



Girl Scouts of the USA

**SMALL CRAFT
SAFETY
TRAINING
MANUAL**

This instructional manual was developed by Girl Scouts of the USA for use by Girl Scout councils. The content in this manual, small craft safety, should complement the outdoor training programs lead by councils for their staff and members.

How to Use This Workbook

This workbook is designed to help you learn and understand the material it presents. It includes the following features:

Objectives

At the beginning of each chapter is a list of objectives that describe what you should know and be able to do after reading the chapter and participating in class activities. Read these objectives carefully and refer back to them from time to time as you read the chapter.

Key Terms

At the beginning of each chapter is a list of defined key terms that you need to know to understand chapter content. In the chapter, key terms are printed in bold italics the first time they are defined or explained.

Sidebars

Feature articles called sidebars enhance the information in the main body of the text. They appear in most chapters and present a variety of information to enhance the main body of the text. You will not be tested on any information presented in these sidebars

as part of the Girl Scouts of the USA course completion recommendations.

Learning Activities

Learning activities appear in each of the craft chapters (Chapters 4-7) and at the end of each chapter. They are designed to help you understand and remember the material presented in the chapter. Answering these questions after you have read the chapter will help you evaluate your progress and prepare for the final written examination. Many of the multiple choice questions have more than one correct answer. Discuss any questions with which you have difficulty with your instructor.

Appendixes

Appendixes are located at the end of this textbook and provide additional information on topics that boaters will find useful.

Glossary

The glossary includes definitions of all key terms and of other words in the text that may be unfamiliar. All glossary terms appear in the textbook in bold type the first time they are used or explained.

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Small Craft Safety

OBJECTIVES

After reading this chapter you should be able to—

1. List water safety guidelines for activities in, on, or around the water.
2. Identify different types of open-water environments and their potential hazards.
3. Identify the types of small craft.
4. Explain the primary causes of boating accidents, injuries, and fatalities.
5. Explain the importance of wearing a life jacket when boating.
6. Describe how to prevent small craft accidents, injuries, and fatalities.
7. Identify and explain the rules of the road.
8. List and explain the legal requirements that apply to small craft.
9. Define the key terms for this chapter.

KEY TERMS

Canoe: A light, slender boat with a pointed bow and pointed or square stern, generally propelled by single-blade paddles.

Capsize: To turn a craft upside down in the water.

Collision: A craft crashing into another craft or object.

Drowning: Death by suffocation underwater.

Fall overboard: To unintentionally fall out of a craft into the water.

Kayak: A decked boat with pointed ends and a cockpit, propelled by a double-blade paddle.

Life jacket: A type of personal flotation device (PFD) that can be worn.

Open water: Natural bodies of water, such as lakes, ponds, rivers, streams, and the ocean.

Personal Flotation Device (PFD): Life jacket, buoyancy vest, wearable flotation aid, throwable flotation aid, deck suit, work vest, sailboarding vest, or hybrid inflatable flotation aid.

Rowboat: A small, open boat propelled by oars.

Rules of the Road: Navigation rules indicating right-of-way among boats to prevent collisions.

Sailboat: A boat with one or more sails, powered by wind.

Trim: The balance of a craft from front to back.

INTRODUCTION

Boating activity has increased rapidly in recent years. Many types of water craft are used for recreation, business, sport, and transportation. The United States Coast Guard estimates that there are about 20 million recreational boats in the United States.

The term *small craft* is used to describe several different types of small boats. In this workbook, small craft are nonmotorized recreational water craft. The Girl Scouts of the USA Small Craft Safety course and workbook focus on *canoes, kayaks, small sailboats, and rowboats*.

Boating can be safe and enjoyable when everyone is careful. Unfortunately emergencies still occur. This workbook will help you to recognize, prevent, and respond to small craft emergencies. You will learn about small craft trip planning, supervision, and emergency preparation. You will also learn how to protect yourself while assisting others.

The information in this workbook is intended for—

- Camp personnel, trip leaders, and small craft instructors.
- Clubs and organizations that engage in small craft activities, such as the Girl Scouts of the USA and Boy's and Girl's Clubs of America.
- Anyone involved in small craft activities for recreation, sport, work, or just for fun.

The information in this workbook is *not* intended to—

- Teach small craft operational skills, such as paddling, rowing, or sailing.
- Provide information and skills needed to become or qualify as a lifeguard.

For information on these types of specialized training, contact your local Girl Scout council or water safety training provider.

WATER SAFETY GUIDELINES

Everyone should follow safety guidelines when in, on, or around the water. These guidelines are especially important if you are leading or instructing others in a small craft activity or responding to a small craft emergency. The following are general water safety guidelines:

- Learn to swim.
- Learn boating, CPR, and first aid skills.
 - Contact your local Red Cross for information about swimming, first aid, and CPR courses.
 - Check with your local Red Cross, the U.S. Coast Guard, state boating officials, and other organizations about boating courses. (See Appendix C for a list of boating and other water safety organizations.)
- Always supervise children in, on, or around the water.
- Do not drink alcohol while swimming or boating.

- Know what to do in case of a small craft emergency.
- Do not attempt a swimming rescue unless you have specialized training and proper equipment. Remember, you can help a victim only if you stay safe yourself.
- Wear a U.S. Coast Guard-approved *life jacket* when around water or when boating.
- Be aware of potential water hazards.
- Pay attention to local weather conditions and forecasts.
- Know how to prevent accidents, recognize hazards, and care for injuries.

OPEN-WATER ENVIRONMENTS

Knowing the different types of open-water environments and their potential hazards is an important part of water safety. *Open water* has unique hazards and conditions that may change from hour to hour due to weather, tides, or currents. Check for hazards before allowing others to enter the water or go boating. The following sections describe different types of open-water environments and their possible hazards.

Lakes and Ponds

The water in lakes and ponds can be **murky** making it difficult to see below the surface. Murky conditions make it more difficult to see or rescue a submerged victim (Fig. 1-1). You may not be able to see pieces of debris and obstructions or determine the depth of the water. Serious injury or death can result from diving into water of unknown depth. Weeds and plant life may make it hard to see the bottom or may entangle swimmers. Rocks just below the surface may create obstacles for boats. Like other open-water environments, conditions in lakes and ponds can change rapidly because of weather or currents.

Figure 1-1





Figure 1-2

Rivers and Streams

Heavy rainfall and melting snow have dramatic effects on rivers. When flooding occurs, slow-moving water can quickly become a raging current. River water can be dangerously cold, especially during the winter and spring months, and in colder parts of the country. Rivers and streams often have rocks, debris, **low-head dams**, **hydraulics**, steep drops, dams, falls, **strainers**, and other hazardous obstacles (Fig. 1-2). (See Chapter 8 for more information on river hazards.)

River currents can be unpredictable and fast moving. The current's direction may change abruptly because of changes in the river bottom. The current may be stronger in some areas than in others, and usually flows faster in shallow areas than in deep areas.

When currents are slow and waves are fairly calm, you generally can help a person in trouble. However, when currents are strong and water is cold, giving assistance may be difficult or impossible. In this situation, call for help immediately. (Refer to Chapter 8 for information on recognizing, preventing, and responding to emergencies in a moving-water environment.)

The Ocean

Oceans pose a number of potential hazards, including waves, currents, sandbars, and other changing conditions (Fig. 1-3). Although these conditions are often more hazardous to swimmers close to shore, boaters must also be aware of them. Strong breaking waves can potentially capsize and injure a boater entering or exiting at the shore. Dangerous currents can carry a person or boat away from shore.



Figure 1-3

TYPES OF SMALL CRAFT

Hundreds of styles of small boats are available today. Small craft have widely varying characteristics, features, and equipment. Although every boat handles differently, the same general safety guidelines apply to each. Four basic types of small craft—canoe, kayak, sailboat, and rowboat—are described below. Chapters 4 to 7 give more details on these boats and the specific safety and rescue procedures appropriate for each.

The Canoe

Canoes are popular open water craft that are used on almost all kinds of water. Canoes of different sizes and materials have been developed for different uses and water conditions (Fig. 1-4).

Figure 1-4





Figure 1-5

The Kayak

Kayaks are constructed from a variety of materials and come in many styles, including white-water, sit-on-top, inflatable, tandem, and sea kayaks (Fig. 1-5). Many kayaks are decked boats except for the paddler's opening (cockpit).

The Sailboat

Sailboats are powered by one or more sails. Sailboats are available in a wide variety of sizes, shapes, and designs, and have varying characteristics and purposes (Fig. 1-6).

The Rowboat

The most common type of rowboat used for recreation has a flat bottom. Flat-bottom rowboats are designed for calm waters. Like other types of small craft, there are several types of rowboats, varying from wooden skiffs to fiberglass dinghies to aluminum jonboats (Fig. 1-7).

Figure 1-7

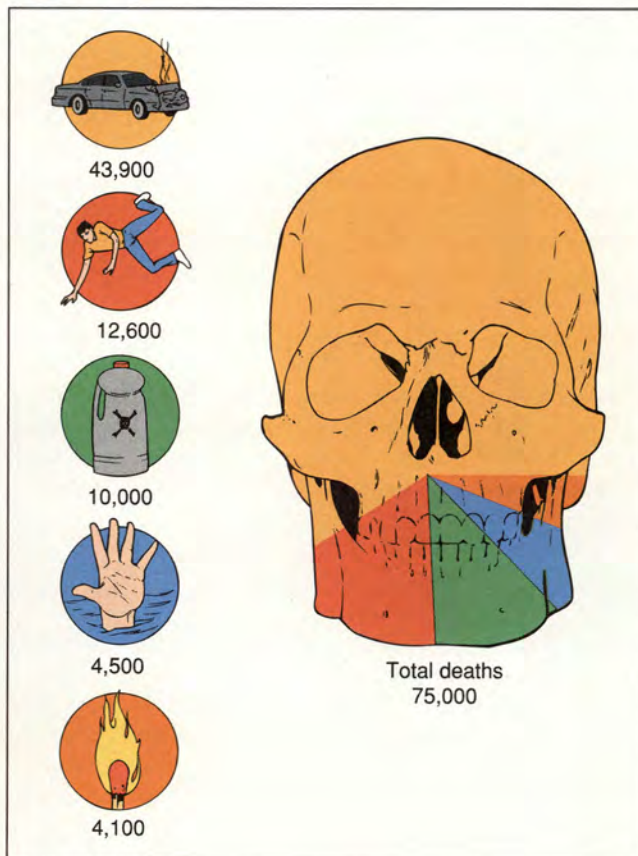


Figure 1-6

PREVENTING SMALL CRAFT ACCIDENTS, INJURIES, AND FATALITIES

Drowning is the fourth most common cause of death from unintentional injury in the United States (Fig. 1-8). Approximately 4,500 Americans drown every year. Boating activity in the United States results in thousands of accidents and

Figure 1-8



injuries, and hundreds of fatalities every year. To help reduce the number of deaths and injuries, boaters need to be educated on the fundamentals of small craft safety. Understanding the causes of small craft accidents, injuries, and fatalities can help people learn to prevent them. With proper training and adequate knowledge, many boating accidents can be avoided. Consider these facts about boating accidents and fatalities:

- Most boating accidents are caused by the operator, not by the boat or the aquatic environment.
- Most fatalities involve boats less than 16 feet long.
- Approximately 80 percent of the boating fatalities in the United States are drownings, and most of these drownings would not have occurred if the boater had been wearing a U.S. Coast Guard-approved life jacket.
- Most drownings occur when a boater unexpectedly enters the water. This happens when a boat *capsizes*, when a boater *falls overboard*, or when a *collision* occurs with another boat or object.

In addition to the hundreds of boating fatalities and thousands of serious injuries, boating accidents cause millions of dollars in property damage each year. The following sections describe how you can prevent small craft accidents, injuries, and fatalities.

Alcohol and Water Do Not Mix

Drinking alcohol in, on, or around the water is dangerous. The U.S. Coast Guard reports that more than half of boating-related drownings involve alcohol. Even a little alcohol can lead to a dangerous situation. Drinking alcohol—






- Affects balance, making it more likely that someone will fall into the water.
- Makes it harder to stay warm, even though it may initially give the illusion of warmth.
- Affects judgment and may encourage risk taking, such as diving into shallow or unknown water.
- Slows body movements and impairs vision.
- Reduces a person's boating and swimming skills.

Life Jackets

There are five approved types of *personal flotation devices* (PFDs) (Table 1-1). Types I, II, III, and V (inflatable only) are commonly referred to as life jackets.

