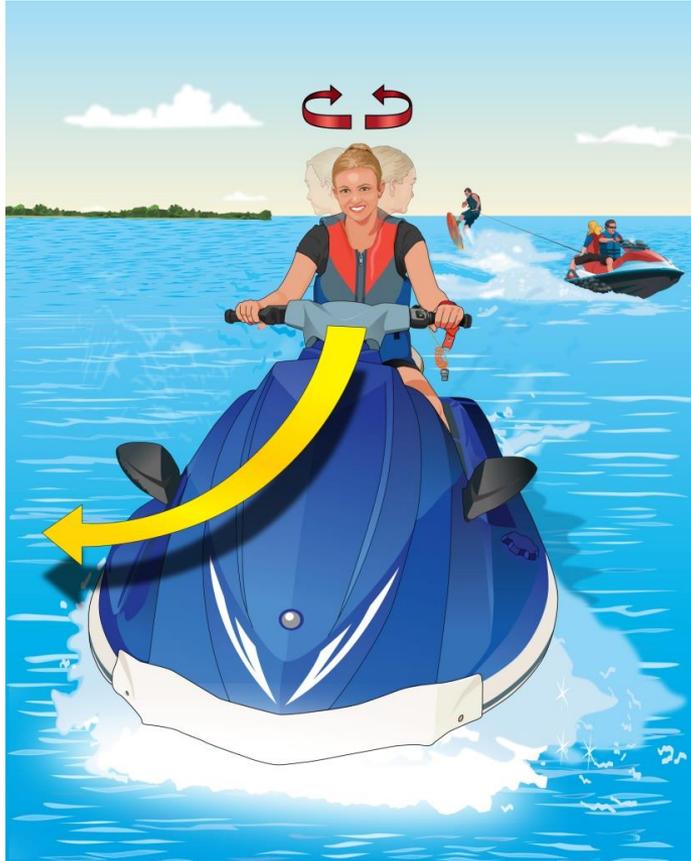


# Operating a Personal Watercraft

- ◆ **Inspect your electrical systems and perform “sniff test” after fueling.**
- ◆ **Avoid overloading.**
- ◆ **Know your limits and ride according to your abilities.**



# Operating a Personal Watercraft



- ◆ Look over both shoulders before making turns.

# Ignition Safety Switches

- ◆ Safety switch
- ◆ Lanyard
- ◆ Self-circling feature



# Circle of Death

*Boating safety experts want boaters to be aware of a dangerous operating force which, combined with operator inattention or error, may cause serious injury or death.*

# Avoiding Propeller Strike Injuries

- ◆ Turn off the engine when:
  - Passengers are boarding or disembarking.
  - Someone is in the water near the boat.
- ◆ Prevent passengers from being thrown overboard accidentally.
  - Never start with the engine in gear.
  - Never ride on the seat back, gunwale, transom, or bow.
  - Make sure all passengers are properly seated.
  - Assign someone to watch children.

# Avoiding Propeller Strike Injuries

- ◆ **Maintain a proper lookout for people in the water.**
  - **Slow down when approaching congested areas and anchorages.**
  - **Learn to recognize warning buoys.**
  - **Keep the boat away from marked swimming and diving areas.**



# Avoiding Propeller Strike Injuries

## Devices That Reduce Propeller Strikes

- ◆ Guards
- ◆ Propulsion
- ◆ Interlocks
- ◆ Sensors



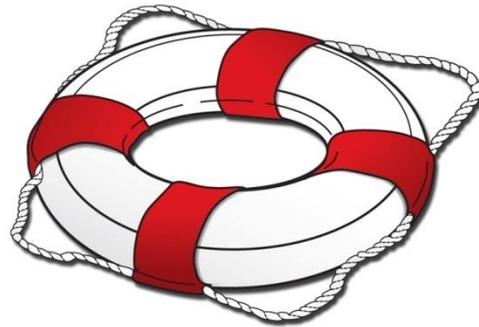
# Review Questions for Lesson 3: Operating Your Boat Safely

Answer a series of interactive questions.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19



# Lesson Four



## The Legal Requirements of Boating

# Key Topics

- ◆ **Numbering and Documentation**
- ◆ **Hull Identification Number**
- ◆ **Age and Education Requirements**
- ◆ **Unlawful Operation**
- ◆ **Alcohol and Drugs**
- ◆ **Obstructing Navigation**

# Key Topics

- ◆ **Homeland Security**
- ◆ **Personal Flotation Devices**
- ◆ **Fire Extinguishers**
- ◆ **Flame Arrestors, Ventilation, and Mufflers**
- ◆ **Navigation Lights**
- ◆ **Visual Distress Signals**
- ◆ **Sound-Producing Devices**

# Key Topics

- ◆ **Other Equipment and Regulations**
- ◆ **PWC Laws**
- ◆ **Laws Relating to Towing Persons**
- ◆ **Waste, Oil, and Trash Disposal**
- ◆ **Protecting the Environment**
- ◆ **Reporting Accidents**
- ◆ **Enforcement**

# Objectives

**You should be able to:**

- ◆ **Tell which vessels need to be registered and how to do so.**
- ◆ **Place certificate numbers and validation decals on a vessel correctly.**
- ◆ **Find the HIN on a vessel.**
- ◆ **Explain the age and education restrictions on vessel or PWC operation.**

# Objectives

- ◆ **List the reckless or negligent behaviors that should be avoided when operating a vessel.**
- ◆ **Explain the dangers of consuming alcohol or drugs while boating and the penalties for doing so.**
- ◆ **Tell the laws pertaining to obstructing navigation.**
- ◆ **Explain your role in keeping waterways safe and secure.**

# Objectives

- ◆ **Identify the classifications and uses of personal flotation devices, and state the legal requirements.**
- ◆ **Tell the legal requirements for fire extinguishers, backfire flame arrestors, ventilation systems, and mufflers.**
- ◆ **Tell the legal requirements for navigation lights, visual distress signals, and sound-producing devices.**

# Objectives

- ◆ **Tell the requirements for other equipment such as diver-down flags or state-required equipment.**
- ◆ **List the legal requirements specific to PWCs.**
- ◆ **List the legal requirements for towing a person behind a vessel.**
- ◆ **Explain how to dispose of waste, trash, and oil properly and how to use MSDs properly.**
- ◆ **Tell when and how to report a boating accident.**

# Certificate of Number and Decal

- ◆ You must have a Certificate of Number and a validation decal(s) to operate your vessel legally.
- ◆ Registration card must be carried on board whenever the vessel is being operated.

# Certificate of Number and Decal

- ◆ **State laws vary. Check with your state's boating agency for specific requirements.**
  - **Placement of decals**
  - **Expiration**

# Other Facts About Titling and Registration

In your state:

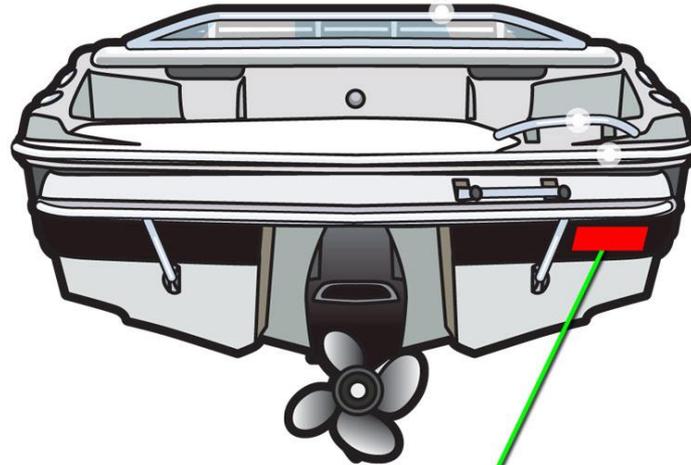
- ◆ Is a title required for a vessel?
- ◆ Is a title required for an outboard motor?
- ◆ When do the Certificate of Number and validation decal expire?
- ◆ What should you do if a vessel is transferred, destroyed, abandoned, lost, stolen, or recovered?

# Other Facts About Titling and Registration

## In your state:

- ◆ What should you do if a Certificate of Number or validation decal is lost or destroyed?
- ◆ What should you do if your address changes?
- ◆ How do you apply for a U.S. Coast Guard “Certificate of Documentation” for a larger recreational vessel?

# Hull Identification Number



**ABC 67689 B6 06**

Manufacturer's  
Identification  
Code (MIC)

Hull Serial  
Number

Date of  
Manufacture

Model  
Year

The Hull Identification Number (HIN) is a 12-digit number that uniquely identifies a vessel.

# Who May Operate a Vessel

**In your state:**

- ◆ **How old must a person be to operate a boat, PWC, or vessel with a specific horsepower?**
- ◆ **Which persons must take a boating safety education course?**

# Who May Operate a Vessel

## In your state:

- ◆ Which persons must have an adult on board the vessel?
- ◆ Are operators required to carry the boater education certificate on board?
- ◆ Which persons are exempt from the boating safety education course?

# Unlawful Operation of a Vessel

- ◆ **Reckless operation means boating in a way that could endanger someone's life, safety, or property.**



# Unlawful Operation of a Vessel

In your state, does operating recklessly include:

- ◆ Weaving through congested traffic?
- ◆ Operating in swimming areas or other restricted areas?
- ◆ Jumping wakes close to another vessel?
- ◆ Swerving at the last moment to avoid collision?
- ◆ Chasing or harassing wildlife?

# Alcohol and Drugs

## In your state:

- ◆ How is boating while intoxicated (BWI) defined?
- ◆ What determines if a person is intoxicated, including the blood alcohol concentration percentage?
- ◆ What are the penalties for BWI?
- ◆ When have you consented to be tested?



# Obstructing Navigation

**It is illegal to:**

- ◆ **Operate in a manner that keeps other vessels from navigating safely.**
- ◆ **Anchor in a river or channel in a place that is in the way of other vessels passing through.**
- ◆ **Moor or attach vessel to buoy, beacon, light, or any other navigational aid.**
- ◆ **Move, damage, or destroy any navigational aid.**
- ◆ **Block access to a pier, wharf, boat ramp, or any facility.**

# Homeland Security Restrictions

- ◆ Slow to minimum speed within 500 yards of any U.S. Naval vessel. Do not approach within 100 yards.
- ◆ Observe and avoid all security zones.
- ◆ Observe and avoid restricted areas near dams, power plants, etc.
- ◆ Do not stop or anchor beneath bridges or in channels.
- ◆ Do your part to keep our waterways safe and secure.



