

**Dear Student or Facilitator:**

This book contains the fundamentals of safe boating. Each page has a picture that is related to the key messages (Waypoints\*) shown on that page. The picture can be used as a master for a transparency. We invite you to use your imagination to make a verbal or pictorial presentation of the topic on a page. We have also supplied an activity for each page. Have fun with it!

**For best results:**

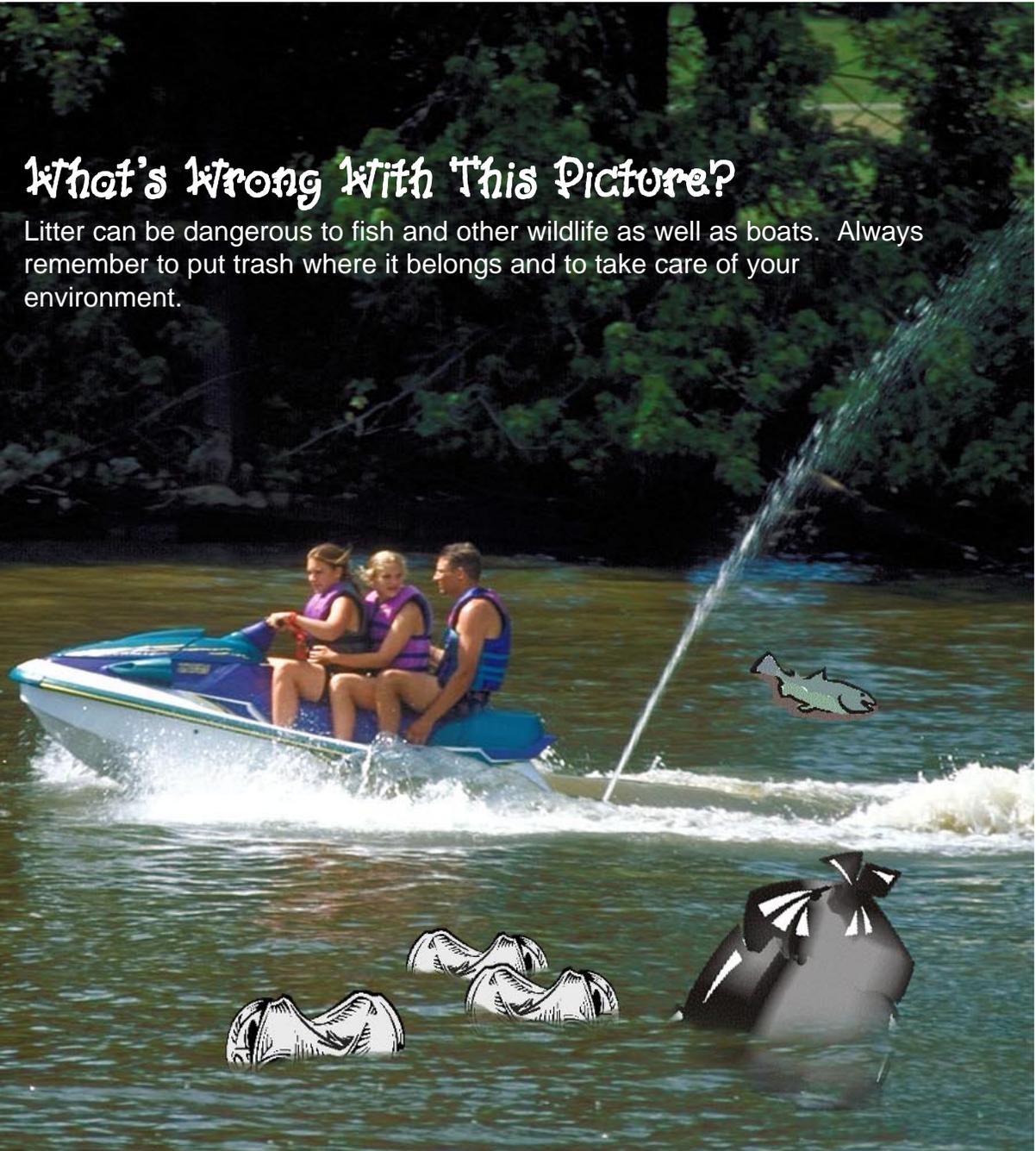
- Read the material on a page, paying special attention to words in bold.
- Answer the *One Minute Mysteries*.
- Check answers on the inside back cover (Page 14).
- Complete the crossword puzzle on Page 13. If you can correctly complete the crossword puzzle (without looking up the answers), you are ready to take a boating course that is offered in your state and to be a safe boater!