Always wear a U.S. Coast Guard-approved life jacket when boating. The Coast Guard-approved label is attached to or printed directly on the life jacket. In addition to keeping you afloat, a life jacket will help conserve body heat and can protect you from the impact of rocks, debris, or another

TABLE 1-1

TYPE	STYLE	ILLUSTRATION	TYPICAL USE	FEATURES
I	Life jacket		Boating on offshore waters where rescue may be delayed.	May help turn an unconscious person in the water from a face-down position to a vertical, face-up position, or a slightly tipped-back position.
II	Buoyant vest		Recreational boating on inland waters where a rescue is likely to occur quickly.	May help turn an unconscious person in the water from a face-down position to a vertical, face-up position, or a slightly tipped-back position. Less buoyant than Type I life jacket.
III	Flotation vest		Paddling or sailing on inland waters where a rescue is likely to occur quickly.	May help keep a conscious person in a vertical, face-up position, or a slightly tipped-back position.
IV	Throwable device, such as buoyant cushion or ring buoy		Boating on inland waters with heavy boat traffic where help is always present.	May be thrown to a victim in an emergency. Does not take the place of wearing a life jacket or vest.
V	Special use, including hybrid inflatable PFD		Intended for specific activities, such as sailboarding.	Must be used according to directions on its label to be acceptable. A hybrid inflatable PFD must be worn to comply with legal requirements.

Illustrations from USCG Auxiliary: *Boating Safely*. Used with permission.

craft, but only if you *have it on*. Boating accidents happen quickly and unexpectedly. If an accident occurs, you will not have time to put your life jacket on, and may not even be able to find it. When supervising small craft activities, make sure everyone on board is wearing a properly fitted life jacket that is in good condition.

Choosing the right life jacket depends on the activity you are participating in and the water conditions. It should be in good condition and fit properly for your size and weight (Fig. 1-9). Never substitute a child-sized life jacket for an adult-sized life jacket or an adult-sized life jacket for a child-sized life jacket. A properly fitted life jacket should feel snug. Once you have a properly fitted life jacket, put it on and practice moving around in shallow water to get accustomed to wearing it. Check the buoyancy of the life jacket by relaxing your body and tilting your head back. The life jacket should keep your chin above water, allowing you to breathe.

Do not sit or kneel on a life jacket, such improper use can damage it. A damaged life jacket is no longer Coast Guard-approved.

Preventing Capsizes and Falls Overboard

Most boating fatalities result from capsizes or falls overboard. These accidents are more common on small craft. Most can be prevented by keeping the craft balanced and in good *trim*.

To stay balanced in a small craft—

- Do not sit on the **gunwale**.
- Keep your weight low and centered in the craft.
- When moving around in a boat, have two hands and one foot, or one hand and two feet in contact with the boat (Fig. 1-10).

Inflatable PFDs

In April 1996 the U.S. Coast Guard adopted rules for “inflatable” PFDs. Unlike traditional “filled” PFDs, these “inflatable” PFDs consist of hollow bladders that are automatically inflated with carbon dioxide from a small canister. They can also be inflated by pulling a cord on the vest or by blowing into an inflation port.

Inflatable PFDs have been popular in other countries for years. They are lightweight and allow a person to move easily while wearing the device. These features make them a good choice for those who wear PFDs for long periods of time, such as people who work around the water.

The disadvantages of inflatable PFDs include their higher initial cost and routine maintenance of the carbon dioxide canister and triggering device. Inflatable PFDs must have a visual indicator that the carbon dioxide canister has not been discharged. Inflatable PFDs are not approved for children and are not recommended for nonswimmers.



Figure 1-9

Trimming the craft means correctly balancing the craft by having the weight properly distributed between the front and the back. To trim your craft, evenly distribute the gear and passengers in the boat.

Additional causes of capsizes or falls overboard include waves, high winds, and sudden or unexpected turns. Prevent these hazards by paying attention to what you are doing, and by communicating with others around you. To avoid capsizing, steer your craft directly into large waves

Figure 1-10



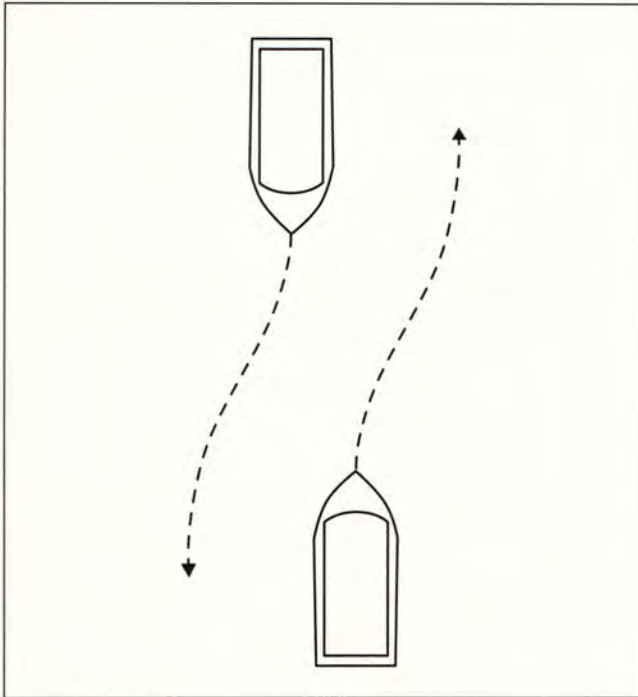


Figure 1-11

rather than letting the waves hit the craft broadside. Be sure to advise your passengers before you turn the craft. Do not go out on the water if wind or water conditions are beyond your ability, or if they are too rough for the type and size of small craft you are operating.

Preventing Collisions

Collisions with other boats or objects account for about half of all boating accidents. Collisions often result from boater carelessness or ignorance of the boating *rules of the road*. To prevent collisions, the operator of a small craft must look out for other craft and submerged objects, and must follow the rules of the road.

Rules of the Road

Whether canoeing, kayaking, sailing, or rowing, boaters should know and follow the rules of the road:

- When approaching another craft head-on, both craft keep to their right (just like cars traveling in opposite directions on a two-lane road) (Fig. 1-11).
- When crossing paths, the craft on the right has right-of-way (Fig. 1-12).
- When passing another craft from behind, the craft being overtaken has right-of-way (Fig. 1-13).
- Even if one craft has the right-of-way, both craft are responsible for avoiding a collision. Always take action to avoid a collision. Never assume that the operator of another craft knows the rules of the road.

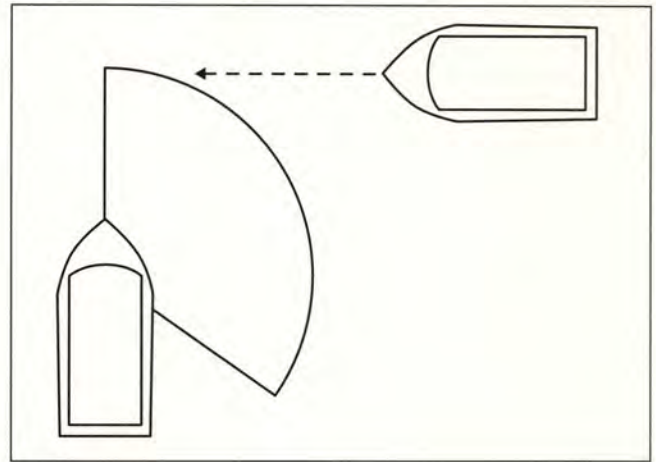


Figure 1-12

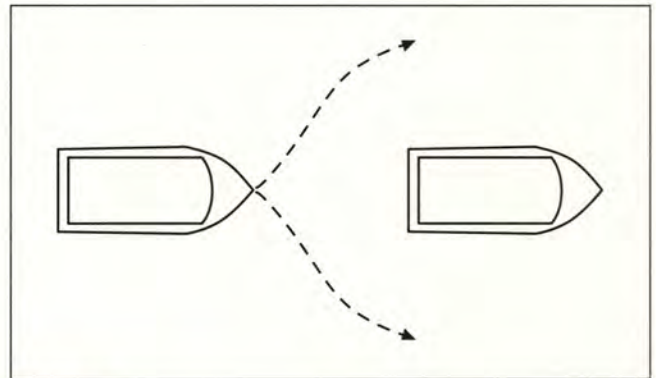


Figure 1-13

Different rules apply when small craft meet certain types of larger craft and craft under sail. To be safe in all situations, know what rules apply for situations you are likely to encounter in your boating area. Contact the local U.S. Coast Guard office or state boating administrator in your area (Appendix F) for more information.

LEGAL REQUIREMENTS

Federal and state laws regulate water craft operation. These laws often relate to safety and, in general, protect the well-being and interests of the overall boating community. Make sure you know the federal and state laws that apply to you and your craft.

Small Craft Registration

In some states all water craft are required to be registered with the state. Other states require motorboats, sailboats, or water craft over a certain length to be registered.

Personal Flotation Devices (PFDs)

Federal law mandates that boats less than 16 feet must carry a wearable PFD for each person on board. Boats 16 feet and over must also have at least one type IV PFD aboard. Wearable PFDs must be U.S. Coast Guard-approved, readily accessible, and properly sized.

Sound Devices

Due to the dangers of fog, mist, and rain, all craft are required by federal law to have a sound device on board. Craft shorter than 39.4 feet can use a whistle, horn, or bell as a sound signal.

Craft Capacity

Small craft, like any other water craft, may not be operated over capacity. Most craft have a capacity plate that indicates the maximum weight or number of people allowed on board. If your craft does not have a capacity plate, you can calculate its maximum capacity. Multiply the length of the craft, in feet, by the **beam** (width at the widest part), and divide by 15 (fractions should be rounded down).

$$\text{Maximum \# of people} = \frac{\text{Length} \times \text{Beam}}{15}$$

Navigation Lights

Most small craft are not equipped for nighttime travel. However, federal law requires that all craft on the water between sundown and sunup, and during other periods of

reduced visibility have navigation lights on board and in use. Electric torches, flashlights, or lighted lanterns with white lights are acceptable navigational lights for small craft in most states.

Visual Distress Signals

Visual distress signals are emergency devices used by craft in distress. Federal law mandates that craft operating at night carry nighttime visual distress signals, such as hand-held flares, aerial flares, or distress lights when operating on coastal waters.

Accident Reporting

If a serious boating accident or injury occurs, the proper marine law authorities must be notified, and a boating accident report must be filed in the state where the accident occurred. For a copy of the Accident Report Form see Appendix E. The U.S. Coast Guard requires that the following boating accidents be reported:

- An accident that results in death
- An accident that results in injury and requires medical attention beyond first aid
- An accident that results in property damage of \$500 or more, or the complete loss of a craft

Different legal requirements apply to different types and sizes of small craft. For further information on federal and state boating laws, contact the local U.S. Coast Guard office or state boating administrator in your area (Appendix F).

SUMMARY

Boating and other water activities can be safe and enjoyable. Follow the water safety guidelines, and understand the different types of open-water environments and their potential hazards. Understand the primary causes of small craft injuries, accidents, and fatalities. Prevent small craft accidents, injuries, and fatalities by—

- Using life jackets properly.
- Preventing capsizes, falls overboard, and collisions.
- Avoiding drinking alcohol when boating.
- Knowing the rules of the road.
- Meeting legal requirements for small craft.

LEARNING ACTIVITIES

TRUE OR FALSE

Circle the correct answer.

1. You should attempt a swimming rescue if you have no training but have the proper equipment. True or False?
2. Open water refers only to the open ocean or large inland bodies of water, such as the great lakes. True or False?
3. A fast-moving section of a river with rapids is generally shallower than a section with a slow current and smooth surface. True or False?
4. When approaching another craft head-on, both craft should keep to their right. True or False?
5. When crossing paths, the craft on the right has the right-of-way. True or False?
6. The U.S. Coast Guard requires one PFD for every two people on board. True or False?
7. A whistle, horn, or bell can be used as a sounding device on a small craft. True or False?

MULTIPLE CHOICE

Circle the letter of the best answer or answers.

1. Drinking alcohol in, on, or around the water is dangerous because it—
 - a. Impairs swimming skills.
 - b. Impairs judgment.
 - c. Reduces the ability to stay warm.
 - d. Affects balance.
 - e. All of the above.
2. Which of the following are correct statements about small craft accidents, injuries, and fatalities?
 - a. Most fatalities involve boats less than 16 feet long.
 - b. Most boating accidents are caused by the aquatic environment—not the operator.
 - c. Most drownings happen when a boat capsizes, a boater falls overboard, or when a collision occurs.
 - d. About 80 percent of boating fatalities are drownings, and could have been prevented if the boater were wearing a life jacket.
3. Which of the following are correct statements about life jackets and boating?
 - a. Most people who drown from boating accidents are not wearing a life jacket.
 - b. You do not need a life jacket if you know how to swim.
 - c. Wearing a life jacket will help conserve body heat and keep you afloat.
 - d. A life jacket may protect you from impact from rocks, debris, or another craft.
 - e. If someone needs your assistance in the water, you both are safer if you are wearing a life jacket.
 - f. You should have the life jacket close by, not on you.
4. Which of the following are the correct actions to prevent capsizes and falls overboard?
 - a. Stand up in the craft.
 - b. Do not sit on the gunwale.
 - c. When moving around in a boat, have two hands and one foot, or one hand and two feet in contact with the boat.
 - d. Put most of the passengers and gear towards the rear of the craft.
 - e. Pay attention to what you are doing, and communicate with others around you.
5. Which of the following statements is NOT correct?
 - a. Life jackets should always be worn when boating.
 - b. A properly fitted life jacket should feel snug.
 - c. Inflatable Type V life jackets can be used as seat cushions.
 - d. Make sure your life jacket is U.S. Coast Guard-approved.
6. To avoid collisions while boating—
 - a. Learn and follow the boating rules of the road.
 - b. Register your craft with the proper authorities.
 - c. Keep a proper lookout for other craft and submerged objects.
 - d. a and c.