# Personal Flotation Devices (Life Jackets)

- ◆ All vessels must have one wearable, USCG–approved life jacket (PFD) of a proper size for each person on board.

Type I:  
Offshore Life Jackets

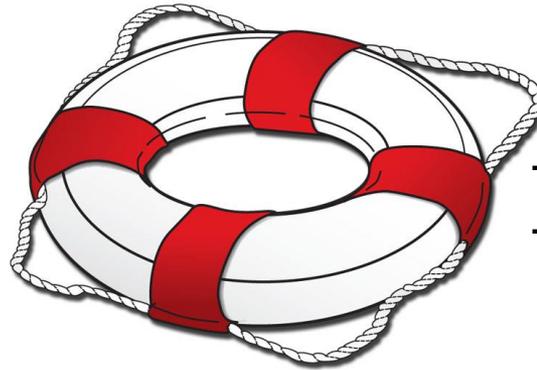


Type II:  
Near-Shore Vests

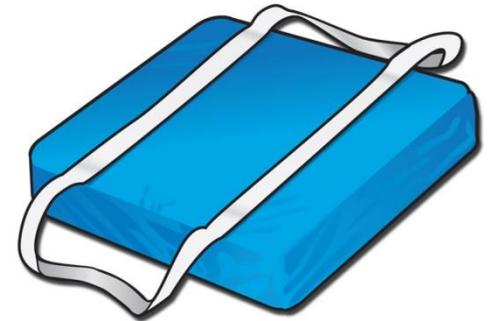


# Personal Flotation Devices

Type III: Flotation Aids



Type IV:  
Throwable Devices



Type V:  
Special-Use Devices



# Personal Flotation Devices

**In your state:**

- ◆ **What are the laws regarding life jackets?**
- ◆ **What types must be carried on board?**
- ◆ **Which vessels must have a Type IV throwable device on board?**

# Personal Flotation Devices

In your state:

- ◆ What are the PFD requirements in these situations?

Children



Persons on PWCs



Persons being towed behind a vessel



# Fire Extinguishers

## Classification of Fires

- ◆ **Type A: combustible solids like wood**
- ◆ **Type B: flammable liquids like gasoline or oil**
- ◆ **Type C: electrical fires**



# Fire Extinguishers

## Fire Extinguisher Requirements

<b>Length of Vessel</b>	<b>Without Fixed System</b>	<b>With Fixed System</b>
Less than 26 feet	One B-I	None
26 feet to less than 40 feet	two B-I <b>or</b> one B-II	one B-I
40 feet to less than 65 feet	three B-I <b>or</b> one B-II and one B-I	two B-I <b>or</b> one B-II

# Fire Extinguishers

- ◆ Extinguishers should be placed where they are accessible and can be reached immediately.
- ◆ Check the following on a regular basis.
  - Seals and tamper indicators are not broken or missing.
  - The extinguisher is fully charged.
  - There is no physical damage.
- ◆ **In your state**, are any vessels exempt from the fire extinguisher requirement?

# Backfire Flame Arrestors

- ◆ Prevent ignition of gasoline vapors if engine backfires.

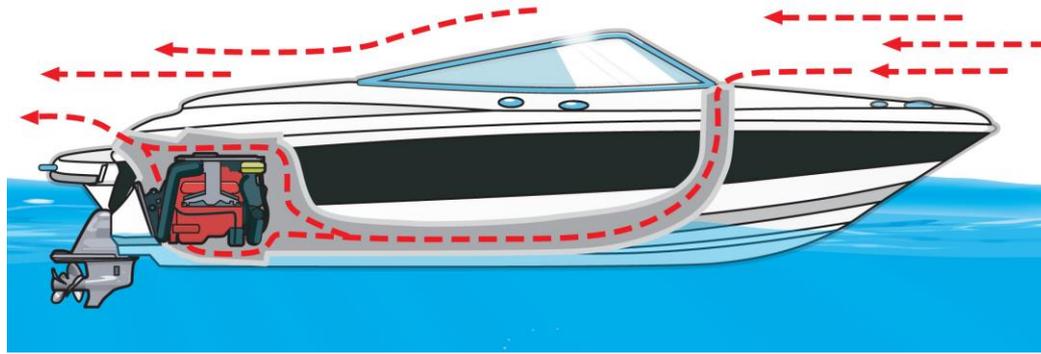


# Backfire Flame Arrestors

- ◆ **Must be:**
  - **On each carburetor.**
  - **In good working condition.**
  - **U.S. Coast Guard–certified.**
- ◆ **Should be cleaned periodically and checked for damage.**

# Ventilation Systems

- ◆ Gasoline-powered vessels built to trap fumes must have a natural ventilation system.



- ◆ If your vessel has a power ventilation system, let it run for at least four minutes before starting the engine.

# Mufflers and Noise Level Limits

In your state:

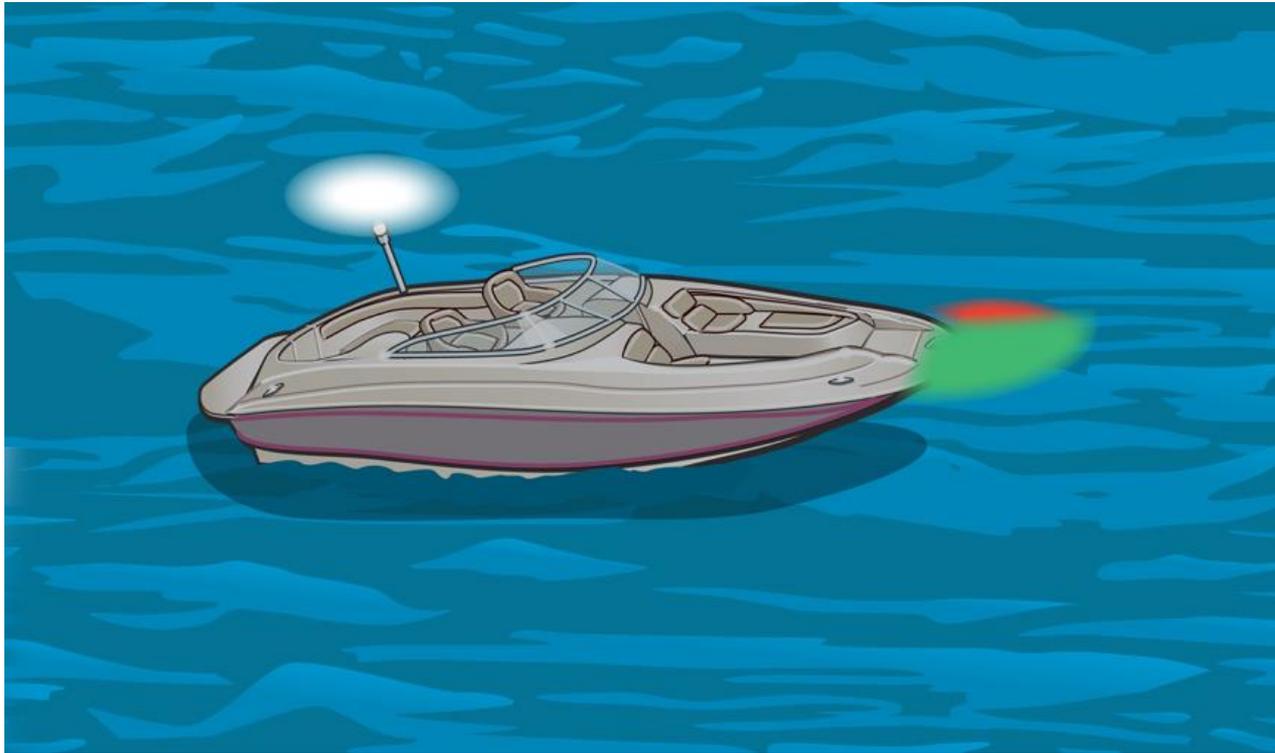
- ◆ What type of muffling system is required?
- ◆ What are the noise level limits?
- ◆ What modifications are prohibited?

# Navigation Lights

- ◆ **Vessel must be equipped with proper navigation lights.**
- ◆ **Lights must be used:**
  - **Between sunset and sunrise**
  - **When visibility is limited**