*\*Waypoints are selected stopping points on a cruise which define the legs of the voyage. In this book, Waypoints are selected points in boating education which define the segments of this course.*

Layout, design and illustrations by  
Kathleen Fosbinder Bullock

## What's Wrong With This Picture?

Litter can be dangerous to fish and other wildlife as well as boats. Always remember to put trash where it belongs and to take care of your environment.



**NOTE:** This book is based on Federal requirements. Owners/operators of watercraft should also consult appropriate authorities in the states where their boats are registered and operated to learn additional regulations.

It is important that you use the correct terminology when talking with other boaters. If you are facing forward while positioned near the center of the boat, the **bow** is the front end. The **helm** is the place from which to steer.

The **stern** is the rear portion of the boat. The **transom** is the very back board of the boat and, if the power for the boat is an outboard engine, that outboard engine will be mounted on the transom.

As you face forward, the left side of the boat is called the **port** side and the right side is called the **starboard** side. The bottom and sides, as a unit, are called the **hull**. The hull doesn't include the seats or the floor, if there is a separate floor on which to walk.

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*Waypoints*

- Like to teach kids about safe boating? Become an official instructor for the United States Coast Guard Auxiliary. Call 1-800-368-5647.
- The U.S. Army Corps of Engineers invites you to lend a helping hand; a variety of opportunities await your call. Contact the Volunteer Hotline at 1-800-865-8337.



## Parts of a Boat

**Write the correct term for each part of the boat by the numbers below:**

|          |          |
|----------|----------|
| 1. _____ | 5. _____ |
| 2. _____ | 6. _____ |
| 3. _____ | 7. _____ |
| 4. _____ |          |

**Answers on Page 14**

One wearable Type I, II, III, or V readily accessible personal flotation device (also called a life-jacket or PFD) must be carried **for each person** aboard a boat. On boats 16 ft. or longer, one Type IV must also be carried. Each PFD must be **U.S. Coast Guard approved**. Each wearable PFD must **fit the intended user**.

**Type I** is for **offshore use**. It will turn an unconscious person face up. **Type II** is for **near shore use**. It will sometimes turn an unconscious person face up. **Type III** is a flotation aid, designed for calm water and comfort, but won't keep the wearer's face out of water. Some are approved for use by water-skiers or with personal watercraft (check the manufacturer's label). **Type IV** is a cushion, ring buoy or horseshoe buoy. It is designed to be thrown to a person in the water but not to be worn. **Tie a line to it**. **Type V** "devices" are for **special purposes** and must be used in accordance with the approval condition on the label. Varieties include boardsailing vests, deck suits, pullover vests, work vests, swimwear, etc.



**Waypoints**

- Carry one wearable Type I, II, III, or V "readily accessible" PFD for each person aboard a boat. On boats 16 ft or longer, also carry one Type IV.



**TYPE I**

**TYPE II**

**TYPE III**

**TYPE IV**

**TYPE V**

## One Minute Mystery

Kathy was wearing her PFD and skiing along happily behind Lindy's boat when she suddenly took a fall. Kathy tumbled about and, because her PFD came up over her eyes, lost track of which way was up. What was wrong that gave Kathy this problem?

*Answer on Page 14*

Before leaving home, leave a **float plan** with your family or a friend. It should, at minimum, tell where you will be and when you will return.

For a safe and good ride, the people and equipment should be placed so that the boat is **trimmed** (balanced in all directions). The **capacity plate** tells the allowed maximum number of people, maximum weight of people in pounds, maximum weight of people and equipment in pounds, as well as maximum horsepower for the engine.

Federal law requires that you carry a certain set of equipment when underway in order to operate your boat legally and safely. Descriptions of the items and the circumstances for carrying them are shown on the following pages.