FILL IN

Fill in the correct answers.

1. You want to go boating with some friends. Your craft is 14 feet long, and the beam is 5 feet. What is the maximum number of people allowed in the craft? _____

2. List 5 or more potential hazards found in different types of open-water environments. _____

SCENARIO

1. You are taking a group of campers out on the water. The trip will be on a lake.

a. List at least three water safety guidelines you should follow. _____

b. What type of hazards could you expect? _____

c. What advice can you give the group to avoid cap-sizes, falls overboard, and collisions? _____

d. Should you and all participants be wearing life jackets? _____

e. Why or why not? _____



chapter

Trip Planning, Supervision, and Emergency Preparation

OBJECTIVES

After reading this chapter you should be able to—

1. Identify the steps in planning a safe and enjoyable small craft outing.
2. Describe the responsibilities and legal considerations for group leaders.
3. Identify what information should be included in a float plan.
4. Recognize hazardous weather conditions, and know what to do if a storm approaches.
5. Identify safety equipment and appropriate clothing for a safe trip.
6. Explain the importance of communication, leader-to-participant ratios, and leader location.
7. Discuss how to prepare for an emergency.
8. Write and develop an emergency action plan (EAP).
9. Define the key terms for this chapter.

KEY TERMS

Critical Incident Stress: The stress a person experiences during or after a highly stressful emergency.

Emergency Action Plan (EAP): A written plan detailing how members of a group are to respond in a specific type of emergency.

Emergency Medical Services (EMS): Community resources and medical personnel that provide emergency care to victims of injury or sudden illness.

Float plan: A written plan with details of a boating trip, left with someone ashore.

Liability: A legal responsibility.

Standard of care: The degree of care expected from a reasonable and careful person under the same or similar circumstances.

INTRODUCTION

Boats can transport people to exciting new environments. People of all ages, levels of experience, and ability enjoy the satisfaction and exhilaration of boating. With good planning and supervision, boating can be safe and fun. This chapter will teach you the importance of small craft trip planning, supervision, and emergency preparation.

SMALL CRAFT TRIP PLANNING

Planning a safe and enjoyable trip includes—

- Selecting a leader.
- Knowing the responsibilities and legal considerations.
- Selecting the locale and route.
- Checking the weather conditions.
- Checking the water conditions.
- Choosing the appropriate clothing.
- Selecting and checking the appropriate equipment.
- Preparing for possible emergencies.

Selecting a Leader

A group leader should be a responsible person with leadership experience, safety training, and good judgment. He or she should have experience in an environment similar to the group's destination. The group leader should be able to guide the group through all phases of the trip, and take charge if a crisis arises. *Do not attempt a trip without competent leadership.*

Responsibilities and Legal Considerations

As a group leader, you are responsible for the safety of trip participants. To help provide for the safety of the participants, consider their limits, skill levels, and experience. Be aware of and responsive to medical conditions or restrictions that participants may have. Ask participants to tell you their abilities, limitations, and other considerations.

Regardless of ability, people share the same need for fun, adventure, and skill development. Simple adaptations can help all people enjoy small craft activities. It is best to meet each individual's needs and focus on the participant's ability, not disability.

Providing for the safety of small craft participants with disabilities is similar to providing for the safety of small craft participants without disabilities. Certain accommodations and adjustments need to be made, depending on the participant's ability, type of craft, and water environment. The prevention of small craft accidents, injuries, and fatalities through proper trip planning, supervision, and emergency preparation is the best way to help provide for everyone's safety.

Being a group leader involves some legal responsibility, or *liability*. Group leaders should have a thorough under-

standing of the responsibilities and legal implications of supervising a group. This information can help prevent accidents and **negligence** which may result in a **lawsuit**.

Group leaders—both volunteer and paid—are legally accountable for their actions and may be responsible for the actions of group members as well. They need to know the policies and procedures of the facility or organization with which they are associated.

Group leaders may be required to have certain training and certifications. They are expected to provide a **standard of care** that includes accepting responsibility for minimizing risks and responding quickly and appropriately in emergency situations. Specific responsibilities of group leaders are set by an employer, organization, or other governing agency and should be communicated to and understood by the group leader.

Selecting the Locale and Route

The location, duration, and difficulty of the trip should depend on the capabilities of the group, type of craft, and weather conditions. Keep in mind the limits of your ability and the group members' abilities. If the trip is beyond your ability or the abilities of your group members, change the trip plan.

Detailed planning makes trips safer. Guidebooks that include information about possible campsites, known hazards, river classifications, and **portage** trails are a good source of information for small craft trips. Printed reference materials, maps, and navigation charts are often available through local, state, or federal agencies.

Before departing, fill out a **float plan**. This plan should include the following information:

- Names of group members
- Starting point
- Route and checkpoints
- Destination
- Planned return time
- Whom to contact if you do not return as scheduled

A float plan is particularly important if you are traveling in a wilderness area, or if you plan to be gone for an extended period of time. Give the float plan to a responsible person, and ask him or her to contact the local Coast Guard or law enforcement agency if you do not return as scheduled. (See Appendix D for a sample float plan.)

Checking the Weather Conditions

Storms, high winds, and fog are dangerous to boaters. Check the weather forecast in the local newspaper and on local radio or television stations. Consider delaying or postponing your trip if you encounter any of the following signs of bad weather:

- Growing cloud cover and darkening skies
- Sudden changes in wind velocity or direction, or gusty winds

- Lightning
- Thunder
- Increasing waves
- Sudden temperature changes

If a storm approaches while you are on the water—

- Return to shore at the first sound of thunder or flash of lightning, regardless of how far away it seems. Water conducts the electricity of lightning.
- Seek shelter in an enclosed area.
- Stay away from open areas, trees, and tall or metal objects.

- If you are caught in a boat during a storm and unable to return to shore, stay as low as possible in the craft.

Checking the Water Conditions

Good weather does not automatically mean that water conditions are good. The weather may be sunny, clear, and calm—yet a river's water could be dangerously fast and cold because of recent rains or snow melt. The water level of many lakes and rivers is controlled by dams and can change quickly. Water conditions can also be affected by tides,

Lightning

Approximately 100 times each second,¹ a lightning bolt strikes the earth. (Lightning bolts can generate temperatures that are hotter than the surface of the sun—up to 50,000 degrees F.²) Each year, lightning strikes in the United States kill about 100 people and injure about 300 more.³

The explosive shock wave generated by the lightning bolt causes the noise that we call “thunder.” If you can hear thunder, you can be struck by lightning. Whenever you hear thunder, leave the water immediately and seek safe shelter. Stay in a safe place for 15 minutes after you last hear thunder or see lightning.

A safe shelter might be—

- Inside a sturdy building (not an isolated shed or a picnic shelter).
- Inside an all-metal car (not a convertible).

If shelter is unavailable follow these guidelines:

- Get out of the boat and away from the water.
- Find the lowest spot possible, and avoid trees, poles, or other objects that project above the terrain.
- If in a group, spread out and stay away from any metal gear or equipment.

In any case, stay away from water and grounded metal objects that conduct electricity, including fences, pipes, electric appliances, telephones, and metal sheds. If your skin begins to tingle or your hair feels like it's standing on end, assume the

“lightning safe position.”⁴ Squat or crouch as low as possible, with your knees drawn up, both feet together, and hands off the ground.

Do not lie flat on the ground; minimize ground contact.



If someone is struck by lightning, give first aid immediately. Most people struck by lightning stop breathing and suffer serious injuries, yet survive. Outdoor activity leaders should be trained in first aid and CPR and be able to give proper care in emergencies.

To help avoid lightning strikes, listen to National Oceanic and Atmospheric Administration (NOAA) weather radio, commercial radio, or television weather reports before your outing. Be alert for these warnings:

- A severe thunderstorm *watch* tells you when and where thunderstorms are most likely to occur.
- A severe thunderstorm *warning* tells you that severe weather has already been reported by spotters or indicated by radar.



National Oceanic and Atmospheric Administration (NOAA)

¹ L. Michael Trapasso and Greg Owens, *Eye to the Sky: Understanding the Danger of Thunderstorms and Lightning* (Parks & Recreation), August 1996, Vol. 31, No. 8, pp. 62-67.

² *Thunderstorms and Lightning, the Underrated Killers!* (NOAA and the American Red Cross), January 1994.

³ Trapasso and Owens, *Eye to the Sky: Understanding the Danger of Thunderstorms and Lightning*.

⁴ Ibid.

currents, and other hazards. Proper planning includes finding out about these conditions and potential hazards ahead of time.

Choosing the Appropriate Equipment

Some of the factors to consider when choosing equipment include the duration of the trip, type of water, weather conditions, remoteness of location, and potential portages. Take equipment that is in good shape, and practice using the equipment before the trip. Consider bringing the following:

Group items

- Matches in a waterproof container
- Flashlight with extra bulbs and batteries
- Tent or other shelter
- Food and cooking gear
- Water purification tablets or filter
- Maps, charts, and compass
- Portable radio for weather reports
- Boat repair kit
- Tools, such as pliers and screwdrivers
- Duct tape

Personal items

- Toiletry kit
- Head and eye gear, such as a hat, helmet, and sunglasses
- Extra clothes in waterproof bags
- Rain gear
- Dry suit or wet suit
- Ground cloth
- Sleeping bag
- Sleeping pad
- Waterproof packs
- Footwear
- Drinking water
- Toilet paper
- Sunscreen and insect repellent

Helmet and Paddling

In certain types of water you should wear a helmet specially designed for paddling. Kayakers paddling a decked craft generally wear helmets to protect their heads when they roll. Canoeers using **thigh straps**, paddling a decked craft, or canoeing difficult rapids often wear helmets as well. It is important to take into account the type of water, craft, activity, and ability of participants when making a decision about helmet use. If you are instructing or leading paddling activities for an organization, check with the organization for specific guidelines regarding helmet use.

If you and your group are wearing helmets, make sure they are designed for paddling, and that they are properly sized and fitted.



Figure 2-1

Safety Equipment

Regardless of the type of boat, make sure that you have the basic safety equipment on board. The exact equipment required depends on federal, regional, and state laws; the type of small craft; and the location and duration of your trip. A basic list includes the following (Fig. 2-1):

- A U.S. Coast Guard-approved life jacket for each person on board
- A Type IV (throwable) PFD
- A throw bag
- Extra line/rope
- Extra paddles/oars
- Bailers and sponges
- A first aid kit in a waterproof container
- Blankets
- A means of communication, such as a cellular phone or two-way radio
- A sound device, such as an air horn or whistle
- A visual distress signal, such as a flare, strobe light, signal mirror, chemical light stick, or colored dye marker

Checking the Craft and Equipment

Before starting your trip, check your boat and equipment to make sure they are in good working order.

- Test new and unfamiliar equipment.
- Make certain that the craft is in good repair. On a multi-day trip, check the craft at the beginning of each day.
- Make sure that the paddles or oars are strong and properly sized.
- Install safety lines that you can hold onto in case your craft capsizes. These lines may also aid in craft recovery.
- Make sure all lines and equipment are properly secured to avoid entanglement while operating your craft.
- Make sure the craft is not overloaded.
- Make sure you have appropriate repair materials and equipment.

Choosing the Appropriate Clothing

Choose clothing that preserves body heat even when wet. Consider a layer of insulating clothing (wool, **polypropylene**, **capalene**) under a jacket and pants made of a light, waterproof fabric like a paddle suit. This provides insulation for warmth, helps shed water, and reduces heat loss from wind and evaporation.

Another option is a wet suit or dry suit. Many frequent boaters invest in some wet suit components like a vest, shorts, and booties.

Wear shoes to keep you from slipping, and to protect your feet from cuts and other injuries. Avoid wearing heavy or bulky footwear such as boots. Wear a hat to protect your face from the sun and keep your head warm.

SMALL CRAFT SUPERVISION

There are a number of elements to supervising small craft participants safely and effectively. These include effective communication, safe leader-to-participant ratios, and proper supervisor location.

Communication

Good communication is necessary for boating safety, regardless of whether you're in a canoe, kayak, sailboat, or rowboat. Before starting a small craft outing, communicate the following to participants:

- Each participant's responsibilities
- Safety rules for participants
- Where and how far craft may travel
- Emergency signals to be used, such as whistle blows or hand signals
- Distance between craft

Effective communication is essential for everyone's safety on the water. Regardless of the type of craft, communicate the following information to your passengers and to other craft:

- Announce any sudden changes in direction.
- Warn fellow boaters of objects or other craft that need to be avoided.
- Warn passengers of any wake, waves, or rapids that are coming up.
- Advise others on board if you need to move or change positions.
- Advise other craft in your group if they are too far away, too far ahead, or falling behind.