# Navigation Lights

Power-Driven Vessels Less Than 39.4 Feet



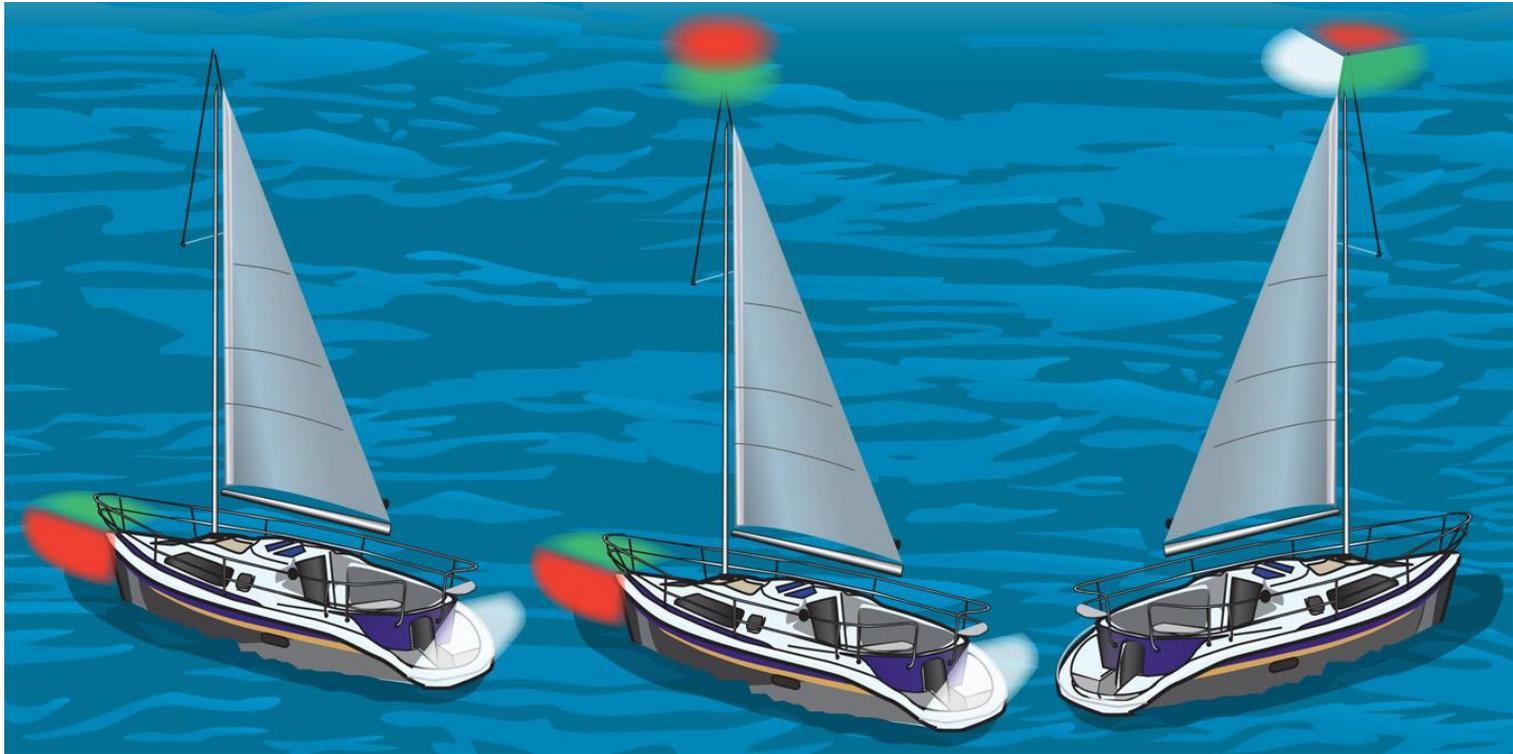
# Navigation Lights

## Power-Driven Vessels Less Than 65.6 Feet



# Navigation Lights

Unpowered Vessels Less Than 65.6 Feet



# Navigation Lights

## Unpowered Vessels Less Than 23 Feet



# Navigation Lights

All Vessels When Not Underway



# Visual Distress Signals

- ◆ **VDSs are classified as:**
  - **Day signals**
  - **Night signals**
  - **Both day and night signals**
- ◆ **VDSs are either:**
  - **Pyrotechnic**
  - **Non-pyrotechnic**

# Visual Distress Signals

- ◆ **Vessels on federally controlled waters must carry USCG–approved VDSs.**
  - **All vessels must carry night signals when operating at night.**
  - **Most vessels must carry day signals also.**

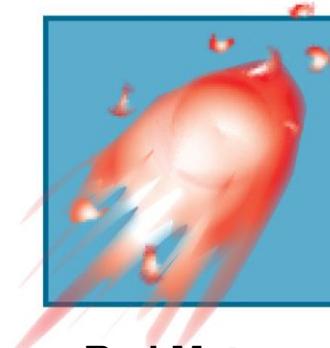


# Visual Distress Signals

## Pyrotechnic Visual Distress Signals



**Orange Smoke  
Day Signal**



**Red Meteor  
Day & Night Signal**



**Red Flare  
Day & Night Signal**

## Non-Pyrotechnic Visual Distress Signals



**Electric Light  
Night Signal**



**Orange Flag  
Day Signal**



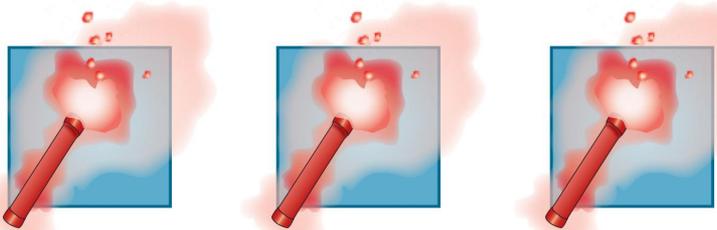
**Arm Signal**

# Visual Distress Signals

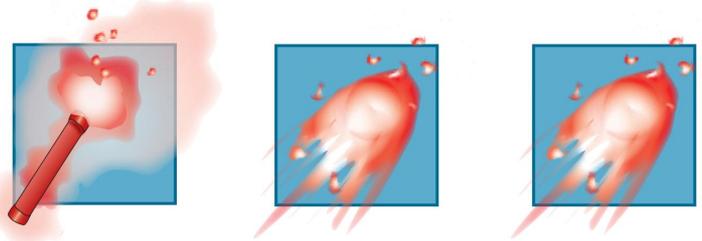
- ◆ If pyrotechnic VDSs are used:
  - You must carry a minimum of three on board.
  - They must be dated and not used past expiration date.

# Visual Distress Signals

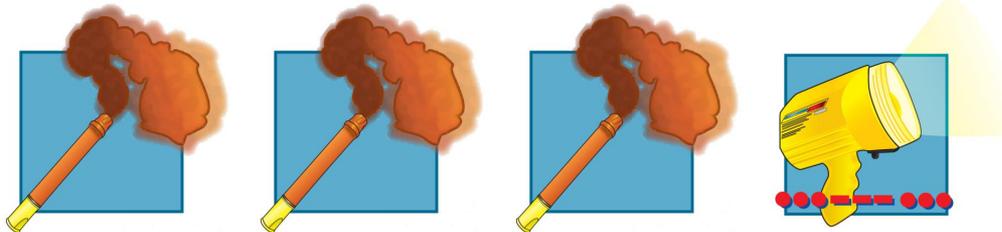
## Example Combinations



**3 handheld red flares**



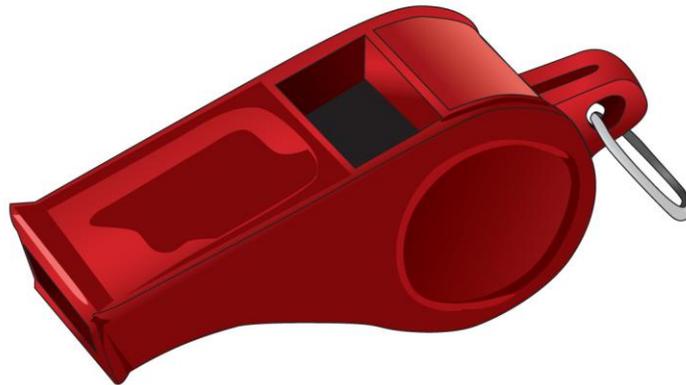
**1 handheld red flare  
2 red meteors**



**3 orange smoke signals  
1 electric light**

# Sound-Producing Devices

- ◆ Are essential when visibility is limited.
- ◆ Let other boaters know what you plan to do.



# Sound-Producing Devices

## Types of Sound-Producing Devices

◆ Whistle

◆ Horn

◆ Bell



# Sound-Producing Devices

- ◆ **Requirements for federally controlled waters:**
  - **Vessels less than 65.6 feet must carry a whistle, horn, or other effective sound signal device.**
  - **Vessels 65.6 feet or longer must carry a whistle or a horn, and a bell.**

# Sound-Producing Devices

## In your state:

- ◆ Are sound-producing devices required on your state's waters?
- ◆ What types of devices are required based on the length of the vessel?
- ◆ How far away must the sound signal be audible?

# Other Equipment and Regulations

- ◆ Two types of flags may be used to indicate diving activity:



**Divers Flag**  
*red-and-white*



**Alfa Flag**  
*blue-and-white*

- ◆ What flags are required in your state?
- ◆ How far must a vessel stay from a diver-down flag?

# Other Equipment and Regulations

**In your state:**

- ◆ **Are permits required for marine events?**
- ◆ **Are you required to license and/or register your vessel's trailer?**
- ◆ **Are you required to have certain equipment on your trailer?**
- ◆ **Is any other equipment required?**
- ◆ **What are the local regulations for specific waterways?**

# Requirements Specific to PWCs

**In your state:**

- ◆ **What are the requirements for life jackets?**
- ◆ **Are you required to have a lanyard-type ignition safety switch? What about a self-circling feature?**
- ◆ **During what hours may you operate a PWC legally?**
- ◆ **What are the age restrictions for operating a PWC?**

# Requirements Specific to PWCs

In your state, do illegal activities include:

- ◆ **Jumping another vessel's wake?**
- ◆ **Weaving through traffic?**
- ◆ **Operating above “slow, no wake speed” in certain areas?**
- ◆ **Chasing, harassing, or disturbing wildlife?**
- ◆ **Any others?**

# Towing a Person Legally

## In your state:

- ◆ What are the requirements for life jackets?
- ◆ During what hours may you tow a person legally?
- ◆ Are you required to have an observer on board? What about a wide-angle rearview mirror?



# Towing a Person Legally

In your state:

- ◆ What activities are illegal?
- ◆ Are you required to have a skier-down flag?

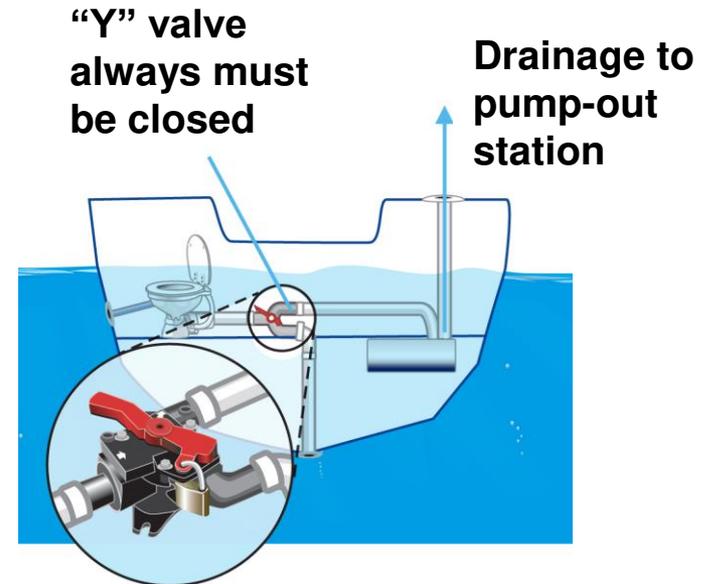
# **Waste, Oil, and Trash Disposal**

- ◆ **It is illegal to discharge waste, oil, or trash into any state or federally controlled waters.**
  - **Sewage carries disease.**
  - **Trash thrown into water can cause injuries.**
  - **Pollution is unsightly.**
- ◆ **The Refuse Act prohibits throwing, discharging, or depositing any refuse matter into U.S. waters.**

# Waste, Oil, and Trash Disposal

## Discharge of Sewage and Waste

- ◆ Recreational vessels with an installed toilet must have a marine sanitation device (MSD).
  - Types I and II MSDs treat waste.
  - Type III MSDs do not treat waste.