**Find These Words in the Puzzle**

**Equipment You Are Required to Carry**

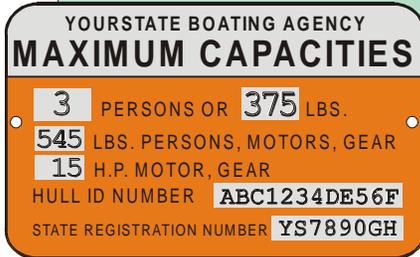
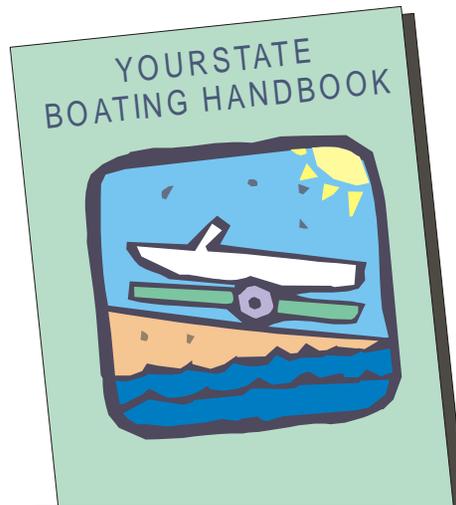
- DISTRESS (and) FLAG
- FIRE (and) EXTINGUISHER
- HORN PFD
- LIFE JACKET (one per person)

**Equipment Recommended to Carry**

- ANCHOR FIRST AID KIT
- PADDLE SUNGLASSES
- SUNSCREEN

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**Waypoints**

- File a float plan.
- Trim your boat.
- Obey your capacity plate.
- Carry the proper equipment.



**Word Search Puzzle**  
(Solution on Page 14)

R E H S I U G N I T X E  
 E R I F P L A N G I S A  
 P F D I S T R E S S F N  
 N E E R C S N U S M L C  
 H O R N P A D D L E A H  
 S U N G L A S S E S G O  
 T E K C A J E F I L I R  
 F I R S T A I D K I T D

**FLOAT or TRIP PLAN**

Name of person reporting and telephone number: \_\_\_\_\_

**Description of boat:**

Type: \_\_\_\_\_ Color: \_\_\_\_\_  
 Trim: \_\_\_\_\_ Make: \_\_\_\_\_  
 Length: \_\_\_\_\_ Boat Name: \_\_\_\_\_  
 Registration No.: \_\_\_\_\_  
 Other Information: \_\_\_\_\_

**Persons aboard:**

Name: \_\_\_\_\_ Age: \_\_\_\_\_ Address and phone: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Trip time:**

Leave at (Time): \_\_\_\_\_  
 From: \_\_\_\_\_ Going to: \_\_\_\_\_  
 Expect to return by (Time): \_\_\_\_\_

**Other pertinent information:**

Auto license no: \_\_\_\_\_ State: \_\_\_\_\_  
 Trailer License: \_\_\_\_\_  
 Color and make of auto: \_\_\_\_\_  
 Where parked: \_\_\_\_\_  
 Call the Coast Guard, or \_\_\_\_\_ (Local Authority)

Telephone numbers  
 \_\_\_\_\_  
 \_\_\_\_\_

Fill out a Float or Trip Plan (like the one above) before you go out in your boat. Leave it with family or friends. Be sure to let them know when you return!

On waters more than two miles wide along the coast or connected to them, you must carry U.S. Coast Guard approved **distress signals**; a **flag** or **orange smoke for day** and **flares at night**. Boats 16 ft. or over always must carry day and night signals. Smaller boats are required only to carry night signals if operating between sunset and sunrise. The **universal distress signal** is to **wave both arms up and down!**

**U.S. Coast Guard approved fire extinguishers** are required on boats where a fire hazard could be expected from the motors or fuel systems. **Type A** puts out wood/paper fires; **Type B (required on a boat!)** puts out gasoline and oil fires; **Type C** extinguishes electrical fires. Carry Type B or BC on board; your boat's length determines the size and number to carry. The boat's design and power determines whether a fire extinguisher is required.

A **sound-producing device is required**. A whistle or horn is most often used.

**Waypoints**

- Certain Federally required equipment must be carried on a boat underway. Other equipment may be required by your state.

Hand-Held Flare

Red Parachute Flare

Red Hand-Held Flare

Red Meteor Flare

Whistle or Horn

3'X3' Distress Flag

Orange Hand-Held Smoke Signal

Fire Extinguisher

*One Minute Mystery*

It was an eerie feeling for Brandy and Marcus when their 15 hp engine quit running. With no one in sight, they felt quite alone! Marcus wanted to send up a distress flare. Brandy said no, wait a bit! Who was right? Why did Brandy want to wait?