Leader-to-Participant Ratios

Many camps, agencies, and outfitters establish leader-to-participant ratios for small craft activities. These ratios are set to provide adequate supervision and participant safety.

Check with your state or local boating administrator for leader-to-participant ratios. If no ratios are established, consider the following factors in determining leader-to-participant ratios for small craft activities:

- Number of craft being supervised
- Number of participants being supervised
- Age and ability of participants
- Type of craft being supervised
- Type of water and weather conditions
- Type, duration, and location of the activity

Leader Location

Proper location of small craft leaders will help provide effective supervision. The same factors that determine adequate leader-to-participant ratios need to be considered when determining leader location; the number of craft and participants being supervised; the age and ability of participants; the type of craft; water and weather conditions; and the type, duration, and location of the activity. There are several options:

- The leader may be in the **lead craft**—the front or first craft. The lead craft should have someone in it who has previously navigated the waters and is familiar with the area.
- The leader may be in the **sweep craft**—the craft that brings up the rear to ensure that no one is left behind.
- The leader may be in the **safety boat**, also known as the chase boat. From a safety boat, a number of small craft can be observed, and any craft that stray too far can be retrieved.
- The leader may elect to move among the various craft to ensure all is well and to offer any instructions or answer questions.

EMERGENCY PREPARATION

Being prepared for an emergency means being ready *before* it happens. Although you cannot foresee every water-related emergency, following the water safety guidelines in the Introduction (see page 2) should help prevent emergencies from occurring. If an emergency *does* occur, being prepared may help lower the risk of serious injury or death.

To be prepared for an emergency, you must first understand the aquatic environment you will be in. Always—

- Be aware of the conditions and potential hazards of the water environment whether it is a lake, river, ocean, or other body of water. Know its unique conditions, as well as hazards common in your geographical area, such as storms, currents, and underwater obstructions.
- Understand the various recreational activities that are common in the water environment. Consider the age and ability of participants in those activities.



Figure 2-2

- Learn what kind of accidents and injuries have occurred in the past in the water environment. This knowledge will help you prevent further injuries, and be prepared for similar aquatic emergencies.
- Have the appropriate safety equipment (see page 14) and first aid supplies for the water environment (Fig. 2-2).

Emergency Action Plan

When responding to an emergency, you should have a plan to direct your actions. This is called an *emergency action plan (EAP)*. It includes appropriate steps to follow when an emergency occurs. An EAP should be—

- Simple.
- Easy to remember.
- In writing and clearly understood by everyone in the group.

The plan should be discussed and practiced regularly so that everyone knows what to do. For example, if a craft car-

rying several people capsizes and everyone falls into the water, will everyone know what to do? Will the group leader know what to do if one of the people is not found immediately? Knowing exactly what to do in an emergency can help prevent serious injury and possibly save lives.

Developing an Emergency Action Plan

An EAP should be developed for any emergency that could occur in a small craft activity. An EAP includes these general features:

- How the person who recognizes the emergency is to signal others
- The steps each person in the group should take in an emergency
- The location of rescue and safety equipment
- Actions to minimize the emergency and safely rescue any victims
- How to call for medical assistance when needed
- Follow-up procedures after an emergency

Before writing your EAP, talk with fellow staff members, volunteer leaders, and participants. If you belong to an agency or organization, check its safety guidelines or consult with the safety officer.

Most emergency action plans include steps for managing specific types of emergencies. For example, an incident involving multiple victims may require coordinating the efforts of different group members.

Contents of an Emergency Action Plan

An emergency action plan should include the following content areas as appropriate:

- Layout of facility/environment
 - *Emergency Medical Services (EMS)* access and entry/exit routes
 - Location of rescue and first aid equipment
 - Location of telephones, with emergency telephone numbers posted
 - Exits and evacuation routes
- Equipment available
 - Rescue equipment
 - First aid supplies
 - Emergency equipment
- Support personnel
 - Internal
 - + Staff members
 - + Volunteer leaders
 - + Participants
 - External
 - + EMS personnel (police officers and fire fighters)
 - + Search and rescue team and local Coast Guard
 - + Hospitals
- Staff Responsibilities
 - Assign each person or staff member a duty—

When Help Is Delayed

When emergency medical care is delayed 30 minutes or more it is called a delayed-help situation. This delay exists because there may be no easy way—

- To call for help.
- For emergency personnel to reach the victim.
- To transport the victim to medical care.

When planning a trip in a delayed-help environment, several major considerations will help you determine special safety needs. These include—

- How many people in the group know first aid for delayed-help environments and CPR?
- How many people are trained in water safety?
- What is the maximum anticipated delay in obtaining medical help?
- What is the total duration of the trip or activity?
- What is the level of risk associated with the activity and environment?

- Do any group members have preexisting medical or physical conditions?
- What special equipment and supplies are needed?
- How many people are in the group?

If an emergency occurs in the wilderness, you may need to improvise or modify the care you provide, depending on the environment and the circumstances. You will need to spend more time caring for the victim and monitoring his or her condition while waiting for help.

You need to consider how you are going to get help.

Should you—

- Stay where you are and call, radio, or signal for help?
- Send someone to get help or leave the victim alone to go get help?
- Transport the victim to get help?

- + Provide care.
- + Warn other craft of emergency.
- + Meet EMS personnel.
- + Interview witnesses.

► Communication

- Means available to obtain medical help or access to call 9-1-1
- The local emergency number, and who will make the call
- Chain of command
- Person to contact family/guardian
- Person to deal with media

► Follow-up

- This includes items such as EAP evaluation and documentation. See the following section, “After an Emergency,” for a detailed description of follow-up items.

After an Emergency

When the emergency is over you may need to complete follow-up procedures. For example, you may be responsible for—

- Confirming that witnesses have been interviewed and their observations documented.

- Reporting the incident to the appropriate individual (this may be your supervisor) or authorities.
- Contacting a victim’s family/guardian.
- Dealing with the media.
- Inspecting equipment and supplies used in the emergency. Make sure that all equipment used is back in place and in good working condition. Replace any used supplies.
- Filling out any report forms and transmitting the reports appropriately.
- Conducting a debriefing or arranging a critical incident stress debriefing (see page 19).
- Assessing what happened and evaluating the actions taken. You should—
 - Review the event as a group.
 - Consider what worked well and what could have worked better.
 - Change the EAP to correct any weak areas.
 - Practice the new plan as soon as possible.

Reports

All injuries and incidents should be documented and reported appropriately.

These reports may be used for insurance purposes and in a court of law. Some agencies or organizations may already have a form for this purpose. If not, one can be developed from the examples on page 18.

INSTRUCTIONS FOR EMERGENCY TELEPHONE CALLS**Emergency telephone numbers***(dial _____ for outside line)*

EMS: _____

Fire: _____

Police: _____

Poison Control Center: _____

Number of this telephone: _____

Other Important Telephone Numbers

Facility manager: _____

Facility maintenance: _____

Power company: _____

Gas company: _____

Weather bureau: _____

Name and address of medical facility with 24-hour emergency cardiac care: _____

Information for Emergency Call*(Be prepared to give this information to the EMS dispatcher)*

1. Location: _____

Street address _____

City or town _____

Directions (cross streets, roads, landmarks, etc.): _____

2. Telephone number from which the call is being made _____

3. Caller's name _____

4. What happened _____

5. How many people are injured _____

6. Condition of injured person(s) _____

7. Help (care) being provided _____

Note: Do not hang up first. Let the EMS dispatcher hang up first.

Note: In cities with Enhanced 9-1-1 (9-1-1E) systems, it is still important to know the information above for communication to the dispatcher. In many buildings, the telephone system may connect through a switchboard that will show only the corporate address rather than the specific facility from which you are calling. With cellular telephones, 9-1-1E is not functional in identifying a fixed location on the dispatcher's screen. Sharing this information is the only way to provide it.

(Sample form—post by telephone)

SAMPLE INCIDENT REPORT FORM

Date of report: _____ Date of incident: _____

Time of incident: _____

Facility Information

Facility: _____ Phone #: _____

Address: _____ City _____

State _____ Zip _____

Personal Data - Injured Party

Name: _____ Age: _____ Gender: _____

Address: _____ City _____

State _____ Zip _____

Phone number(s): home: _____

work: _____

Family contact (name and phone #): _____

Incident Data

Location of incident: _____

Description of incident: _____

Was an injury sustained? Yes _____ No _____

If yes, describe the type of injury sustained: _____

Witnesses _____

1. Name: _____ Phone #: _____

Address: _____ City _____

State _____ Zip _____

2. Name: _____ Phone #: _____

Address: _____ City _____

State _____ Zip _____

Care Provided

Did victim refuse medical attention by staff? _____

Yes _____ No _____

Was care provided by facility staff? Yes _____ No _____

Name of the person who provided care: _____

Describe in detail care provided: _____

Were universal precautions taken? Yes _____ No _____

Was EMS called? _____

If yes, by whom? _____ Time EMS called: _____

Time EMS arrived: _____

Was the victim transported to an emergency facility? _____

If yes, where? _____

If no, person returned to activity? Yes _____ No _____

If no, what was the referral action taken: _____

Victim's signature (Parent's/Guardian's if victim is a minor): _____

Date: _____

Facility Data

Number of staff on duty at time of incident: _____

Weather conditions at time of incident: _____

Conditions at time of incident: _____

Name(s) of staff involved in incident: _____

Report Prepared By:

Name (please print): _____

Position: _____

Signature: _____

Critical Incident Stress

An emergency involving a serious injury or death is a critical incident. The acute stress it causes an individual can overcome his or her ability to cope. This acute stress is called *critical incident stress*.

Some effects of critical incident stress may appear right away and others may appear after days, weeks, or even months have passed. People suffering from critical incident stress may not be able to perform their jobs well. If not managed properly, this acute stress may lead to a serious condition called post-traumatic stress disorder.

Signs of critical incident stress include the following:

- Confusion
- Lowered attention span; restlessness
- Denial
- Guilt or depression
- Anger
- Anxiety
- Changes in interactions with others
- Increased or decreased eating (weight gain or weight loss)
- Uncharacteristic, excessive humor or silence
- Unusual behavior
- Sleeplessness
- Nightmares

Critical incident stress requires professional help to prevent post-traumatic stress disorder. An individual can reduce stress by—

- Practicing relaxation techniques.
- Eating a balanced diet.
- Avoiding caffeine, alcohol, and drugs.
- Getting enough rest.
- Participating in some type of physical exercise or activity.

Critical Incident Stress Debriefing

A process called critical incident stress debriefing (CISD) brings together a group of people experiencing critical incident stress with some of their peers, such as other staff members, and a trained mental health professional. This process helps those with critical incident stress share and understand their feelings while learning to cope.

Emergency service agencies usually have CISD teams trained to respond and give critical incident stress debriefings. Emergency action plans should include information on obtaining help for managing critical incident stress.

For more information on CISD and stress management, contact: Critical Incident Stress Foundation, 10176 Baltimore National Pike, Suite 201, Ellicott City, Maryland 21042-3652, (410) 750-9600, or a local mental health professional.

SUMMARY

A group leader for a boating trip has many responsibilities, including the safety of trip participants. When planning a trip, both the leader and participants must make informed decisions. It is important to know the local weather patterns and the aquatic environment. Make sure you have the

proper equipment—including first aid and rescue equipment—and know how to use it. Know how to prepare and maintain the water craft. Above all, write an emergency action plan (EAP) and practice it regularly so that everyone knows their role in an emergency.

LEARNING ACTIVITIES**TRUE OR FALSE**

Circle the correct answer.

1. A group leader cannot be held responsible for the actions of group members. True or False?
2. The location, duration, and difficulty of the trip should primarily depend on the skill and experience of the group members. True or False?
3. If the weather is fair, you can assume that water conditions are favorable. True or False?
4. An emergency action plan should be understood by everyone in the group. True or False?
5. An emergency action plan should be detailed and cover any emergency that could occur in planned small craft activities. True or False?

MULTIPLE CHOICE

Circle the letter of the best answer or answers.