# Discharge of Sewage and Waste

- ◆ Vessels 65 feet or less in length may use a Type I, II, or III MSD.
- ◆ Vessels over 65 feet in length must install a Type II or III MSD.
- ◆ All MSDs must have U.S. Coast Guard certification.
- ◆ Are there other requirements in your state?

# Waste, Oil, and Trash Disposal

## Discharge of Trash

- ◆ It is illegal to dump garbage or plastics into any state or federally controlled waters.
- ◆ Many forms of litter can kill birds, fish, and marine mammals.



# Discharge of Trash

- ◆ On federal waters, display a 4"x 9" garbage disposal placard on any vessel 26 feet or longer.

It is illegal for any vessel to dump plastic trash anywhere in the ocean or navigable waters of the United States. Annex V of the MARPOL TREATY is a new International Law for a cleaner, safer marine environment. Each violation of these requirements may result in civil penalty up to \$25,000, a fine up to \$50,000, and imprisonment up to 5 years.

**U.S. lakes, rivers, bays, sounds, and 3 miles from shore**

**ILLEGAL TO DUMP:**

Plastic	Garbage	<b>3 to 12 miles</b>
Paper	Metal	
Rags	Crockery	<b>ILLEGAL TO DUMP:</b>
Glass	Dunnage	
Food		Plastic
		Dunnage (lining & packing materials that float)
		Also, if not ground to less than one inch:
		<b>12 to 25 miles</b>
		<b>ILLEGAL TO DUMP:</b>
		Plastic
		Dunnage (lining & packing materials that float)
		<b>Outside 25 miles</b>
		<b>ILLEGAL TO DUMP:</b>
		Plastic

State and local regulations may further restrict the disposal of garbage

***Working together we can all make a difference!***

# Waste, Oil, and Trash Disposal

## Discharge of Oil and Other Hazardous Substances

- ◆ Do not discharge hazardous substances into U.S. waters.
- ◆ Do not dump oil into the bilge.
- ◆ Store and dispose of oil waste properly.



# **Waste, Oil, and Trash Disposal**

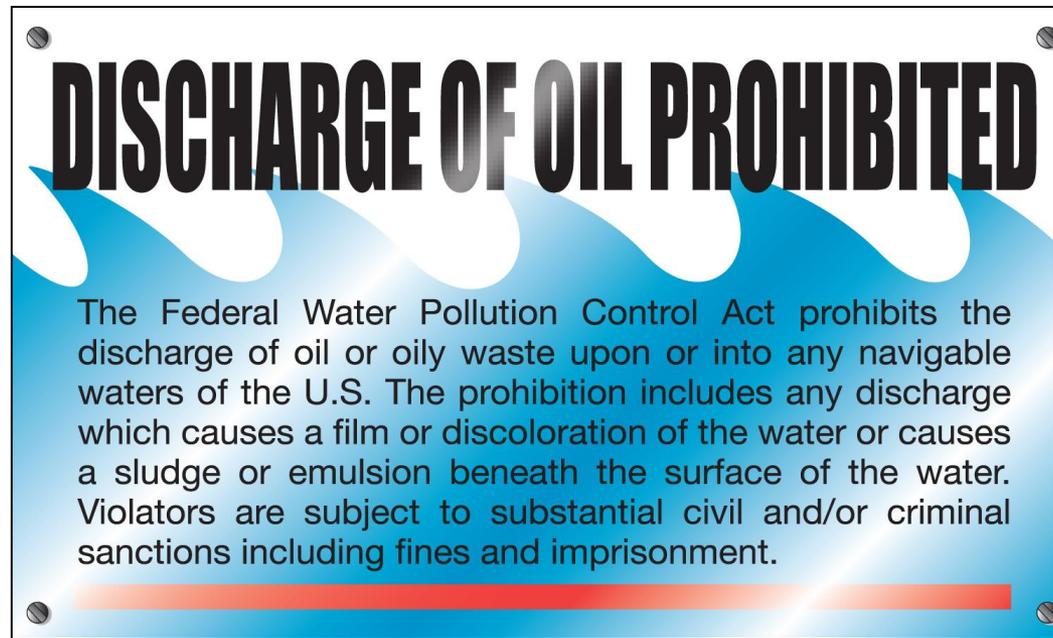
## **Discharge of Oil and Other Hazardous Substances**

- ◆ **Notify the USCG immediately if your vessel discharges oil or hazardous substances in water.**
  - **Call 1-800-424-8802 to notify the U.S. Coast Guard.**
  - **What is the contact information in your state?**

# Waste, Oil, and Trash Disposal

## Discharge of Oil and Other Hazardous Substances

- ◆ On federal waters, vessels 26 feet or longer must display a 5"x 8" placard.



# Waste, Oil, and Trash Disposal

## Waste Management Plan

- ◆ Ocean-going vessels 40 feet or longer must have written Waste Management Plan.
- ◆ The plan should tell how to discharge:
  - Sewage and hazardous waste
  - Garbage and food waste
  - Plastics, bottles, and cans
  - Oil or diesel fuel

# Stop Spread of Nuisance Species

- ◆ Aquatic nuisance species include zebra mussels, quagga mussels, milfoil, and hydrilla.
- ◆ Introducing these species can upset the ecosystem and hurt the environment.



# Stop Spread of Nuisance Species

- ◆ **Prevent spread of aquatic nuisance species:**
  - **Inspect your vessel and trailer. Remove any plants and animals.**
  - **Drain your motor, live well, and bilge on land.**
  - **Empty your bait bucket on land.**
  - **Rinse your vessel, propeller, trailer, and equipment.**
  - **Air-dry your vessel and equipment.**

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

- ◆ **If you are involved in a boating accident, you must:**
  - **Stop immediately *and ...***
  - **Assist injured persons, if it is safe to do so *and ...***
  - **Give your name, address, and vessel identification.**

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

## **In your state:**

- ◆ **What types of accidents must be reported?**
- ◆ **How do you report an accident?**
  - **How soon must it be reported?**
  - **Do you report it in writing or by some other means?**
  - **To whom do you report it?**

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

## Sample Boating Accident Report Form

DNR Number		F. Warden <input type="checkbox"/>		W. Super. <input type="checkbox"/>		LESS <input type="checkbox"/>		OPERATOR BOATING ACCIDENT REPORT Form 4100-20 (R.01)							
C.G. Number		In completing this report, do NOT fill in the shaded areas; these will be completed by the Department of Natural Resources.													
ACCIDENT CRITERIA															
Accident Criteria				Number of Boats in Accident? _____								Injuries Requiring Medical Treatment? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Complete Loss of Vessel? <input type="checkbox"/> Yes <input type="checkbox"/> No				Disappearance of Person				Death Related to Accident? <input type="checkbox"/> Yes <input type="checkbox"/> No				If Yes, number of deaths: _____			
Indicating Injury or Death? <input type="checkbox"/> Yes <input type="checkbox"/> No				Property Damage (Estimated)				This Boat \$ _____				Other Boats \$ _____			
Other Property \$ _____				Date of Accident				Day of Week				Time of Day <input type="checkbox"/> am <input type="checkbox"/> pm			
Name of Body of Water				Location				Nearest City or Town				County			
State				WI											
WEATHER															
Weather (Check all applicable)				Water Conditions				Temperatures				Wind			
<input type="checkbox"/> Clear <input type="checkbox"/> Rain				<input type="checkbox"/> Calm (Waves < 6')				Air _____ °F				<input type="checkbox"/> None			
<input type="checkbox"/> Cloudy <input type="checkbox"/> Snow				<input type="checkbox"/> Choppy (6' - 2')				Water _____ °F				<input type="checkbox"/> Light (0-6 MPH)			
<input type="checkbox"/> Fog <input type="checkbox"/> Hazy				<input type="checkbox"/> Rough (2' - 6')								<input type="checkbox"/> Moderate (7-14 MPH)			
				<input type="checkbox"/> Very Rough (>6')								<input type="checkbox"/> Strong (15-25 MPH)			
				<input type="checkbox"/> Strong Current								<input type="checkbox"/> Storm (Over 25 MPH)			
												Visibility			
												Day _____ Night _____			
												<input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor			
TYPE OF ACCIDENT						WHAT CONTRIBUTED TO ACCIDENT									
Check all applicable. If more than one, number choices in order of occurrence.						Check all applicable. If more than one, number choices in order of occurrence.									
<input type="checkbox"/> Grounding						<input type="checkbox"/> Weather									
<input type="checkbox"/> Capsizing						<input type="checkbox"/> Excessive Speed									
<input type="checkbox"/> Flooding/Swamping						<input type="checkbox"/> Improper Lookout									
<input type="checkbox"/> Sinking						<input type="checkbox"/> Restricted Vision									
<input type="checkbox"/> Fire or Explosion (Fuel)						<input type="checkbox"/> Overloading									
<input type="checkbox"/> Fire or Explosion (Other)						<input type="checkbox"/> Improper Loading									
<input type="checkbox"/> Skier Mishap						<input type="checkbox"/> Hazardous Waters									
<input type="checkbox"/> Collision with Vessel						<input type="checkbox"/> Alcohol Use									
<input type="checkbox"/> Collision with Fixed Obj.						<input type="checkbox"/> Drug Use									
<input type="checkbox"/> Collision with Floating Obj.						<input type="checkbox"/> Failure to Vent									
<input type="checkbox"/> Fall Overboard						<input type="checkbox"/> Improper Anchoring									
<input type="checkbox"/> Fall in Boat						<input type="checkbox"/> Standing/Sitting on Gunwales, Bow, Transom									
<input type="checkbox"/> Person Struck by Boat						<input type="checkbox"/> Careless/Reckless Operation									
<input type="checkbox"/> Person Struck by Motor/Propeller						<input type="checkbox"/> Hull Failure									
<input type="checkbox"/> Struck Submerged Obj.						<input type="checkbox"/> Machinery Failure									
<input type="checkbox"/> Hit and Run						<input type="checkbox"/> Equipment Failure									
<input type="checkbox"/> Other (Specify) _____						<input type="checkbox"/> Operator Inexperience									
						<input type="checkbox"/> Operator Inattention									
						<input type="checkbox"/> Congested Waters									
						<input type="checkbox"/> Passenger/Skier Behavior									
						<input type="checkbox"/> Dam Lock									
						<input type="checkbox"/> Lack of or Improper Boat Lights									
						<input type="checkbox"/> Rules of the Road Infraction									
						<input type="checkbox"/> Sharp Turn									
						<input type="checkbox"/> Ignition of Spilled Fuel/Vapor									
						<input type="checkbox"/> Starting in Gear									
						<input type="checkbox"/> Other (Specify) _____									
OPERATOR															
Operator's Name				Owner's Name (If different from Operator's)											
Address				Address											
City, State, Zip Code				Telephone Number ( )				City, State, Zip Code				Telephone Number ( )			
Operator's Date of Birth (mo/day/yr)				Operator's Experience				Instruction in Boating Safety				U.S. Power Squadron			
<input type="checkbox"/> Male <input type="checkbox"/> Female				<input type="checkbox"/> None				<input type="checkbox"/> State Course				<input type="checkbox"/> American Red Cross			
				<input type="checkbox"/> Under 100 Hours				<input type="checkbox"/> USCG Auxiliary							
				<input type="checkbox"/> ? 100 Hours				<input type="checkbox"/> None							