*Answers on Page 14*

Navigation lights must be shown on boats operating between sunset and sunrise or in other periods of reduced visibility. Sailboats and motorboats both must have a **red sidelight on port** and a **green sidelight on starboard** as well as a **white stern light** facing rear. In addition, motorboats must have a white light facing forward (**masthead light**) above the sidelights. In small motor boats, the manufacturer often combines all the white light needs into **one “all-around white light”** at the stern.

**NOTE:** A sailboat, while using an engine, is considered a motorboat and must be lighted as a motorboat.

A **very small** boat propelled only by sail or by oars can carry a **lantern** light (as its only light) to be used when another boat is near.

*Drawing shows one example of each lighting arrangement. Consult Federal Requirements for other legal configurations.*

**Waypoints**

- Federal law requires navigation lights to be shown on boats operating between sunset and sunrise or in reduced visibility. The pattern is determined by boat length and type of propulsion.

**One Minute Mystery**

In the picture above, what light will you see when you face the motorboat that you will not see when you face the sailboat?

*Answer on Page 14*

**Personal watercraft**, short boats with jet engines (sometimes called Jet Skis® or Wave Runners®), don't need navigation lights when operated between sunrise and sunset. All aboard should wear U.S. Coast Guard approved PFDs carrying a label with a statement of approval for use with PWC or 50 mph dynamic testing. Many Type III PFDs are approved for use by water-skiers or with personal watercraft (check the manufacturer's label).

Personal watercraft (PWC) must carry a sound-producing device, fire extinguisher, and the "kill-switch" lanyard (if provided) must be attached to the operator. Without throttle, there is no steering **since a jet of water both propels and steers the boat.**

Some states have age limits for operating PWC. Check your state's requirements.



### Waypoints

- Personal watercraft must carry safety equipment like other boats.
- All who ride or operate a PWC should wear U.S. Coast Guard approved PFDs with labels indicating approval for use with PWC.
- A PWC can not be steered with throttle off.



### One Minute Mystery

The first day Mattie and Carlos were riding their PWC together, a boat came by which made a great wake. They crossed it on the fly! In the process, they nearly collided with another PWC! What went wrong?

Answer on Page 14

Good steering is most needed in narrow places or near other boats. With cars, we speak of one car having “right of way.” With motorboats we speak of one boat being “stand-on” and the other being “give-way.”

“**Stand-on**” means that the motorboat will **keep going in the same direction with the same speed** as before the other motorboat came near. “**Give-way**” means that the motorboat will **change direction and also change speed so that it can stay clear or behind the other motorboat**.

**Meeting:** Each motorboat turns away from the other, usually to starboard (right), unless there is an obstacle.

**Passing:** The motorboat doing the passing is “give-way,” the one being passed is “stand-on.” The motorboat doing the passing can see the other motorboat the best. The one being passed might not even know that the other motorboat is near.

**Crossing:** The “stand-on” motorboat is to the right of the other (and sees a green sidelight). The light which the “give-way” motorboat can see is red.

### Waypoints

- The law designates motorboats as “stand-on” or “give-way” by their relative position. Each has a responsibility.

Purple Motorboats are “Give Way”  
Yellow Motorboats are “Stand On”

MEETING

PASSING

CROSSING

## One Minute Mystery

Tom and Annie were out for a cruise in their 18 ft. ski boat when a PWC passed them from the rear and cut in front of them. Tom knew that they were the “stand-on” vessel but in order to prevent an accident, he acted as if they were the “give-way” vessel. Was he right about being “stand-on?” Was he right to become the “give-way” vessel?

*Answers on Page 14*

**Red (nun)** and **green (can)** buoys are navigational aids on the water which mark sides of a channel (lane where water is deep for boats). The saying “red, right, returning” helps to remember that red buoys are to starboard when returning “from sea” (meaning from open water). Red/white vertically striped buoys mark safe water.

**White buoys with orange markings** give information or regulate where boats may go. Diamond means danger; diamond with cross means keep out; circles mark controlled areas and squares contain information.

**Safe water (mid-channel) markers** are vertically striped in red and white.

*Waypoints*

- Red and green buoys indicate sides of channels.
- Regulatory markers are white with orange markings and must be obeyed.
- Mid-channel markers are red and white vertically striped.