1. Necessary skills of a group leader include—
 - a. Leadership experience and safety training.
 - b. Weather forecasting.
 - c. The ability to take charge in a crisis.
 - d. Experience in an environment similar to the group's destination.
 - e. a, c, and d.
2. A good float plan includes—
 - a. Names of the group members.
 - b. Starting point, checkpoints, and destination.
 - c. Approximate time of arrival at destination.
 - d. Whom to contact if you do not return as scheduled.
 - e. All of the above.
3. Which of the following items is NOT a guideline to follow before an aquatic outing?
 - a. Check manufacturer's warranty.
 - b. Test new and unfamiliar equipment.
 - c. Secure all lines and equipment to avoid entanglements.
 - d. Make sure the craft is not overloaded.
 - e. Make sure appropriate repair materials are on board.
4. An emergency action plan should include the following:
 - a. How to signal members of the group that an emergency has occurred
 - b. The location of rescue equipment
 - c. Reporting an incident to the media
 - d. a and b
5. The primary way incident reports may help prevent similar incidents in the future is by—
 - a. Serving as a legal document, which may be used in court.
 - b. Fulfilling a requirement of federal, state, and/or local government.
 - c. Providing a record that can be reviewed to make an activity or outing safer.
 - d. Identifying who was at fault.
 - e. Punishing those found at fault.

FILL IN

Fill in the correct answers.

1. List at least four signs of possible bad weather:

2. Prior to embarking on a boating excursion, you should fill out a _____ and give it to a responsible person.
3. Basic boating safety equipment includes (list four or more): _____

SCENARIO

1. You have been asked to make sure the annual employee canoe trip down a local river is a safe event.

a. List four points of emergency preparation:

1. _____
2. _____
3. _____
4. _____

b. Basic safety equipment includes, a first aid kit, means of communication, and visual distress signal. Other safety equipment the group should carry includes (list at least three)—

c. What are some important steps you need to take to plan for a safe and enjoyable trip? (list at least three)—

d. What information about the participants should you consider when planning a trip? (list at least three)—



Basic Water Rescue

OBJECTIVES

After reading this chapter you should be able to—

1. Describe survival floating in warm water.
2. Describe how to trap air in your clothing for buoyancy.
3. Describe what you can do to prevent or delay hypothermia.
4. Describe what to do if you fall into water without a life jacket.
5. Recognize the characteristics of distressed swimmers and active and passive drowning victims.
6. Identify at least three situations in which a head, neck, or back injury should be suspected.
7. Identify at least five signals of a head, neck, or back injury.
8. Describe the five guidelines for caring for a head, neck, or back injury.
9. Describe how to assist someone having a seizure in the water.
10. Explain the importance of emergency care after a victim is out of the water.
11. Define the key terms for this chapter.

After reading this chapter and completing the appropriate course activities, you should be able to—

1. Demonstrate the HELP and huddle positions.
2. Demonstrate two reaching assists.
3. Demonstrate throwing assists using two different pieces of equipment.
4. Demonstrate the wading assist, the walking assist, and the beach drag.
5. Demonstrate two ways to stabilize a victim's head, neck, and back in the water.

KEY TERMS

Active drowning victim: A person exhibiting universal behavior that includes struggling at the surface for 20 to 60 seconds before submerging.

Distressed swimmer: A person capable of staying afloat but likely to need assistance to get to safety.

Emergency Medical Services (EMS) personnel: Trained and equipped community-based personnel dispatched through an emergency number, usually

9-1-1, to provide medical care to victims of injury or sudden illness.

Hypothermia: A life-threatening condition in which the body is unable to maintain warmth and the entire body cools.

Passive drowning victim: An unconscious victim facedown, submerged, or near the surface of the water.

INTRODUCTION

It is not uncommon for boaters to end up in the water unexpectedly. In this chapter you will learn how to rescue yourself and others from the water in different situations. You will also learn what to do when special situations occur, such as head, neck, and back injuries, or **seizures**.

SELF-RESCUE

Self-rescue skills are important for any person who may find himself or herself in the water unexpectedly and may be unable to reach help immediately. If you find yourself in water and are wearing a life jacket, you can stay safe on the surface until you reach safety or are rescued by others. If you are in the water without a life jacket and you cannot reach safety, do not panic. You can use different methods to stay afloat while awaiting rescue or making your way to safety.

If you can swim, use a stroke that keeps your arms in the water, such as the breaststroke, sidestroke, or elementary backstroke. Swim in a way that is most comfortable for you. Perfect strokes are not necessary to keep from sinking. Tread water or float while you try to signal for help, and wait to be rescued.

The next sections describe survival floating and two ways to trap air in your clothing for buoyancy in case you find yourself in the water without a life jacket. Practice these so that you are prepared for an emergency.

Survival Floating

Survival floating is floating facedown in *warm water*. Use this method if you cannot reach safety and need to wait for help, or need to rest while making your way to safety.

When facedown in the water, your body tends to swing down to a nearly vertical position, with your head at or just below the surface. Survival floating is based on this natural position. It helps someone in warm water save energy while waiting to be rescued. By making slow and easy movements with your arms and legs, you can stay afloat in this position for a long period of time.

1. Hold your breath and put your face in the water. Allow your arms and legs to hang freely. Rest in this position for a few seconds (Fig. 3-1, A).
2. To take a breath, slowly lift your arms to about shoulder height and move your arms forward. Separate your legs, moving one leg forward and one leg back.
3. Gently press down with your arms and at the same time bring your legs together. This movement lifts your mouth above water, allowing you to take another breath (Fig. 3-1, B).
4. Return to the resting position. Repeat these movements to take the next breath.



A



B

Figure 3-1, A and B

Self-Rescue When Clothed

Water emergencies can happen even when you do not intend to go in the water. If you find yourself in the water unexpectedly, leave your clothes on. Most clothing can help you float. If you can float wearing your shoes, leave them on. If they are too heavy, remove them.

If you are wearing a long-sleeved shirt or jacket, try to trap air in the shoulders to help keep you afloat. Use either of the following methods to get air into your shirt or jacket for flotation:

Method 1

Use this method to inflate your shirt or jacket by blowing air into it.

1. While treading water, tuck your shirt or jacket in, or tie the shirttail ends together.
2. Unbutton the collar button, take a deep breath, bend your head forward into the water, pull the shirt or jacket up to your face, and blow into the shirt (Fig. 3-2, A).
3. Keep the front of the shirt or jacket underwater and hold the collar closed. The air will rise and form a bubble in the shoulders of the shirt or jacket (Fig. 3-2, B).
4. Repeat the steps to reinflate the shirt or jacket, if necessary.



Figure 3-2, A and B



Figure 3-3, A and B

Method 2

Use this method to inflate your shirt or jacket by splashing air into it.

1. While treading water, fasten the top buttons of the shirt or zip the jacket up to the neck.
2. Hold the front bottom of the shirt or jacket out with one hand, keeping it just under the surface of the water. Lean back slightly.
3. From above the surface, strike the water with your free hand (palm down) and drive it down to a point below the shirttail or jacket. The air carried down from the surface will bubble into the shirt or jacket (Fig. 3-3, A).
4. Keep the front of the shirt or jacket underwater and hold the collar and shirttail closed. The air will rise and form a bubble in the shoulders of the shirt or jacket (Fig. 3-3, B).
5. Repeat the steps to reinflate the shirt or jacket, if necessary.

You may also use your pants to help keep you afloat if you are in *warm water*.

1. Take a deep breath, lean forward into the water, reach down, and remove your shoes.
2. While treading water, loosen the waistband and/or belt of your pants.

3. Again, take a deep breath, lean forward, reach down, and take off your pants one leg at a time. Bring your face to the surface and take a breath whenever you need one. Do not hurry (Fig. 3-4, A).
4. Once the pants are off, tie both legs together at the cuff, or tie a knot in each leg as close as you can to the bottom of the leg (Fig. 3-4, B). Then zip or button the pants to the waist.
5. Hold the back of the waistband underwater with one hand, and with the pants on the surface, splash air into the open waistband with your free hand. Splash the air in by striking down with the palm of your hand and following through to below the waistband held open below the surface (Fig. 3-4, C).
6. You can also inflate your pants by submerging and blowing air into them through the open waistband underwater (Fig. 3-5).
7. When the pants are inflated, gather the waistband together either in your hands, or by tightening the belt. Slip your head between the pant legs where they are tied together. If the pant legs are tied separately, reach one arm over and between the two pant legs for support (Fig. 3-6, A, B).
8. Repeat the steps to reinflate the pants, if necessary.



Figure 3-4, A, B and C



Figure 3-5

Self-Rescue When Wearing a Life Jacket

If you fall into deep water wearing a life jacket—

1. Keep your face and head above the surface. If you are near a capsized boat or large debris, such as logs or boards, climb as far out of the water as you can onto the boat or debris. Get as much of your body out of the water as possible.

2. Keep all your clothes on, especially your hat. Even wet clothes help maintain your body heat.

In cold water, you must decide between trying to reach safety or floating while waiting for help. Remember that you cannot swim as far in cold water as in warm water. If you can reach safety with a few strokes, do so. If not, float and wait to be rescued. If you swim, use strokes that will keep your arms underwater, such as the breaststroke or sidestroke. Keeping your arms underwater uses less energy.

HELP Position

HELP stands for Heat Escape Lessening Posture. This position is used by one person wearing a life jacket to conserve body heat in cold water while awaiting rescue.

1. Draw your knees up to your chest.
2. Keep your face forward and out of the water.
3. Hold your upper arms at your sides, and hold your lower arms against or across your chest (Fig. 3-7).

Do not use the HELP position in moving water.



Figure 3-6, A and B



Figure 3-7

Huddle Position

The **huddle position** is for two or more people wearing life jackets to conserve body heat in *cold water* while awaiting rescue.

- With two people, put your arms around each other so that your chests are together.
- With three or more people, put your arms over each other's shoulders so that the sides of your chests are together (Fig. 3-8). Place children or elderly persons in the middle of the huddle.

Do not use the huddle position in fast-moving water.



Figure 3-8

RESCUING OTHERS

You need to know how to rescue others from the water in addition to yourself. This starts with recognizing when an emergency is happening.

Recognizing Aquatic Emergencies

An emergency can happen to anyone in, on, or around the water. Emergencies can occur regardless of how experienced the boater is or how good of a swimmer the person is. A boater may have trouble in the water because of a sudden unexpected fall, capsizes, or collision.

Recognizing that a person is having trouble in the water may help save his or her life. People slip underwater quickly without calling for help. Therefore, you need to recognize that a person may be in trouble before it is

too late. Table 3-1 summarizes how to recognize *distressed swimmers* and *active* and *passive drowning victims*.

Rescue Guidelines

Knowing how to help others in the water is important. Always act safely to reduce the risk of becoming a victim yourself. To stay safe when helping someone in trouble, do not enter the water.

If you must assist someone who is having trouble in the water, you must have appropriate equipment for your own safety and the victim's. For example, wear a life jacket when helping someone in open water. If the appropriate safety equipment is not available and there is a chance that you cannot safely help a person in trouble, call for immediate assistance.

Note: Swimming into deep water to bring a victim to shore requires special training (for example, lifeguard training) and equipment. Do not swim out to a victim without the proper training and equipment. You can put yourself in danger and risk two lives rather than saving one.

Reaching Assist with Equipment

If a victim is close enough, without going into the water yourself, use a **reaching assist** to help him or her out of the water. Use any object to extend your reach, such as a pole,



Figure 3-9

a **shepherd's crook**, an oar, a paddle, a tree branch, a shirt, a belt, or a towel. Follow these steps to keep yourself safe:

1. Brace yourself in the craft, on the pier surface, or shoreline.
2. Extend the object to the victim (Fig. 3-9).
3. When the victim grasps the object, slowly and carefully pull him or her to safety. Keep your body low, and lean back to avoid being pulled into the water.

TABLE 3-1

BEHAVIORS	SWIMMER	DISTRESSED SWIMMER	ACTIVE DROWNING VICTIM	PASSIVE DROWNING VICTIM
Breathing	 Rhythmic breathing	 Can continue breathing and call for help	 Struggles to breathe; cannot call out for help	 Not breathing
Arm and Leg Action	Relatively coordinated movement	Floating, sculling, or treading water; can wave for help	Arms to sides alternately moving up and pressing down; no supporting kick	None
Body Position	Horizontal	Horizontal, vertical, or diagonal, depending on means of support	Vertical	Facedown, submerged
Locomotion	Recognizable	Little or no forward progress; less and less able to support self	None; has only 20-60 seconds before submerging	None



Figure 3-10

Reaching Assist without Equipment

If there is no equipment available to perform a reaching assist, you can—

1. Brace yourself in the craft, on the pier surface, or shoreline.
2. Reach with your arm and grasp the victim (Fig. 3-10).
3. Pull the victim to safety.

If you are already in the water, you can—

1. Hold onto a ladder, pier, piling, or another secure object with one hand.
2. Extend your free hand or one of your legs to the victim (Fig. 3-11). Do not let go of the secure object or swim out into the water.
3. Pull the victim to safety.

Throwing Assist

Use a **throwing assist** to rescue someone from a shoreline or pier who is beyond your reach. Throw the victim a buoyant



Figure 3-11

object tied to a line. He or she can grasp the object and be pulled to safety. Throwing equipment includes U.S. Coast Guard Type IV devices (such as ring buoys and/or buoyant cushions), heaving lines, throw bags, rescue tubes, or any floating object at hand—such as a picnic jug, or extra life jacket. Throwing equipment should be carried on small craft and kept at waterfront areas.