# Enforcement

- ◆ **Law enforcement officers have the right to stop a vessel.**
  - **Who can stop your vessel on federal waters?**
  - **Who can stop your vessel on state waters?**
- ◆ **In your state, what must boaters do if they are signaled to stop?**

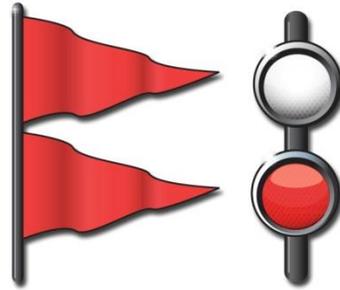
# ***Review Questions for Lesson 4: Boating Legal Requirements***

***Answer a series of interactive questions.***

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- 15
- 16
- 17



# Lesson Five



## Boating Emergencies... What To Do

# Key Topics

- ◆ Risk Management
- ◆ Boating Accidents
- ◆ Personal Injuries
- ◆ Weather Emergencies
- ◆ Summoning Help

# Objectives

You should be able to ...

- ◆ Explain how to practice risk management while boating.
- ◆ Describe the effects of boating stressors.
- ◆ Explain how dehydration occurs and how to recognize and prevent it.
- ◆ Explain the increased effects of alcohol on the body when on the water.

# Objectives

- ◆ Find the PFD that is the proper size for the wearer and check a PFD's condition.
- ◆ Explain how to handle situations involving capsizing, swamping, or falling overboard.
- ◆ Avoid collisions.
- ◆ Respond properly to a fire emergency.
- ◆ Take the proper steps if a vessel runs aground.

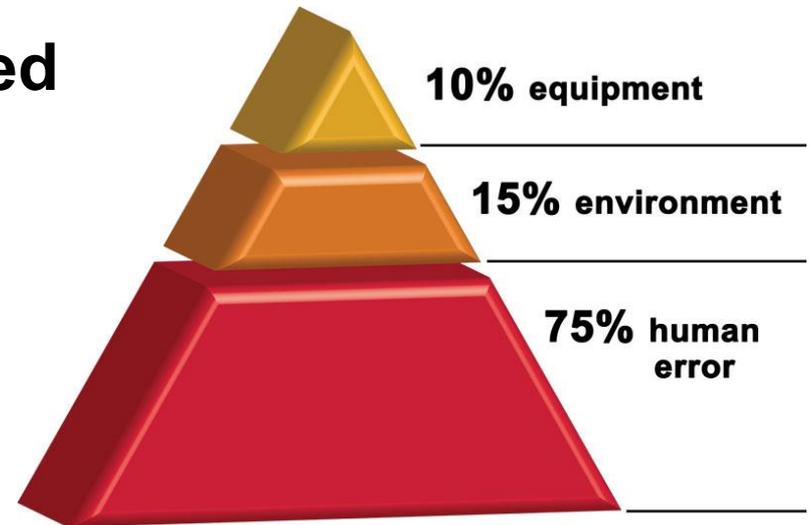
# Objectives

- ◆ **Explain the danger and stages of cold water immersion and what to do to survive.**
- ◆ **Recognize the symptoms of carbon monoxide poisoning and explain how to prevent it.**
- ◆ **Obtain weather forecasts, recognize weather warnings, and explain what to do if caught in severe weather.**
- ◆ **Summon help quickly if a serious boating emergency occurs.**

# Risk Management

## Profile of a Typical U.S. Boating Fatality

- ◆ PFDs are on board but not in use
- ◆ Vessel is small boat of open design
- ◆  $\frac{1}{3}$  of time alcohol is involved
- ◆ Daylight, good weather
- ◆ Operator is male, 26 to 50, with boating experience
- ◆ **Nearly all accidents are preventable**



# Risk Management

## ◆ Risk Management is:

- Recognizing dangerous situations and reducing chance that they will happen.
- Lessening effects of accidents if they do happen.

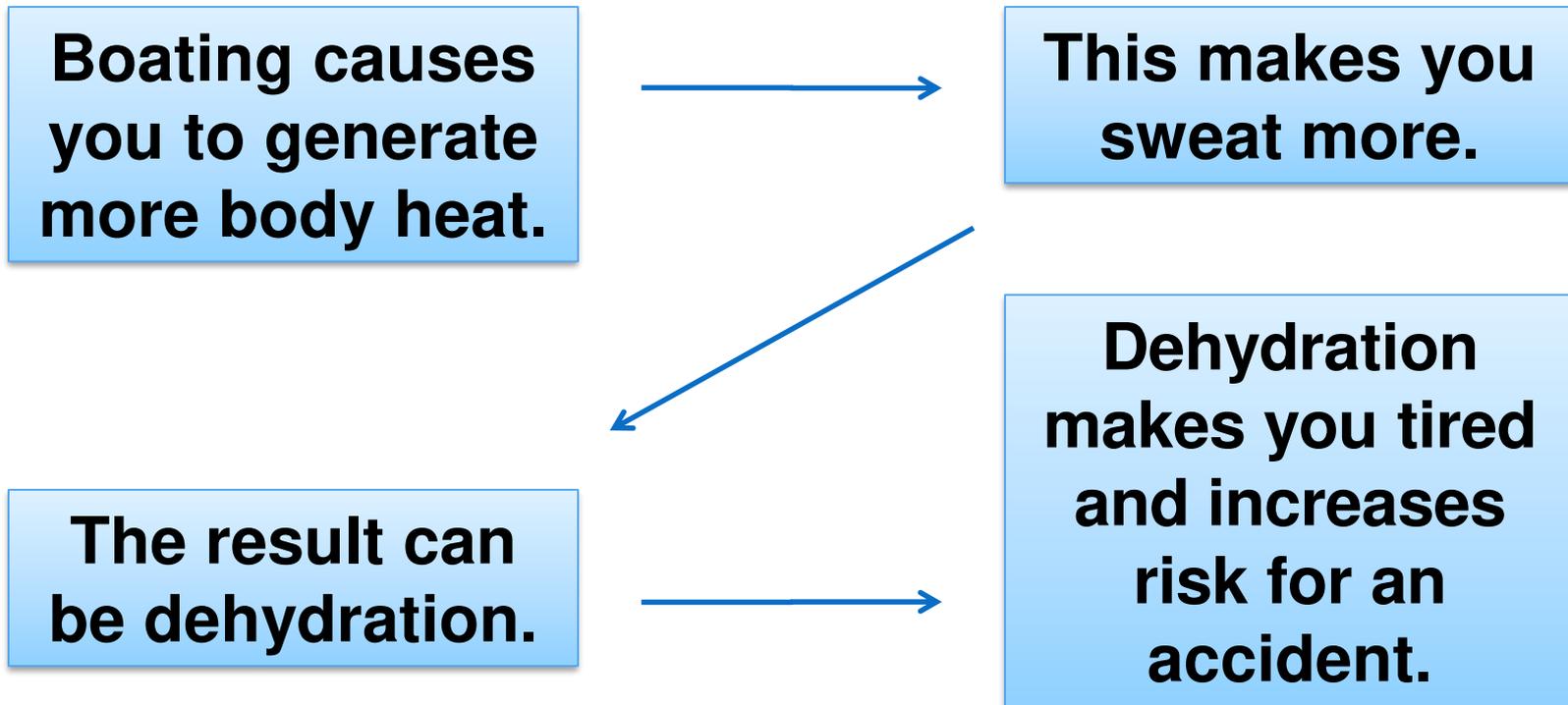
# Risk Management

## Increased Risk Due to Boating Stressors

- ◆ Caused by sun's glare and heat, motion, and engine noise and vibration.
- ◆ Increase risk of a boating accident.

# Risk Management

## Increased Risk Due to Dehydration



# Risk Management

## Increased Risk Due to Dehydration

- ◆ To prevent dehydration, take a drink of water every 15–20 minutes.
- ◆ If dehydration occurs, drink plenty of water and get out of the sun.

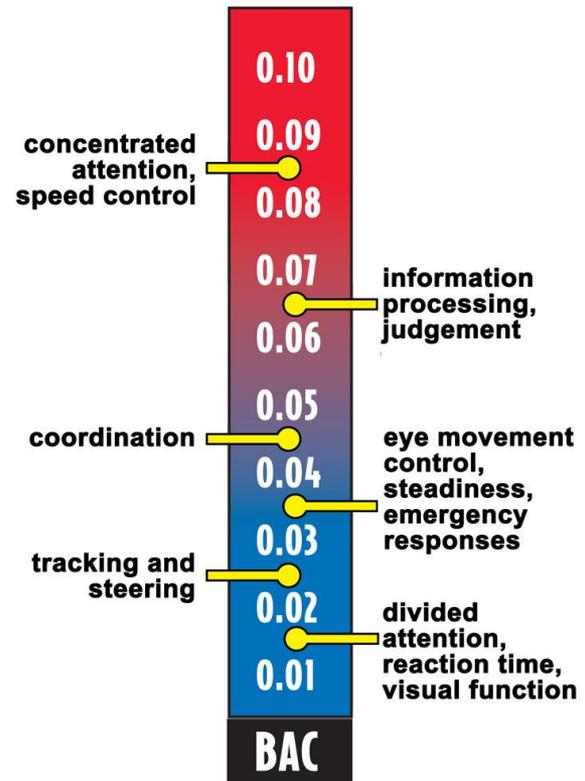


# Risk Management

## Avoiding Alcohol

- ◆ Alcohol increases natural stressors.
- ◆ It takes less alcohol to make a person legally intoxicated on water.