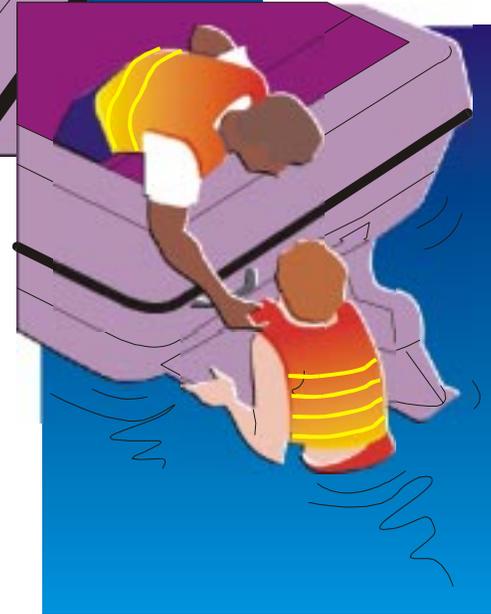
**One Minute Mystery**

What is the preferred route for the boat in this diagram to get to Point A and why?

*Answer on Page 14*

**Learn to swim!** It's fun, healthy and safe! Always **swim with a buddy** and where there is **adult supervision**. Even if you swim well, do not swim to rescue a friend who appears to be in trouble. This has caused a lot of "extra" drownings. Only trained lifeguards know how to rescue a person successfully while swimming!

If someone near you needs to be rescued, hold on to something so you won't be pulled in, then **reach** to the person with a shirt, rod, or other object. If you can't reach, **throw** a line, life jacket or anything that floats. Tie a rope to it before you throw it! If you can't throw something to the person, find some one to **row** out to make the rescue. **Don't go** in the water to rescue anyone unless you are a trained lifeguard!



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**Waypoints**

- Learn to swim.
- Swim with a buddy under adult supervision in designated areas.
- To rescue someone in trouble  
**Reach, Throw, Row, Don't go!**