A **throw bag** is a small rescue device often used in small craft. It is a nylon bag with a foam disk and coiled line inside. The disk gives the bag its shape and keeps it from sinking, but it does not provide flotation for someone in the water.

You can make your own **heaving jug** (Fig. 3-12) to keep in your boat and throw to someone having trouble in the water. Put a half-inch of water in a gallon plastic jug, seal it, and attach 50 to 75 feet of floating line to the handle. Hold the handle and throw it with a swinging motion. Release the jug at eye level. The weight of the water in the jug helps carry it to the person in the water (Fig. 3-13).

A heaving line should be made of floating line that is white, yellow, or another easy-to-see color. Tie an object to

Figure 3-12



Figure 3-13





Figure 3-14



Figure 3-15

the end of the floating line that has some weight but floats. With about half of the coiled line free to run out from one hand, use the other hand to swing the weighted float in an underhand toss to the person in the water.

A ring buoy is made of cork, kapok, cellular foam, or some other buoyant material. It weighs from 3 to 7 pounds. The ring buoy should be attached to a lightweight towline with a large knot at the end to prevent it from slipping out from under your foot when you throw it. Throw the ring buoy underhand.

To perform a throwing assist—

1. Get into a stride position: the leg opposite your throwing arm is forward. This helps to keep your balance when you throw the object (Fig. 3-14).
2. Step on the end of the line with your forward foot.
3. Shout to get the victim's attention. Make eye contact and say that you are going to throw the object now. Tell the victim to grab it.
4. Bend your knees and throw the object to the victim. Try to throw the object upwind and/or up current, just over the victim's head, so the line drops within reach (Fig. 3-15).
5. When the victim has grasped the object or the line, slowly pull him or her to safety (Fig. 3-16). Lean away from the water as you pull.
6. If the object does not reach the victim, quickly pull the line back in and throw it again. Try to keep the line from tangling, but do not waste time trying to recoil it. If the object is a throw bag, partially fill the bag with some water and throw it again.

If the throwing assist does not work, and the water is shallow and safe for wading, try a wading assist with equipment.

Figure 3-16





Figure 3-17, A and B

Wading Assist with Equipment

If a current or soft bottom makes wading dangerous, do not go in the water. If the water is safe and shallow enough (not over your chest), you can wade in to reach to the victim. If possible, wear a life jacket. Take something to reach to the victim, such as a—

- Rescue tube.
- Ring buoy.
- Buoyant cushion.
- Kickboard.
- Life jacket.
- Tree branch.
- Pole.
- Air mattress.
- Plastic cooler.
- Picnic jug.
- Paddle.

To perform a wading assist—

1. Take a floating object to extend to the victim.
2. Wade into the water and extend the object to the victim (Fig. 3-17, A, B).
3. When the victim grasps the object, tell him or her to hold on to the object tightly for support, and pull him or her to safety.
4. Keep the object between you and the victim to help prevent him or her from clutching at you in a panic.

Removal from the Water

Sometimes a victim is unconscious or too exhausted to climb or get out of the water. Your decision whether to remove the victim from the water depends on the victim's condition, the length of time before you expect help to arrive, the size of the victim, and the availability of others to help you.

Beach Drag

Use the **beach drag** in shallow water on a sloping shore or beach. This method works well with a heavy or unconscious

victim. *Do not use the beach drag if you suspect the victim has a head, neck, or back injury.*

1. Stand behind the victim and grasp him or her under the armpits. Support the head with your forearms.
2. Walk backward slowly and drag the victim onto the shore (Fig. 3-18).
3. Pull the victim completely from the water if you can, or at least get the victim's head and shoulders out of the water.

If someone else is available to help, drag the victim out together as shown in Figure 3-19.

Walking Assist

A victim who is in shallow water and can stand may be able to walk with your help. To use the **walking assist**—

1. Put one of the victim's arms around your neck and over your shoulder.
2. Hold the wrist of the arm that is over your shoulder, and wrap your free arm around the victim's back or waist.
3. Hold the victim firmly, and help him or her walk out of the water (Fig. 3-20).

Figure 3-18



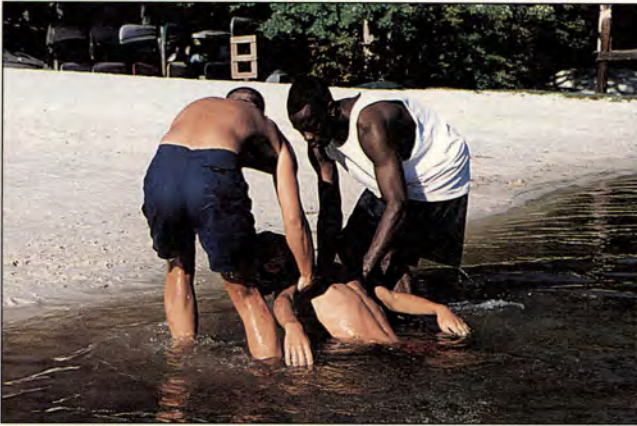


Figure 3-19



Figure 3-20

EMERGENCY CARE

Head, Neck, and Back Injury

An injury can happen anywhere on the head, neck, or back. Neck injuries most commonly occur when a person dives into shallow water and hits the bottom or strikes an object head-first.

Always suspect a head, neck, or back injury in the following situations:

- Any fall from a height greater than the person's height
- Any person found unconscious for an unknown reason
- Any serious head injury
- Any injury from using a diving board or water slide, or from diving from a height, such as a bank or a cliff
- Diving into shallow water

Always be alert to these signals of head, neck, or back injuries:

- Changes in consciousness
- Pain along the spine at the site of the injury
- Partial or complete loss of movement in the arms, legs, hands, or feet
- Tingling or loss of sensation in the arms, legs, hands, or feet
- Disorientation
- Abnormal shape of the back or neck
- Bruise(s) over the spine
- Difficulty breathing or no breathing
- Obvious head injury
- Fluid (other than water) or blood in the ears
- Sudden memory loss

Caring for Possible Head, Neck, or Back Injury

In shallow water, follow these steps:

1. Be sure someone has called 9-1-1 or the local emergency number. If other people are present, ask someone to help you.

2. Prevent movement of the victim's head, neck, and back. Try to keep the victim's head in line with the body, but do not pull on the head. Use one of the two methods described in the next section.
3. Position the victim faceup at the surface of the water using the **head splint** method described in the next section. Keep the victim's face out of the water to allow him or her to breathe.
4. Check for consciousness and breathing once you have stabilized the victim's head, neck, and back. A person who can talk is conscious and breathing. If the victim is unconscious and not breathing, remove the victim from the water immediately and provide **rescue breathing**. Attempt to minimize movement of the head, neck, and back when removing the victim from the water. When providing rescue breathing, lift the victim's chin without tilting the head back (jaw thrust) (Fig. 3-21).
5. If the victim is breathing, support the victim in the water with his or her head, neck, and back immobilized until help arrives.

Figure 3-21





Figure 3-22

Stabilizing the Head, Neck, and Back Using the Hip and Shoulder Support

Use the hip and shoulder support for a victim who is faceup at or near the surface when you reach him or her.

1. Approach the victim from the side, and lower yourself to about shoulder depth.
2. Slide one arm under the victim's shoulders and the other under the hips. Hold the victim's body horizontally, keeping the victim's face out of the water (Fig. 3-22).
3. Do not lift the victim. Hold him or her still in the water until help arrives and takes over.

Stabilizing the Head, Neck, and Back Using the Head Splint

Use the head splint for a victim found facedown at or near the surface.

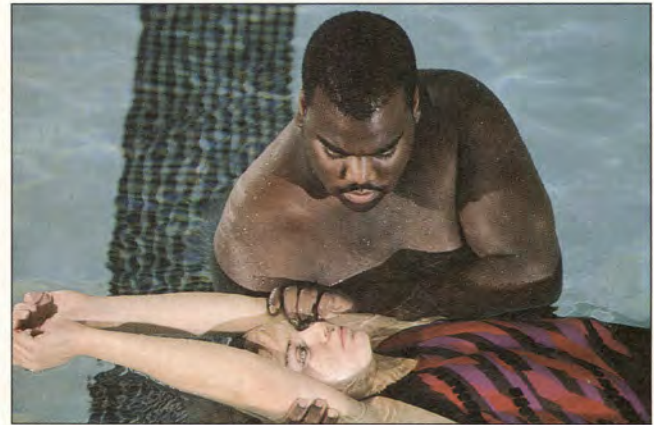
1. Approach the victim from the side.
2. Gently move the victim's arms up alongside the head by grasping the victim's arms midway between the shoulder and elbow. Move the victim's right arm with your right hand, and the victim's left arm with your left hand.
3. Squeeze the victim's arms against the head to help keep the head in line with the body (Fig. 3-23, A).
4. Glide the victim forward slowly.
5. Move slowly and rotate the victim toward you until he or she is faceup. To rotate the victim, push the victim's closer arm underwater while pulling the other arm across the surface toward you (Fig. 3-23, B).
6. Position the victim's head in the crook of your arm, keeping the head in line with the body (Fig. 3-23, C). In water with currents, hold the victim's head upstream to keep the body from twisting.
7. Do not lift the victim. Hold him or her still in the water until help arrives and takes over.



A



B



C

Figure 3-23, A, B and C

Hypothermia

Hypothermia is a life-threatening condition in which the body is unable to maintain warmth and the entire body cools. Hypothermia caused by cold water is especially dangerous. Heat is lost in still water 25 times faster than it is lost in still air of the same temperature. In moving water, the rate of heat loss increases substantially. For instance, in a 5 MPH water current the human body may lose heat 240 times faster than in still air of a similar temperature.

- After you enter cold water, several things occur:
- The temperature of your skin and the blood in your arms and legs drops quickly. You may lose the use of your hands.
 - Breathing may be hard at first.
 - The temperature of your heart, brain, and other vital organs gradually drops.
 - Shivering can occur.
 - You may become confused and disoriented.

- You may lose consciousness.
- If your temperature continues to drop, heart failure may occur.

The fastest and most common way for death to occur from hypothermia in the water is for the cold water to cause an uncontrollable loss of movement and muscle control. This results in the victim's inability to swim, and eventually leads to drowning.

How Cold Is Cold?

Some define cold water as water that is 70 degrees F or less. Others maintain if it feels cold, then it is cold. Most cases of hypothermia occur when the water temperature is 60 degrees F or less. However, the core temperature begins to drop after a person is exposed to water cooler than 92 degrees for fifteen minutes or longer.¹ It is more important to understand and pre-

vent the potentially deadly effects of cold water than to define cold water. You should recognize the signs of hypothermia, understand some of the factors that affect the onset of hypothermia, and know how to care for it.

¹ USMC, Marine Combat Instructor of Water Survival

PREDICTED SURVIVAL IN COLD WATER

Method	Time (Hrs)
<i>(Without a life jacket)</i>	
Survival floating	1.5
Treading water	2.0
<i>(With a life jacket)</i>	
Swimming	2.0
Holding still	2.7
H.E.L.P. position	4.0
Huddle position	4.0

The survival time is of the average adult in approximately 50° F water

USMC, Marine Combat Instructor of Water Survival

Factors Which Affect Hypothermia Survival

- Gender**—Women lose heat more slowly than men.
- Physical fitness level**—The better shape you are in, the better your chances of survival.
- Water temperature**—The colder the water, the more dangerous it is.
- Age**—Very old and very young people are more susceptible to hypothermia.
- Activity**—Remaining motionless in water increases survivability.
- Body size**—A larger, heavier build increases survival time.
- Length of exposure**—The longer you are in the water, the less your chances of survival.

USMC, Marine Combat Instructor of Water Survival

Hypothermia Level	Core Body Temperature	Description
Mild (awake with shivers)	99.6	Normal rectal temperature
	96.8	Increased metabolic rate
	95.0	Maximum shivering
	93.2	Victim usually responsive, maximum blood pressure
	91.4	Increasing severity of hypothermia
	89.6	Consciousness clouded, shivering stops
Moderate (awake without shivers)	87.8	Blood pressure difficult to obtain
	86.0	Approaching unconsciousness/rigidity
	85.2	Slow pulse/respiration; cardiac irregularity may develop
	82.4	Ventricular fibrillation may occur
	80.6	Voluntary motion lost; appears dead
	78.8	Victim seldom conscious
Major (unconscious; may appear to be dead)	77.0	Spontaneous ventricular fibrillation
	75.2	Pulmonary edema develops
	71.6	Maximum risk of fibrillation
	69.8	Heart standstill

Source: Smith and Smith, *Water Rescue*, Mosby-Year Book

Protect yourself from hypothermia by—

- Always wearing a U.S. Coast Guard–approved life jacket while boating on cold water. In addition to providing flotation, a life jacket helps conserve body heat.
- Wearing layers of insulated clothes that keep you warm even while wet, such as clothing made from wool or containing polypropylene or capalene.
- Wearing a wet suit or dry suit during aquatic activities.
- Wearing a hat. Body heat is quickly lost through the head.