## Blood Alcohol Concentration (BAC)



# Risk Management

- ◆ **Drinking while boating increases likelihood of accidents.**
  - **Make sure everyone wears a life jacket.**
  - **Designate non-drinking boaters to operate the vessel.**

# Risk Management

To minimize the risk of an accident—**Don't drink and boat!**



# Risk Management

## Minimize Risk of Drownings—Wear PFDs

- ◆ Have everyone on board wear a life jacket.
- ◆ Follow the requirements:
  - Readily accessible
  - Proper size
  - Good and serviceable condition



# Minimize Risk of Drowning

## Inflatable Life Jackets

- ◆ Come in two styles.
- ◆ Inflate if wearer falls into the water.
- ◆ Are approved for 16 or older.
- ◆ Come with operating instructions.



# Risk Management

## *Reach, Throw, Row or Go*

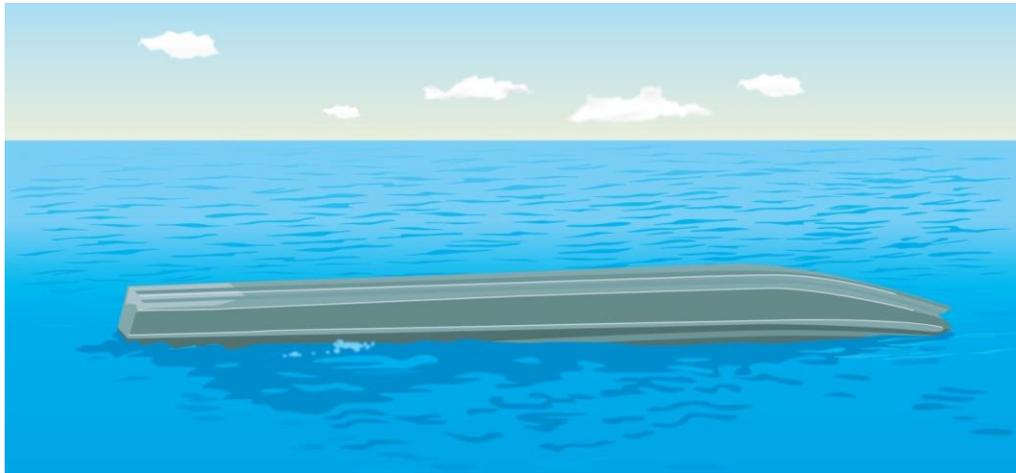
*You do not need to be an Olympic swimmer to save others. In fact, non-swimmers who know what to do can save a life.*



# Boating Accidents

## Capsizing, Swamping, or Falling Overboard

- ◆ **Capsizing**—boat turns on its side or turns completely over.



- ◆ **Swamping**—boat stays upright and fills with water.

# Boating Accidents

## Capsizing, Swamping, or Falling Overboard

### ◆ For safety:

- Ask everyone to wear life jackets.
- Attach ignition safety switch lanyard to wrist, clothes, or life jacket.
- Don't allow anyone to sit on any area not designed for seating.



# Boating Accidents

- **Don't overload your boat.**
- **Keep centered in the boat with your center of gravity low.**
- **Don't let anyone lean a shoulder beyond gunwale in a small boat.**
- **Slow down when turning.**
- **Don't boat in rough water or bad weather.**
- **Secure anchor line to the bow.**

# Boating Accidents

- ◆ **If you capsize or swamp your boat, or fall overboard:**
  - **Stay with the boat.**
  - **Put a life jacket on. Have your passengers do the same.**
  - **Take a head count.**
  - **Signal for help.**

# Boating Accidents

- **If your boat is still floating, try to reboard or climb onto it.**



- **If your boat sinks or floats away, look for other items to help support you.**

# Boating Accidents

## ◆ If boat sinks or floats away:

- Don't panic—remain calm and wait for help.
- Make sure your life jacket is securely fastened, or find something to help you float.

# Boating Accidents

## ◆ If someone falls overboard:

- **Slow down.**
- **Toss the victim a PFD.**
- **Slowly pull alongside the victim.**
- **Stop the engine.**



# Boating Accidents

## Avoiding Collisions

- ◆ Follow the rules of navigation.
- ◆ Pay attention to navigation aids.
- ◆ Keep a sharp watch and appoint a lookout.
- ◆ Maintain a safe speed.

# Boating Accidents

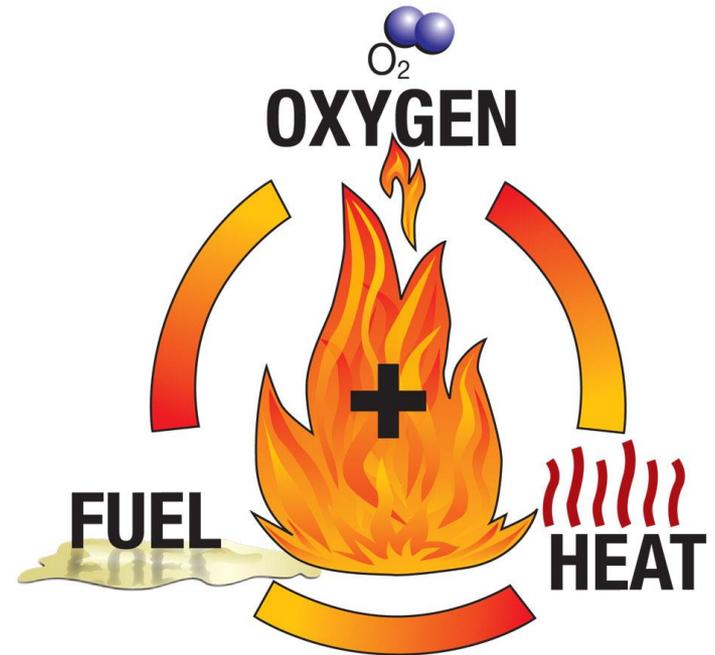
- ◆ **Look in all directions before turning.**
- ◆ **Use caution when traveling into the sun's glare.**
- ◆ **Never operate when fatigued or stressed, or while consuming alcohol.**
- ◆ **Watch for floating debris.**

# Boating Accidents

## Dealing With Fire Emergencies

### ◆ To prevent a fire:

- Don't mix fuel, oxygen, and heat.
- Make sure ventilation systems are working.
- Maintain the fuel system.
- Use safe fueling procedures.



# Boating Accidents

- ◆ If a fire starts:
  - Stop the boat.
  - Position the fire downwind.
  - Shut off fuel supply, if fire is in the engine.
  - Aim the fire extinguisher at the base of the flames.
  - Sweep back and forth.
  - Summon help.



# Boating Accidents

## Running Aground

### ◆ To prevent:

- Know your boating environment.
- Find out the location of shallow water and submerged objects.
- Learn to read nautical charts.

# Boating Accidents

- ◆ If you run aground:
  - Make sure no one is injured.
  - Check for leaks.
  - Try to get loose.
  - Signal for help if needed.



# Personal Injuries

## Cold Water Immersion and Hypothermia

- ◆ Kill in several ways.
- ◆ Can cause a reaction in water as warm as 77° F.
- ◆ Understand how your body reacts to cold water to respond appropriately and increase your chance of survival.

# Cold Water Immersion

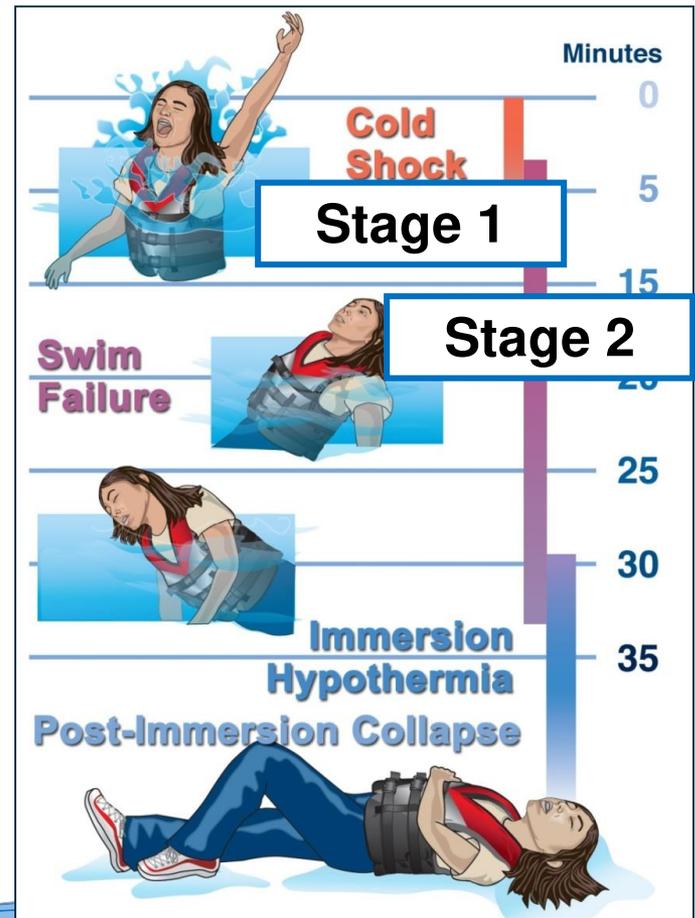
## Stages of Cold Water Immersion

### ◆ Stage 1

- Initial “cold shock”
- Occurs first 3–5 minutes

### ◆ Stage 2

- Short-term “swim failure”
- Occurs 3–30 minutes following immersion



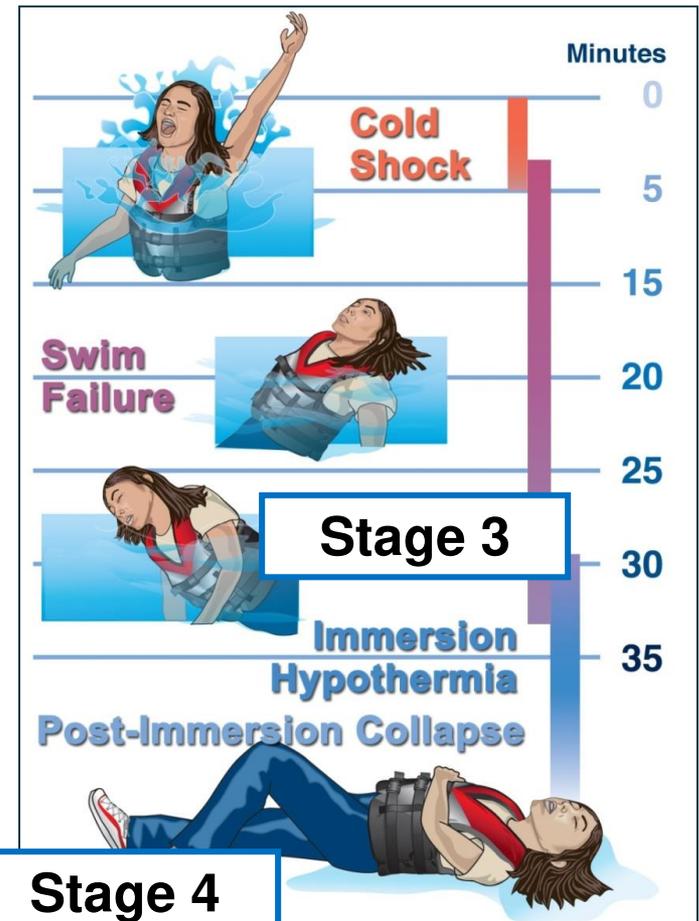
# Cold Water Immersion

## ◆ Stage 3

- Long-term immersion hypothermia
- Sets in after 30 minutes

## ◆ Stage 4

- Post-immersion collapse
- Occurs during or after rescue



# Personal Injuries

- ◆ **Survival depends on:**
  - **Keeping your head above water**
  - **Controlling your breathing**
  - **Having timely rescue by yourself or others**
  - **Retaining body heat**