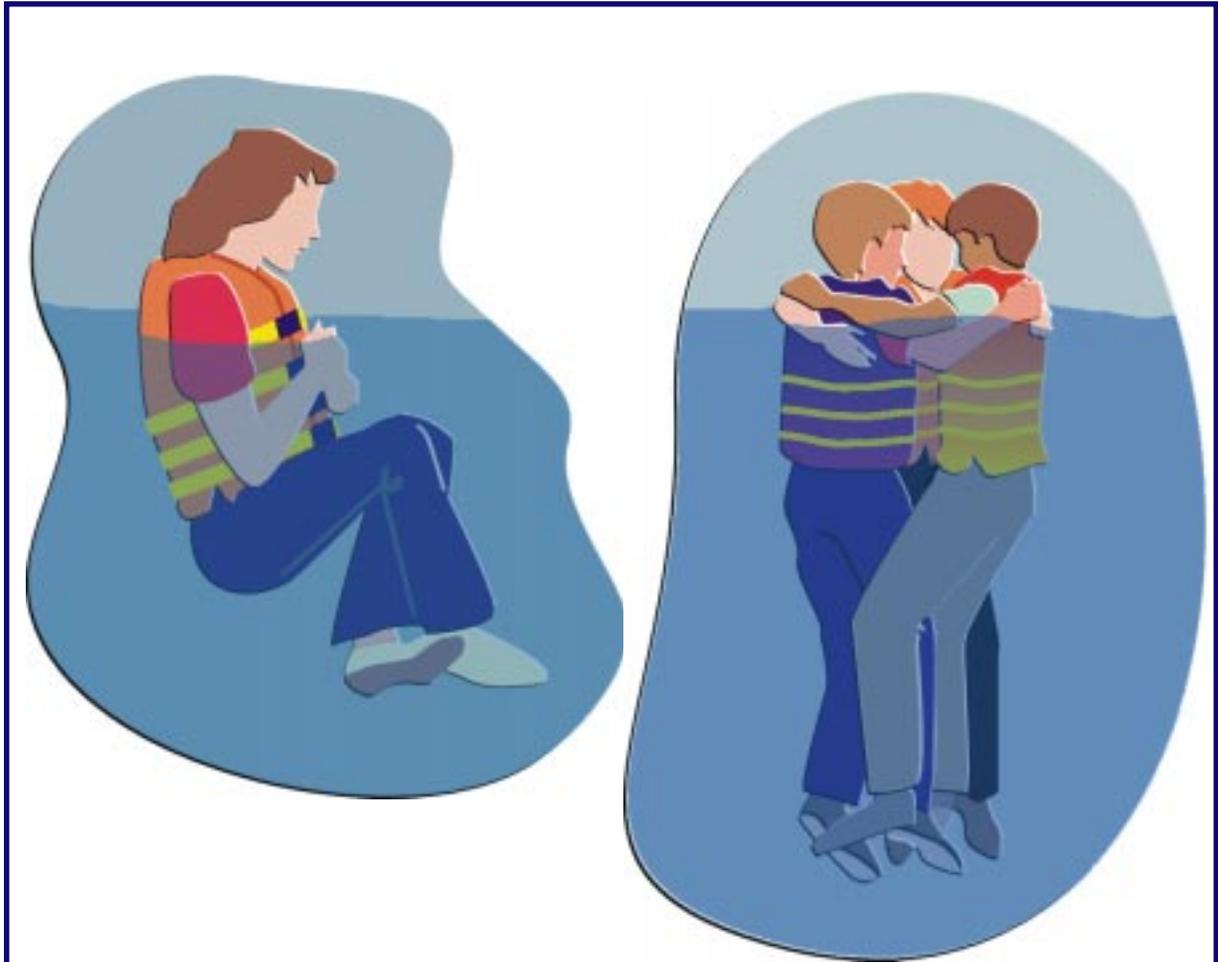
## One Minute Mystery

Michelle and her five-year old brother, Austin, were standing on the dock watching a distant boat when suddenly Michelle heard a splash! She looked around to see Austin splashing about in water over his head. On the dock with her were an oar, a ring buoy and the family canoe. How could Michelle best help Austin?

*Answer on Page 14*

When water is cold, falling overboard or having your boat capsize are life-threatening situations because of **hypothermia** (the situation where the body core temperature drops below normal). Wear your PFD for activities around cold water.

If your **boat capsizes**, try to **get up on the boat, out of the water** since water takes heat from you 25 times as fast as air does. If alone, **place your arms across your chest and draw your knees up to your chest** to conserve body heat. This is called the **HELP** (heat escape lessening position). If **several people** are in the water, **huddle together** to share body heat.



*Waypoints*

- To help avoid hypothermia in cold water, cross arms over chest and pull legs up to chest when alone or huddle when in a group.



## One Minute Mystery

Wearing his PFD, Russ took his labrador retriever hunting on a beautiful October day in his small flatbottom boat. He shot a duck and sent his lab to retrieve it, not realizing that when the dog jumped from the boat it would capsize. Russ is in water over his head wondering what to do and you are in a nearby ski boat. How could you help him?

*Answer on Page 14*

Statistics show that a very few **bad habits** cause a lot of accidents. One exceptionally bad habit is **drinking alcoholic beverages while operating a boat**. It takes very little alcohol (blood alcohol level equal to or greater than 0.1%) to make a person **less watchful** and have **slower reflexes** when reacting to situations like crossing boat traffic. It also results in **poorer judgement**. Just as it is illegal to drive a car “while under the influence” of alcohol, it is also illegal to operate a boat “while under the influence” of alcohol.

Watching for people, boats and other obstacles in the water is very important! This is called **keeping a proper lookout**. Most boating collisions are caused by inattention.

**Waypoints**

- Operating a boat while drinking alcohol causes a lot of accidents because alcohol slows reflexes and makes for poor judgement.
- Operating a boat “while under the influence” of alcohol is illegal.
- Keep a proper lookout.

Drinking alcohol

the reflexes and causes poorer

(Find the answers in the text at left.)