If you are on a boat and you capsize in cold water—

- Get out of the water, if at all possible.
- Climb up into or onto your boat.
- If other boaters are nearby, signal for them to help you out of the water.
- Do not move around in the water in an attempt to keep warm. This will actually cool your body faster.

Hypothermia is a medical emergency that requires prompt care. Call 9-1-1 or the local emergency number and follow these steps immediately if you fall into cold water.

1. Get out of the water and get to a warm place.
2. Remove wet clothing.
3. Gradually rewarm your body by wrapping yourself in blankets or putting on dry clothes. Cover your head to prevent further heat loss.

Note: Be careful not to rewarm yourself too quickly. Rapid rewarming can cause dangerous heart rhythms.

4. Drink warm nonalcoholic and decaffeinated liquids.

To care for others—

1. Call 9-1-1 or the local emergency number.
2. Get the victim to a warm place.
3. Remove any wet clothing and dry the victim.
4. Gradually rewarm the victim's body by wrapping him or her in blankets or putting dry clothes on the victim. Cover the victim's head to prevent further heat loss.
5. Give warm nonalcoholic and decaffeinated liquids to a conscious victim.
6. For an unconscious victim, monitor the victim's breathing and pulse. Be prepared to give rescue breathing or CPR.

Seizures

You must move quickly to help someone having a **seizure** in the water. A person may suddenly become unconscious and slip underwater without calling for help. He or she may inhale water into his or her lungs, leading to life-threatening conditions. To assist someone having a seizure in the water—

1. Have someone call 9-1-1 or the local emergency number.
2. Support the victim to keep the head and face above water so that he or she can breathe and avoid inhaling water.



Figure 3-24

3. Remove the victim from the water after the seizure.
4. Place the victim on his or her side to let fluids drain from the mouth (Fig. 3-24).
5. Provide emergency care, if needed (see pages 34-35).

Unconscious Victim

A victim lying motionless and facedown in the water may be unconscious. If the water is not above your chest, wade into the water with flotation equipment. If you do not suspect a head, neck, or back injury, turn the victim face-up, and then bring him or her to the shoreline. Remove the victim from the water and provide emergency care.

If you are boating and must provide care for an unconscious victim, there are several factors you need to consider which may effect the care you provide:

- Weather and water conditions—how deep, shallow, or cold is the water?
- Distance from shore or safety
- Availability of other rescuers
- Type of craft
- Victim's condition

Check the scene and the victim. Consider your own abilities, safety, and available resources.

Emergency Care

The emergency is not over when the victim is out of the water. It is crucial to provide first aid until *EMS personnel* arrive and take over. The care you give can help prevent further injury, disability, or even death. Critical first aid actions include the following:

- If the victim is not breathing, give rescue breathing. If the victim does not have a pulse give CPR (Fig. 3-25).
- If the airway is obstructed, give abdominal thrusts (Heimlich maneuver) for a child or adult, or back blows and chest thrusts for an infant, to clear the airway. Once



Figure 3-25

the airway is clear, give rescue breathing or CPR, if needed.

- Control bleeding, if necessary.
- If the victim is cold, use dry towels or blankets to keep him or her warm and care for hypothermia.
- If the victim is conscious, reassure and comfort him or her until help arrives.

Note: If you do not have current training in first aid and CPR, contact your local Red Cross for further information about available courses.

SUMMARY

Always wear a life jacket while participating in activities on or around the water. Even if you are a good swimmer, you may find yourself in the water and unable to reach safety. If you do end up in the water, knowing how to stay afloat while awaiting rescue, how to use clothing you may be wearing to help you remain afloat, and how to conserve your body heat can help you to survive.

Helping someone who is having trouble in the water begins with recognizing a distressed swimmer or a drowning victim. You can help a person from

the water with a reaching, throwing, wading, or walking assist. Always stay safe when helping a distressed swimmer or drowning victim. Once the person is out of the water, additional emergency care may be needed. If there is a chance the person has a head, neck, or back injury, use special methods to protect the head, neck, or back from further injury. Also, special methods are used for a person who is having a seizure in the water.

Knowing how to perform the techniques described in this chapter may help save a life.

LEARNING ACTIVITIES

TRUE OR FALSE

Circle the correct answer.

1. Screaming or calling for help is the first sign that someone is drowning. True or False?
2. The safest way to help a person in the water is to go in after him or her. True or False?
3. With a head, neck, or back injury, your major concerns are to help the person breathe, and prevent the head, neck, or back from moving. True or False?
4. Heavy winter clothes should be removed as quickly as possible if you fall into cold water. True or False?
5. Moving around in cold water will help you to keep warm. True or False?

MULTIPLE CHOICE

Circle the letter of the best answer or answers.

1. Which of the following *does not* characterize an *active drowning* victim?
 - a. Arms waving in the air while calling for help
 - b. Vertical in the water
 - c. Struggles to breathe
 - d. Unable to swim
 - e. Arms to the sides, alternately moving up and pressing down.
2. After a victim has been pulled from the water—
 - a. Give comfort and reassurance.
 - b. Check for consciousness and breathing.
 - c. Care for hypothermia if the victim is cold.
 - d. Check for bleeding and broken bones.
 - e. All of the above.
3. If an unconscious person is too heavy for you to carry out of shallow water along the shore, use—
 - a. A walking assist.
 - b. A wading assist.
 - c. A beach drag.
 - d. A hip and shoulder support.
 - e. A two-person carry.
4. If you fall into warm water while clothed and not wearing a life jacket—
 - a. Remove your outer clothing and tread water.
 - b. Remove your outer clothing and swim to shore or a dock.
 - c. Try to trap air in your clothing and swim or float.
 - d. Remove your shoes and swim or float.
 - e. None of the above.
5. Prevent hypothermia by—
 - a. Treading water to stay warm.
 - b. Wearing an approved life jacket when boating on cold water.
 - c. Wearing layers of insulated clothes that keep you warm even when wet.
 - d. Using caution and wearing a hat when boating on cold water.
 - e. Survival floating.

FILL IN

Fill in the correct answers.

1. To rescue a person without entering the water, if possible use a _____ assist. If that does not work, try a _____ assist.
2. Why are seizures a special concern in or around water? _____

3. List at least three situations in which a head, neck, or back injury is possible: _____

4. To stabilize a person in the water who has a suspected head, neck, or back injury, use the _____
_____ for a faceup victim and the _____
_____ for a facedown victim.
5. Describe the two positions for floating in cold water while wearing a life jacket:
HELP (Heat Escape Lessening Posture): _____

Huddle position: _____

SCENARIOS

1. A friend, whom you know is a poor swimmer, trips on a walkway along a canal and falls into deep water. Panicking, he begins to struggle toward the wall.

- a. What should you do first?
1. Immediately jump in after him.
 2. Take off your shoes and any heavy clothes, and jump in after him.
 3. Tell him you'll go for help, and quickly seek assistance.
 4. Look for something to reach to him with.
 5. Throw your shirt or jacket to him, and tell him to inflate it.

b. Name at least two possible objects you could reach to him: _____

c. List the steps for a reaching assist:

1. _____
2. _____
3. _____

d. If he is too far from the side to reach, what should you do? _____

e. List at least two possible objects you could throw to him: _____

f. Describe the six steps you would follow for a throwing assist:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

2. A child playing in the shallow end at the camp's waterfront appears to be having a seizure.

a. What should you do? _____

b. After entering the water, what should you do to keep the child from drowning?

c. After the seizure is over, what should you do?



Courtesy of GSUSA photo library

Canoeing Safety

OBJECTIVES

After reading this chapter you should be able to—

1. Identify the parts of a canoe.
2. List the most common causes of canoe accidents, injuries, and fatalities.
3. Explain how to prevent canoe accidents, injuries, and fatalities.
4. Identify and explain the guidelines for safe canoeing.
5. Identify and explain the two rescue priorities of a canoeing emergency.
6. Explain what to do if you fall overboard, capsize, or swamp your canoe in flat water.
7. Explain how to assist others in flat water.
8. Define the key term for this chapter.

After reading this chapter and completing the appropriate course activities, you should be able to—

1. Demonstrate how to reenter your canoe if you fall overboard into flat water.
2. Demonstrate how to rescue yourself if your canoe swamps or capsizes.
3. Demonstrate a towing assist on flat water.
4. Demonstrate a canoe-over-canoe rescue.

KEY TERM

Flat water: Lake water or river current where no rapids exist and eddies are slight.

INTRODUCTION

Canoeing is a popular activity in the United States. Many people enjoy canoeing as a recreational activity, while others canoe for competition and sport. With a growing number of people in canoes on our waterways, there is an increased need for canoeing safety and education. This chapter discusses the basics of canoeing safety, and what to do if a problem occurs on the water.

THE CANOE

Canoes are made of wood, aluminum, plastic, fiberglass, Kevlar, and other synthetic and natural materials. Despite the variety of canoe types (Fig. 4-1), they have certain common characteristics. You should know some basic terms to understand canoes and canoeing safety.

Bow—The front of a craft.

Gunwale—The top edge of the sides of a craft.

Hull—The main body of a craft.

Painter —A line attached to the bow and/or stern of a craft.

Stern—The back of a craft.

Thwarts (stern, center, and bow)—Support braces in a canoe that go from gunwale to gunwale.

Learning Activity

Using the above terms, complete the following canoe illustration (Fig. 4-2).



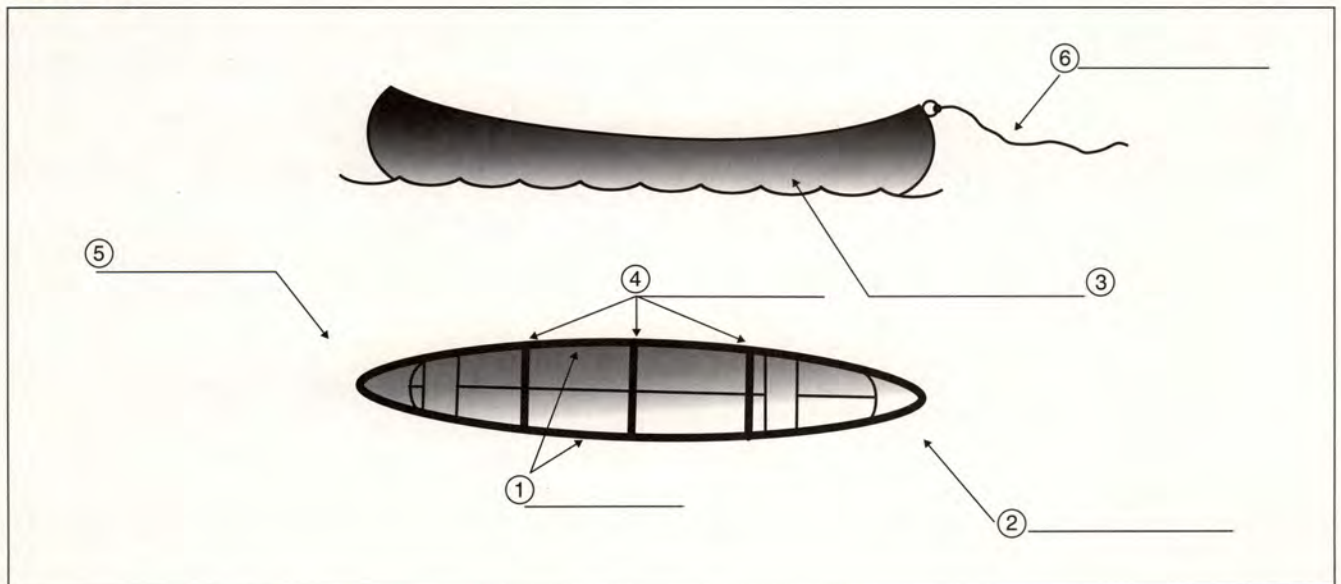
Figure 4-1

CANOEING SAFETY

To understand canoeing safety and prevent canoeing accidents, injuries, and fatalities, you must understand the causes. According to the American Canoe Association, most accidents occur on calm rivers and lakes—not on white water. Approximately half of the canoeing fatalities would not have occurred if the victim had been wearing a life jacket. The effects of alcohol and cold water are also major factors in canoeing accidents and fatalities.¹

¹C. Walbridge, *River Safety Anthology*, American Canoe Association.

Figure 4-2



Common canoeing injuries include ankle sprains from walking in or around the water, shoulder injuries from paddling, and back injuries from heavy lifting.²

Preventing Canoe Capsizes, Falls Overboard, and Collisions

Capsizes, falls overboard, and collisions are the most common types of canoeing accidents.³ Most accidents can be prevented by following a few safety guidelines:

- Keep your weight low by paddling in the kneeling position. Passengers should sit on the bottom of the canoe.
- When entering, exiting, or moving around in a canoe, have two hands and one foot, or one hand and two feet in contact with the craft.
- Do not sit on the gunwale.
- Watch out for submerged objects, potential hazards, and other boats.