# Personal Injuries

- ◆ **When boating in cold water conditions:**
  - **Always wear a secured life jacket.**
  - **Wear layered clothing.**
  - **Equip your boat with a means for re-entry.**



# Personal Injuries

- ◆ Try to avoid capsizing or falling overboard.
- ◆ If you do fall into cold water:
  - Don't panic.
  - Put on a life jacket.
  - Do not take off your clothes.
  - Try to reboard your boat.
  - Stay as still as possible.
  - Adopt a position to prevent heat loss.
  - Send out emergency distress signals.

# Personal Injuries

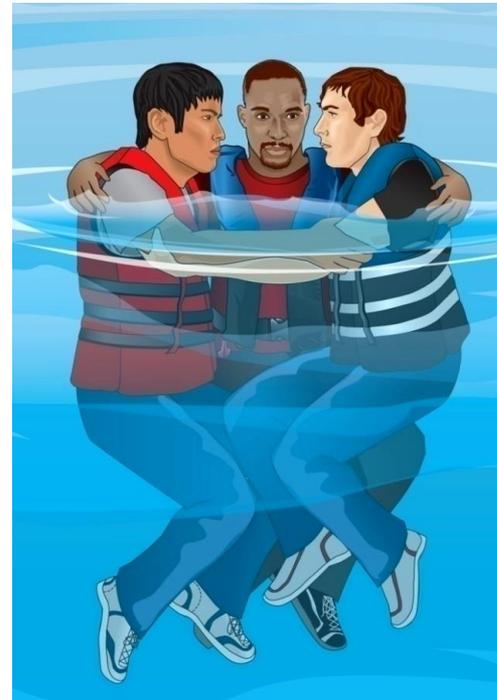
## Reducing Heat Loss in Cold Water

**H.E.L.P.**



**If alone**

**Huddle**



**With others**

# Personal Injuries

- ◆ **When treating victims of cold water immersion:**
  - **Get the victim out of the water quickly and gently.**
  - **Prevent further heat loss.**
  - **Be prepared to provide basic life support.**
  - **Seek medical help immediately.**

# Personal Injuries

## Carbon Monoxide Poisoning

- ◆ **Carbon monoxide (CO) is an invisible, odorless, tasteless gas.**
- ◆ **Symptoms of CO poisoning:**
  - **Irritated eyes**
  - **Headache**
  - **Nausea**
  - **Weakness**
  - **Dizziness**

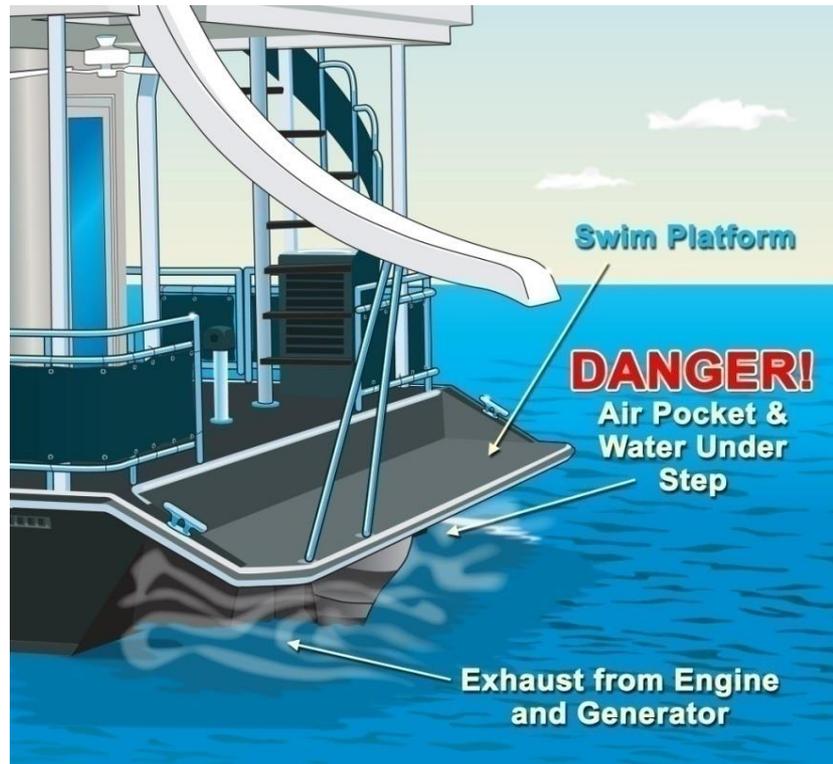
# Personal Injuries

- ◆ To prevent carbon monoxide poisoning:
  - Allow fresh air to circulate.
  - Keep away from engine and generator exhaust outlets.
  - Never sit on the back deck, “teak surf,” or hang on the swim platform.
  - Ventilate immediately if you detect fumes.
  - Install marine-rated CO detectors.



# Personal Injuries

- ◆ Never enter areas under swim platforms as air in these areas could be fatal if breathed in



# Personal Injuries

- ◆ **Before each boating trip:**
  - **Know the location of exhaust outlets.**
  - **Educate passengers about CO poisoning.**
  - **Check operation of exhaust outlets.**
  - **Listen for any change in exhaust sound.**
  - **Test each CO detector.**

# Personal Injuries

## ◆ Monthly:

- **Make sure exhaust clamps are secure.**
- **Look for leaks in the exhaust system.**
- **Inspect rubber hoses for damage.**

## ◆ Annually:

- **Have a qualified technician check the engine and exhaust system.**

# Personal Injuries

## Responding to Other Serious Injuries

- ◆ Shock
- ◆ Bleeding
- ◆ Burns
- ◆ Broken Bones
- ◆ Head, Neck, or Spinal Injury



# Weather Emergencies

## How To Avoid Severe Weather

- ◆ Tune a radio to a station with weather updates.
- ◆ Be alert to weather conditions.
- ◆ Track changes in barometer readings.
- ◆ Watch for wind shifts, lightning, and rough water.

# Weather Emergencies

- ◆ **Be aware of weather to the west.**
- ◆ **Watch for fog.**
- ◆ **Head toward nearest safe shore.**

# Weather Emergencies

## What To Do If Out in Severe Weather

### ◆ Prepare the boat.

- Slow down.
- Close hatches, windows, and doors.
- Stow unnecessary gear.
- Turn on all navigation lights.
- Keep bilges free of water.
- Disconnect electrical equipment if there is lightning.

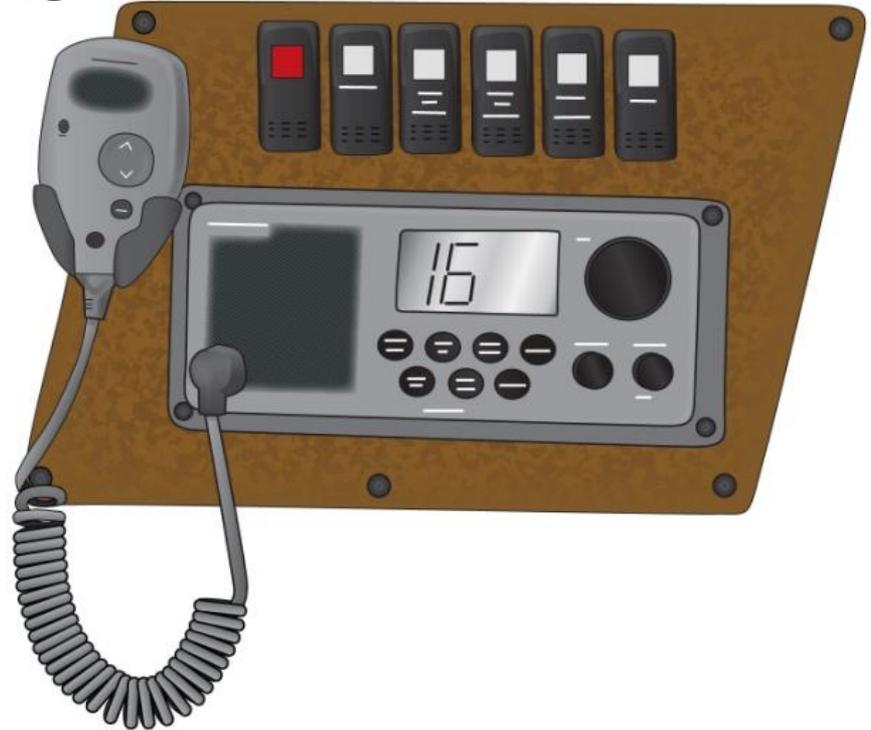
# **Weather Emergencies**

- ◆ **Prepare your passengers for severe weather.**
  - **Make sure everyone is wearing a life jacket.**
  - **Have passengers sit on floor close to centerline.**
- ◆ **Decide whether to go to shore or ride out the storm.**
  - **Head for nearest safe shoreline.**
  - **Steer bow of boat into waves.**
  - **Keep sharp lookout for other vessels or hazards.**
  - **If engine stops, drop an anchor.**

# Summoning Help

## ◆ Useful items:

- Visual distress signals
- VHF marine radio
- Mobile phone
- EPIRB
- PLB



# ***Review Questions for Lesson 5: Boating Emergencies***

***Answer a series of interactive questions.***

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# Lesson Six



## Enjoying Water Sports With Your Boat

# Key Topics

- ◆ **Responsibilities of a Vessel Operator**
- ◆ **Paddlesports—Canoes, Kayaks, and Rafts**
- ◆ **Water-Skiing**
- ◆ **Scuba Diving and Snorkeling**
- ◆ **Windsurfing and Sailing**
- ◆ **Fishing and Hunting**

# Objectives

You should be able to ...