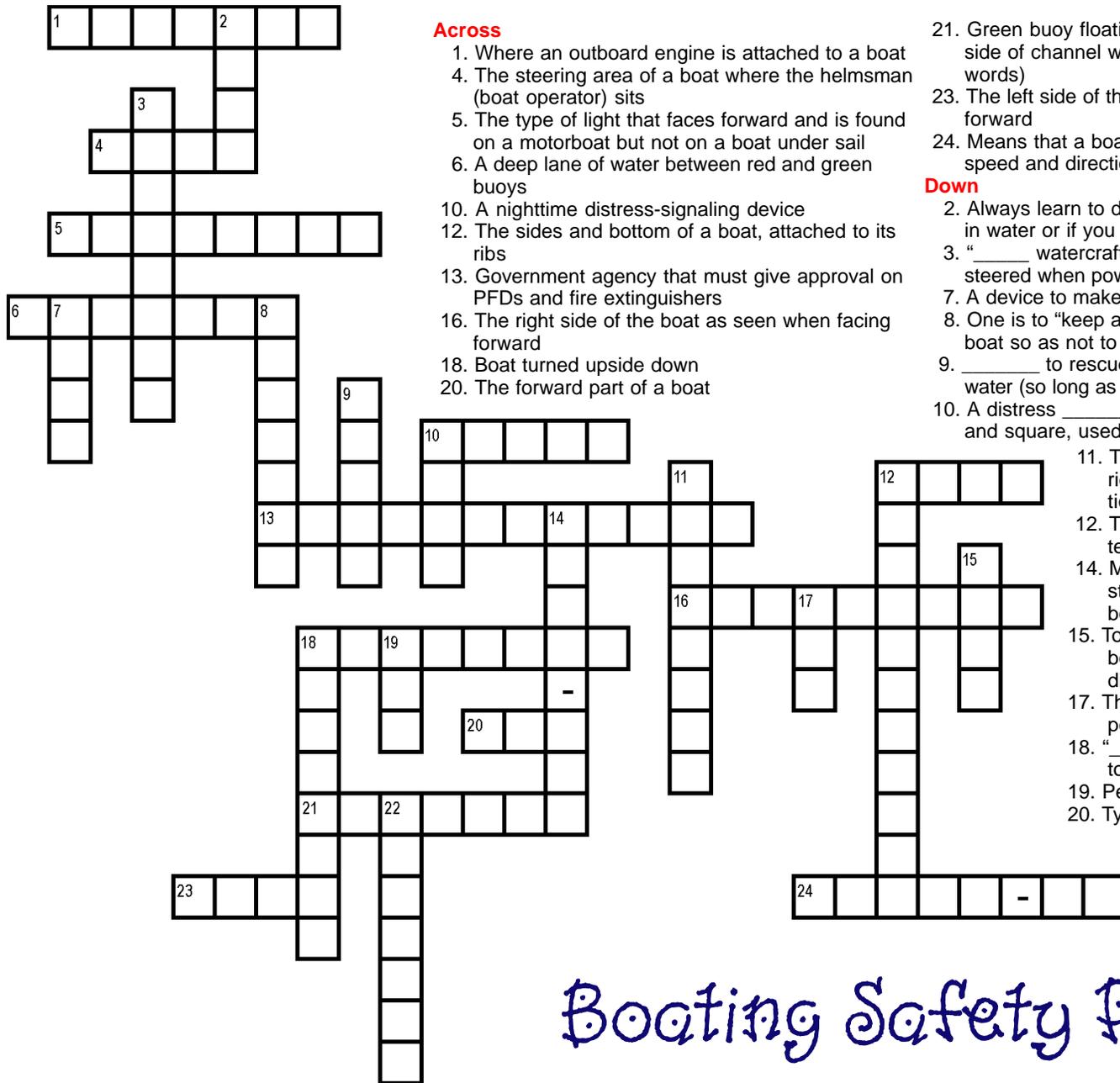
Draw an **X** across the alcoholic beverages in this picture and circle the drinks that are good to take on a boating trip.



**One Minute Mystery**

Dan was out boating with friends. The helmsman had had a few beers and didn't notice a downed water-skier in the water. Dan saved the day when he yelled at the helmsman to turn the boat. What problem did the helmsman likely have? What was Dan doing so that he knew he should turn the boat? What should Dan do next?

Answers on Page 14



**Across**

- 1. Where an outboard engine is attached to a boat
- 4. The steering area of a boat where the helmsman (boat operator) sits
- 5. The type of light that faces forward and is found on a motorboat but not on a boat under sail
- 6. A deep lane of water between red and green buoys
- 10. A nighttime distress-signaling device
- 12. The sides and bottom of a boat, attached to its ribs
- 13. Government agency that must give approval on PFDs and fire extinguishers
- 16. The right side of the boat as seen when facing forward
- 18. Boat turned upside down
- 20. The forward part of a boat

- 21. Green buoy floating aid to navigation marking left side of channel when returning from sea (two words)
- 23. The left side of the boat as seen when facing forward
- 24. Means that a boat should continue with same speed and direction