Guidelines for Safe Canoeing

Understanding the primary causes of canoeing accidents, injuries, and fatalities is the first step to preventing them. The following are important guidelines to provide for your safety and the safety of others while canoeing.

- Canoe in groups. The American Canoe Association recommends there be a minimum of three craft when paddling.
- Have the proper training and experience before supervising others canoeing. This may include training in first aid, CPR, and water safety through your local Red Cross, and training in canoeing through the American Canoe Association, your local Red Cross, and other organizations.
- Make sure everyone on board is wearing a U.S. Coast Guard-approved life jacket.
- Have and use the appropriate clothing, equipment, and gear.
- Check the weather and water conditions before and while canoeing.
- Communicate your expectations, rules, and safety procedures to everyone in the group.
- Be prepared for emergencies, and practice emergency procedures regularly.
- Properly outfit the canoe. Attach lines for passengers to hold on to and, if needed, install flotation material to keep the craft afloat if the canoe capsizes or swamps.

- Securely fasten all gear, equipment, and lines to prevent entanglement if the canoe capsizes.
- Do not compromise your safety or the safety of others on the water. Canoe only on waters that are within your ability and within the abilities of others in your group.

SUPERVISION AND COMMUNICATION

Paddlers in the same or different canoes must be able to communicate. In addition to using whistle and hand signals set up in advance, the American Whitewater Affiliation (AWA) has a standardized set of signals to indicate an emergency, get another paddler's attention, and to indicate direction of travel (see Chapter 8, pages 70-71).

Communication between the stern paddler and bow paddler is essential when paddling **tandem**. Clearly communicating basic directions, such as "Forward now!" or "Ready!", can mean the difference between a safe transition through water and an unfortunate mishap.

A canoe trip leader or assistant should make sure that the canoes stay a safe distance apart.

- Each canoe should be within shouting distance of at least one other craft.
- Each canoe should not lose sight of the canoe in front or behind it.
- No canoe should pass the lead canoe or fall behind the sweep canoe.

CANOEING EMERGENCIES

Rescue Priorities

Whenever you are on the water, you should know how to rescue yourself and how to rescue others in an emergency. If a canoeing emergency occurs, follow these rescue priorities:

1. Rescue people first. Your main concern is the health and safety of everyone in your group.
2. After everyone involved has been brought to safety, consider retrieving the craft and gear only if it will not put you or others in danger.

Canoeing Emergencies in Flat Water

Self-Rescue in Flat Water

If you fall overboard in *flat water*, stay with your canoe. Most canoes float and can be used for support. Climbing inside or on top of the canoe will keep you warmer and make you more visible to rescuers.

²E. Weiss, *Wilderness Medicine*, Mosby-Year Book.

³*Boating Statistics 1995* (U.S. Dept. of Transportation, U.S. Coast Guard), September 1995.

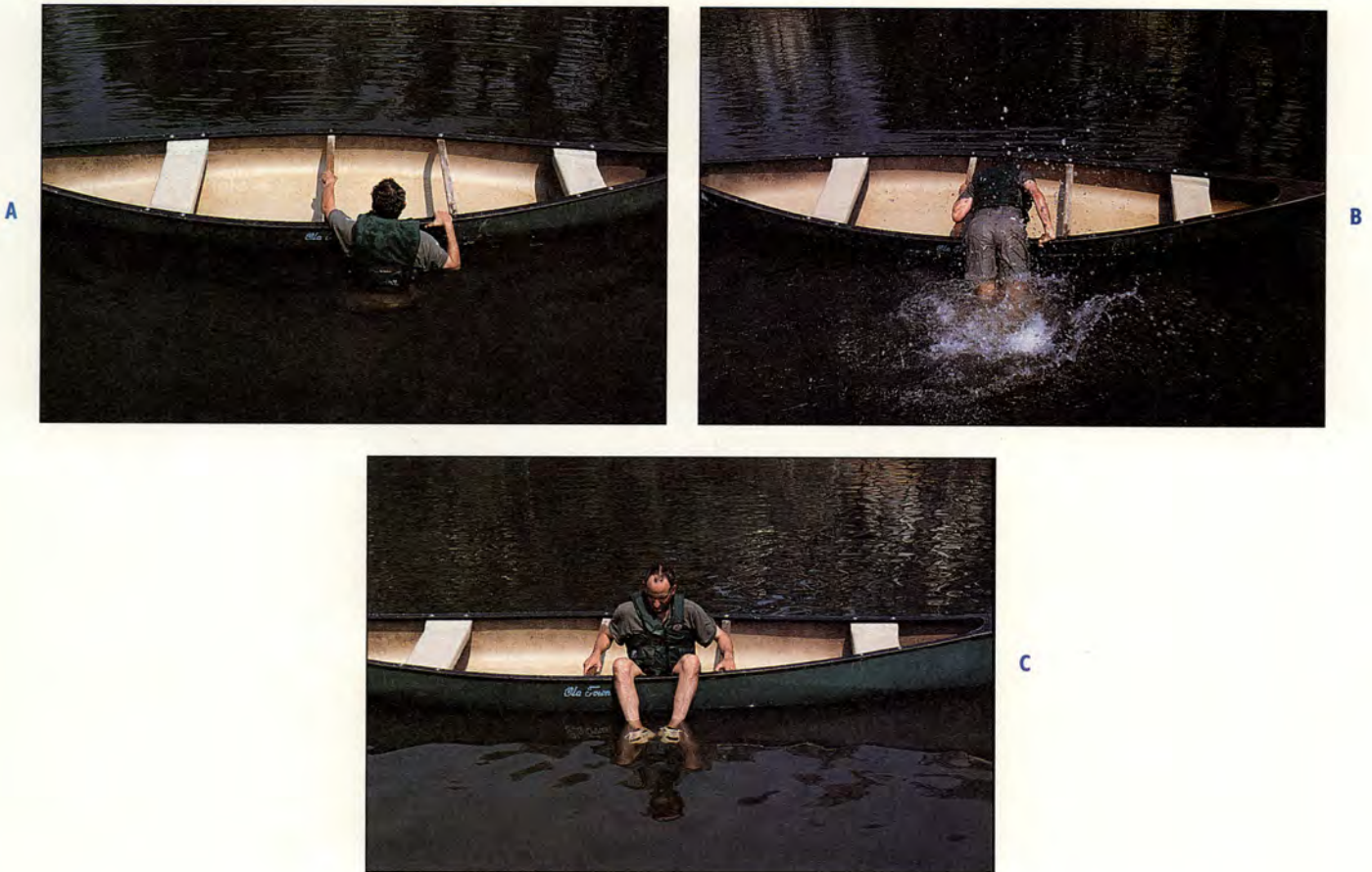


Figure 4-3, A, B and C

Falling Overboard in Flat Water

If you fall overboard:

1. From the side of the canoe, hold on to the gunwale with one hand and a thwart with the other hand (Fig. 4-3, A).
2. Keeping your weight on the gunwale and thwart, kick vigorously to raise your hips to the gunwale (Fig. 4-3, B).
3. Rotate your hips to sit inside the canoe (Fig. 4-3, C), then bring your legs into the craft.
4. If you have a partner, carefully maintain your balance and steady the craft while he or she enters the canoe using the same steps.

Swamped Canoe in Flat Water

If your canoe is swamped but still upright—

1. Turn your canoe toward shore. This will make it easier for you to hand paddle to shore.
2. Lie across the middle of the canoe to keep it from rolling over sideways (Fig. 4-4, A).
3. When the canoe is stable, rotate your body into the canoe (Fig. 4-4, B).
4. Move into a sitting position on the bottom of the craft and hand paddle to safety (Fig. 4-4, C).

5. If you have a partner, carefully steady the craft while he or she enters the canoe using the same steps listed above, then hand paddle to safety.
6. After reaching shallow water empty the water from your canoe.

1. One paddler stands at the bow while the other paddler stands at the stern (Fig. 4-5, A).
2. Both paddlers turn the swamped canoe sideways in the water (Fig. 4-5, B).
3. Lift the canoe sideways out of the water, and empty the canoe (Fig. 4-5, C).
4. Turn the canoe right-side up, and set it down on the water or carry it ashore.

Assisting Others in Flat Water

Towing Assist

If a canoe has capsized and is close to shore, you can tow the person and their swamped craft to shore. Present the stern of your canoe so that the paddler can hold the painter or the back of your craft (Fig. 4-6). Slowly paddle the person to safety.

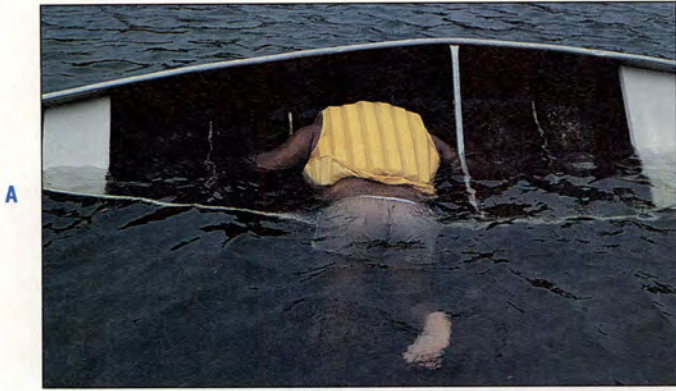


Figure 4-4, A, B and C

Figure 4-5, A, B and C





Figure 4-6



A



B



C



D

Figure 4-7, A, B, C and D

Canoe-over-Canoe Rescue

The canoe-over-canoe rescue is used to empty water from a swamped canoe some distance from shore. During the assist, the capsized paddlers can hold on to each end of your canoe to stabilize it, or one of the capsized paddlers can aid in the assist.

1. The person at the bow of the rescue canoe turns to face the stern.
2. Roll the swamped canoe over so the bottom is up and position it perpendicular to your craft.
3. Lift one end of the upside-down canoe onto the gunwale, near the middle of your canoe (Fig. 4-7, A).

At the same time, one of the paddlers in the water pushes down on the end of the canoe that is in the water.

4. Carefully slide the upside-down canoe across the gunwales of your craft (Fig. 4-7, B).
5. Roll the canoe upright while still across the gunwales (Fig. 4-7, C).
6. Slide the canoe back into the water (Fig. 4-7, D). The paddlers can then reenter their canoe while you hold the two canoes side by side for stability.

SUMMARY

Safe canoeing involves understanding the common causes of canoeing accidents, injuries, and fatalities, and knowing how to prevent them. Paddlers also need to know how to communicate with each other when canoeing. Group leaders and individual paddlers

must be prepared to act if problems occur while canoeing. This includes knowing the specific techniques for self-rescue and assisting others, and being able to act immediately when a problem begins to develop.

LEARNING ACTIVITIES**TRUE OR FALSE**

1. Sitting on the gunwale of the canoe can help prevent capsizing. True or False?
2. Canoe only on waters that are within your ability and beyond the abilities of others in your group. True or False?
3. The simple practice of wearing life jackets could prevent half of all canoeing fatalities. True or False?

MULTIPLE CHOICE

Circle the letter of the best answer or answers.

1. Key strategies for preventing canoeing fatalities include—
 - a. Not drinking alcohol while canoeing.
 - b. Knowing how to swim.
 - c. Wearing a life jacket.
 - d. All of the above.
2. Most accidents in canoes occur—
 - a. On the ocean.
 - b. During storms.
 - c. On calm rivers and lakes.
 - d. On moving water.
3. When canoeing with other craft, you can help keep the trip safe and enjoyable by—
 - a. Staying within sight of the craft immediately in front of and/or behind you.
 - b. Staying within shouting distance of at least one other craft.
 - c. Staying behind the sweep craft and in front of the lead craft.
 - d. Leaving enough space between each craft to avoid collisions.
 - e. Leaving a copy of your incident report with the Coast Guard or other authorities.

FILL IN

Fill in the correct answers.

1. The gunwale-to-gunwale braces in a canoe are called _____.
2. List at least two ways to prevent capsizes, falls overboard, and collisions: _____

3. List the rescue priorities if a canoeing emergency occurs.
 1. _____
 2. _____
4. When attempting a canoe-over-canoe rescue in flat water, why should the capsized paddlers hold onto each end of your craft? _____

SCENARIOS

1. You are paddling tandem in a canoe across a calm lake to a favorite picnic spot. Without thinking, you stand up to adjust your life jacket. Suddenly you lose your balance, and both you and your canoeing partner fall overboard.

a. Do you try to get back into the canoe? _____

b. What caused you to fall out of the canoe?

c. Was this accident preventable?

d. Give the four steps to reentering the canoe:

1. _____

2. _____

3. _____

4. _____

2. You are paddling across a wide lake with a camp group when one of the canoes capsizes and swamps. After you rescue the canoeists, what are the five steps you take to empty the water from the capsized canoe? You are too far from shore to tow the canoe.

1. _____

2. _____

3. _____

4. _____

5. _____