- ◆ Explain a vessel operator's responsibility to his or her passengers.
- ◆ Explain a vessel owner's responsibility when allowing others to use his or her vessel.
- ◆ Explain the boater's responsibility to the environment.

# Objectives

- ◆ **Explain a vessel operator's responsibility to others using the waterways.**
- ◆ **List the guidelines for paddling safely.**
- ◆ **Properly tow skiers and recognize skier hand signals.**
- ◆ **Explain how to fish or hunt safely from a boat.**

# Responsibilities of a Vessel Operator

## Responsibility to Your Passengers

### ◆ Pre-Departure Checklist

- ✓ Check the weather forecast.
- ✓ Check the steering and throttle controls.
- ✓ Check all lights.
- ✓ Check for any fuel or oil leaks.
- ✓ Check hose connections and clamps.
- ✓ Drain all water from the engine compartment.

# **Responsibilities of a Vessel Operator**

- ✓ **Be sure the bilge plug is replaced and secure.**
- ✓ **Make sure you have enough fuel.**
- ✓ **Make sure your engine battery and fire extinguishers are fully charged.**
- ✓ **Attach the ignition safety switch and lanyard.**
- ✓ **Make sure you have the required number of PFDs.**
- ✓ **Leave a float plan.**

# Responsibilities of a Vessel Operator

- ◆ **Before casting off, discuss safety.**
  - **Where is the emergency equipment?**
  - **Who needs a life jacket?**
  - **What are the laws for:**
    - **Reckless operation?**
    - **Required equipment?**
    - **Waste disposal?**

# Responsibilities of a Vessel Operator

## Conducting Emergency Drills

- ◆ Do you know what to do:
  - In case of a fire?
  - If someone falls overboard?
  - In case of a storm?
- ◆ How do you:
  - Signal for help or make a MAYDAY call?
  - Anchor the vessel and handle lines (ropes)?

# Responsibilities of a Vessel Operator

## Responsibility to Others You Allow To Operate Your Vessel

- ◆ **Before allowing others to operate your vessel, make sure they:**
  - **Meet the minimum age and boater education requirements.**
  - **Know basic boating safety and navigation rules.**

# **Responsibilities of a Vessel Operator**

- **Know how to use lanyard with the ignition safety switch.**
- **Understand the importance of speed restrictions.**
- **Understand the need to keep a proper lookout.**

# Responsibilities of a Vessel Operator

- ◆ Before allowing others to drive your PWC, make sure they:
  - Meet the minimum age and boater education requirements.
  - Know they have the same responsibilities as any other vessel operator.



# **Responsibilities of a Vessel Operator**

- **Take their first rides in an uncrowded area.**
- **Know how to steer and control the PWC.**
- **Know to check carefully before turning.**

# Responsibilities of a Vessel Operator

## Responsibility to the Environment

- ◆ Keep waters clean and disease-free by disposing of waste and litter properly.
- ◆ Practice the three “Rs”— Reduce, Reuse, and Recycle.
- ◆ Reduce throttle to “no wake” speed when close to a shoreline.
- ◆ Don’t use toxic substances on your vessel or around water.



# Responsibilities of a Vessel Operator

## Responsibility to Others Using the Waterways

- ◆ Stay aware of others in or on the water.



- ◆ Control the noise of your boat or PWC.

# Paddlesports—Canoes, Kayaks, Rafts

## ◆ To prepare for safety:

- Always wear a PFD.
- Know how to swim in a river current.
- Never paddle alone.
- Never overload your craft.
- Keep low center of gravity.
- Watch the weather. Keep close to shore.



# Paddlesports

- **Be alert and aware of surroundings.**
- **Practice reboarding in water.**
- **Dress properly for the weather.**
- **Check your craft for leaks.**
- **Map a general route and timetable when embarking on a long trip.**
- **Know conditions before you head out.**

# **Paddlesports—Canoes, Kayaks, Rafts**

## **◆ Be alert for river hazards:**

- **Low-head dams**
- **Rapids**
- **Strainers**

## **◆ If you capsize:**

- **Float on the upstream side of your craft.**
- **Do not try to stand or walk in swift-moving water.**
- **Point your feet downstream.**
- **Take precautions to avoid hypothermia.**

# Water-Skiing

- ◆ **Before towing a skier, the operator should:**
  - **Have an observer on board.**
  - **Review hand signals with skier.**
  - **Make sure skier is wearing an approved PFD.**
  - **Be familiar with area and any hazards.**
  - **Make sure tow lines are same length for multiple skiers.**
  - **Never tow a skier at night.**

# Water-Skiing

- ◆ **While towing a skier, the operator should:**
  - **Start engine after making sure no one is near the propeller.**
  - **Go slowly until ski rope is tight.**
  - **Keep skier at a safe distance from the shoreline.**
  - **Avoid congested areas.**
  - **Watch for other vessels and obstructions.**
  - **Always respond to skier's signals.**

# Water-Skiing

- **When a skier falls, circle slowly to return the towline.**
- **If required, display red or orange flag to alert others that skier is down.**
- **Shut off engine before skier reboards.**



# Water-Skiing

- ◆ **When in the water, the skier should:**
  - **Wear a PFD.**
  - **Use hand signals.**
  - **Never ski under the influence of drugs or alcohol.**
  - **Never spray swimmers, vessels, or other skiers.**
  - **Never wrap tow rope around your body.**
  - **Hold ski up out of the water after falling.**
  - **Not approach the back of the boat until the engine is off.**

# Water-Skiing

*When towing someone behind a boat, particularly on an inner tube where the towed person has little ability to control their course, keep well away (at least twice the length of the tow rope) from the shoreline, docks, hazards, and people in the water.*



Start



# Water-Skiing

## Hand Signals for Skiers



**Stop**



**Skier OK**

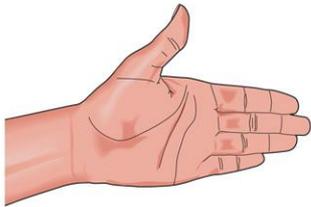


**Skier down**

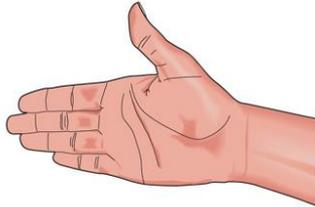
# Water-Skiing

## Hand Signals for Skiers

**Turn left**



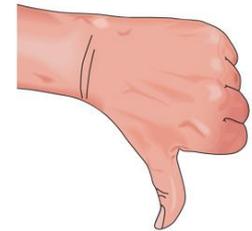
**Turn right**



**Speed up**



**Slow down**



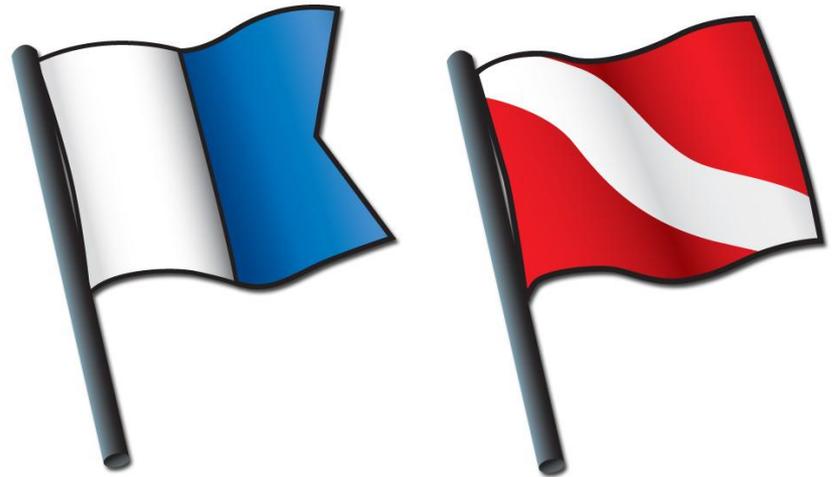
**Speed OK**



# Scuba Diving and Snorkeling

## ◆ Vessel operators should:

- Be able to recognize a diver-down flag.
- Stay the legal distance away from a flag.
- Look for bubbles.



# Scuba Diving and Snorkeling

## ◆ Divers should:

- Display the diver-down flag and stay close to it.
- Select a suitable boat.
- Avoid overloading the vessel.
- Never dive or snorkel alone.



# Windsurfing



- ◆ Dress appropriately.
- ◆ Tell someone your plans.
- ◆ Do not become fatigued.
- ◆ Watch for vessels.
- ◆ Don't go too far from shore.

# Sailing

- ◆ **Sailboats are usually the stand-on vessel.**
- ◆ **Small sailboats are prone to capsizing and swamping.**
- ◆ **Falling overboard is common. Always wear a life jacket.**
- ◆ **Sailors should always be aware of water temperature.**
- ◆ **A certified sailing course is recommended.**



# Sailing

## ◆ For safety:

- **Stay off water during storms or high winds.**
- **Carry a flashlight.**
- **Make sure sailboats with an engine have red, green, and white navigation lights.**
- **Be aware of mast clearance when passing under power lines and bridges.**

# Fishing

- ◆ **Anglers using a vessel to fish should:**
  - **Know and follow all safe boating laws and requirements.**
  - **Not overload the vessel.**
  - **Wear a life jacket.**
  - **Recycle or toss used fishing line into receptacles on shore.**
  - **Take care of the fishing boat.**



# Fishing

- ◆ **Operators of other vessels should:**
  - **Slow down when approaching fishing boats or give them wide berth.**
  - **Never run over fishing lines.**
  - **Never make a large wake near a fishing boat.**

# Hunting

## ◆ If using a vessel to hunt, you should:

- Obey all boating laws.
- Take extra precautions to avoid capsizing or swamping.
- Wear life jacket at all times.
- Dress in several layers under your PFD on cold water.



# Hunting

- Check the weather and stay close to shore.
- Not fire shots or release arrows until vessel is stopped and secured. Remain seated when shooting.
- Take these steps while transporting a firearm:
  - Obey all laws.
  - Keep firearms unloaded with the safety on and in a gun case.



# **Review Questions for Lesson 6: Enjoying Water Sports**

*Answer a series of interactive questions.*

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