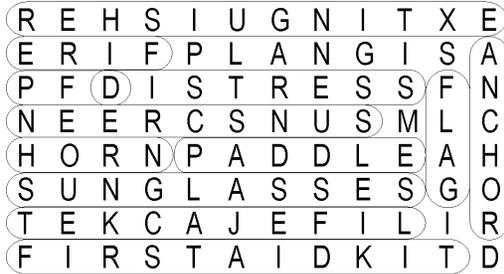
**Down**

- 2. Always learn to do this if you will be playing near or in water or if you will be boating
- 3. "\_\_\_\_\_ watercraft" are small boats which cannot be steered when power is off
- 7. A device to make noise when on a boat
- 8. One is to "keep a proper \_\_\_\_\_" when operating a boat so as not to hit anything
- 9. \_\_\_\_\_ to rescue a person who is in distress in the water (so long as you can keep from being pulled in)
- 10. A distress \_\_\_\_\_ is orange with a black circle and square, used for daytime distress signal

- 11. Two boats in each other's paths at right angles (as cars at an intersection)
- 12. The lowering of the core body temperature below normal
- 14. Means that a boat is required to stay clear of and go behind another boat
- 15. To place people and equipment in a boat so that it is balanced in every direction
- 17. The color of a sidelight found on the port side of a boat
- 18. "\_\_\_\_\_ plate" tells maximum load to be carried in a boat
- 19. Personal flotation device, life jacket
- 20. Type of fire extinguisher that puts out gasoline and oil fires (one letter answer)
- 22. Red buoy marking channel on right when returning from sea (two words)

# Boating Safety Puzzle

**Word Search Puzzle Page 4**



**Boating Safety Puzzle Page 13**

- |                      |                 |
|----------------------|-----------------|
| Across:              | Down:           |
| 1. Transom           | 2. Swim         |
| 4. Helm              | 3. Personal     |
| 5. Masthead          | 7. Horn         |
| 6. Channel           | 8. Lookout      |
| 10. Flare            | 9. Reach        |
| 12. Hull             | 10. Flag        |
| 13. U.S. Coast Guard | 11. Crossing    |
| 16. Starboard        | 12. Hypothermia |
| 18. Capsize          | 14. Give-Way    |
| 20. Bow              | 15. Trim        |
| 21. Can Buoy         | 17. Red         |
| 23. Port             | 18. Capacity    |
| 24. Stand-On         | 19. PFD         |
|                      | 20. B           |
|                      | 22. Nun Buoy    |

The **PARTNERS** listed below offer a variety of boating courses for children and adults. Call Boat/U.S. at 1-800-336-BOAT (2628) to learn more about such courses.

For fun and additional information, visit these Internet web sites:  
<http://watersafety.usace.army.mil/safepassage>

# Answer Page

*One Minute Mysteries*

- |              |            |
|--------------|------------|
| Page 2       | 4) Bow     |
| 1) Helm      | 5) Hull    |
| 2) Starboard | 6) Stern   |
| 3) Port      | 7) Transom |

Page 3  
 Kathy's PFD didn't fit as snugly as it should. When she hit the water hard, it moved from where it belonged on her body to a position up over her eyes. This is why your PFD should fit properly.

Page 5  
 Brandy was right! Always wait to send up distress flares until you can see someone near by who will see them.

Page 6  
 The white "masthead" light

Page 7  
 It was good that Mattie and Carlos rode together because they could watch out for each other. First; it may be illegal to make their PWC become airborne while crossing the wake of a boat. Second; they should have kept a better lookout. Third; they probably let off the throttle which meant that they had no steering when they landed in the water. This is how many collisions occur!

Page 8  
 When a boat passes another, the passing boat is *always* the "give-way" boat. However, if an accident is likely, a boat that is supposed to be "stand-on" should become "give-way". Tom did the right thing!

Page 9  
 The boat should go between the red and green buoys because they mark the edges of the channel where the helmsman can be sure the water will be deep enough for the boat. Any white marker with orange markings should be looked at carefully, it may warn of danger or tell the boat operator what to do.

Page 10  
 Since he is close to the dock, reach to him with the oar or throw the ring buoy to him. Don't swim to him and don't go to him in the canoe.

Page 11  
 Have Russ climb up on his boat to get out of the cold water. Come along the transom of his capsized boat with your boat and bring him into your boat. The two of you can bring in the dog across the transom of your boat.

Page 12  
 The helmsman was probably under the influence of alcohol so that his judgement was poor and reflexes slowed. Dan was keeping a proper lookout so he knew they were likely to hit the skier. After they stop the boat, Dan (who had not been drinking) should take the helm.

<http://www.uscgboating.org>  
<http://www.cgaux.org>  
<http://www.boatus.com>

<http://www.usps.org>  
<http://www.dbw.ca.gov>  
<http://www.boatsafe.com/kids/index.htm>



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