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# MERIT BADGE SERIES



# EMERGENCY PREPAREDNESS



BOY SCOUTS OF AMERICA

## MERIT BADGE LIBRARY

Though intended as an aid to Boy Scouts, Varsity Scouts, and qualified Venturers and Sea Scouts in meeting merit badge requirements, these pamphlets are of general interest and are made available by many schools and public libraries. The latest revision date of each pamphlet might not correspond with the copyright date shown below, because this list is corrected only once a year, in January. Any number of merit badge pamphlets may be revised throughout the year; others are simply reprinted until a revision becomes necessary.

If a Scout has already started working on a merit badge when a new edition for that pamphlet is introduced, *he may continue to use the same merit badge pamphlet to earn the badge and fulfill the requirements therein.* In other words, the Scout need not start over again with the new pamphlet and possibly revised requirements.

Merit Badge Pamphlet	Year	Merit Badge Pamphlet	Year	Merit Badge Pamphlet	Year
American Business	2002	Entrepreneurship	2006	Photography	2005
American Cultures	2005	Environmental Science	2006	Pioneering	2006
American Heritage	2005	Family Life	2005	Plant Science	2005
American Labor	2006	Farm Mechanics	2008	Plumbing	2004
Animal Science	2006	Fingerprinting	2003	Pottery	2008
Archaeology	2006	Fire Safety	2004	Public Health	2005
Archery	2004	First Aid	2007	Public Speaking	2002
Architecture and Landscape Architecture	2010	Fish and Wildlife Management	2004	Pulp and Paper	2006
Art	2006	Fishing	2009	Radio	2008
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Emergency Preparedness	2008	Personal Fitness	2006	Wood Carving	2006
Energy	2005	Personal Management	2003	Woodwork	2003
Engineering	2008	Pets	2003		

## HOW TO USE THIS PAMPHLET

The secret to successfully earning a merit badge is for you to use both the pamphlet and the suggestions of your counselor.

Your counselor can be as important to you as a coach is to an athlete. Use all of the resources your counselor can make available to you. This may be the best chance you will have to learn about this particular subject. Make it count.

If you or your counselor feels that any information in this pamphlet is incorrect, please let us know. Please state your source of information.

Merit badge pamphlets are reprinted annually and requirements updated regularly. Your suggestions for improvement are welcome.

Send comments along with a brief statement about yourself to Youth Development, S209 • Boy Scouts of America • 1325 West Walnut Hill Lane • P.O. Box 152079 • Irving, TX 75015-2079.

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BOY SCOUTS OF AMERICA  
MERIT BADGE SERIES

EMERGENCY  
PREPAREDNESS



The Boy Scouts of America is indebted to the American Red Cross for its subject matter expertise, review, and other assistance with this edition of the *Emergency Preparedness* merit badge pamphlet.



**American  
Red Cross**



BOY SCOUTS OF AMERICA®

## Note to the Counselor

The Boy Scouts of America believes that its youth members need adult contacts to help them develop character, citizenship, and fitness. As a merit badge counselor, you have subscribed to these aims of Scouting.

The *Guide to Safe Scouting*, No. 34416, is updated every year and is available from your local council Scout shop. It is also accessible online at the official BSA website: <http://www.scouting.org>. As an Emergency Preparedness merit badge counselor, this booklet may be particularly helpful to you. You should always review this document before any Scouting activities, including field trips and trips into the community.

Some BSA local councils have both risk management and health and safety committees; or these committees may be combined. In the BSA, risk management is an administrative function (prevention, funding); health and safety is a program function (assuring implementation of safe programs). These committees may be helpful as you plan Scouting activities in your area. The protection of our youth members is as vital as development of their career and hobby interests, which is the merit badge program's basic function. Your active participation in and support of this goal is appreciated.

## Acknowledgments

The Boy Scouts of America gives special thanks to members of the BSA Health and Safety Committee, in particular David Bell, Ph.D.; Rick Mason; Arthur Mittelstaedt Jr., Ed.D.; and Sven Rundman, for their assistance. We also thank the following subject matter experts from the Office of Health Affairs, U.S. Department of Homeland Security, for their contributions to this pamphlet: Scouter Darrell Donahue, Ph.D., American Association for the Advancement of Science Fellow; Assistant Secretary and Chief Medical Officer Jeffrey Runge, M.D.; Donald Noah, DVM, MPH, special advisor; and Tom McGinn, DVM, chief veterinarian.

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**Thanks also to Scott Meyer, Disaster Services, Mass Care.**



The following emergency preparedness resources from the American Red Cross may be of particular interest to Scouts, Scout leaders, and merit badge counselors.

**Masters of Disaster™ Educator's Kit,**  
No. A1140EDU.

**Masters of Disaster™ Family Kit,**  
No. A1140FAM.



### Organizations and Websites

#### American Red Cross

Toll-free telephone: 800-733-2767  
Website: <http://www.redcross.org>

#### American Veterinary Medical Association

Website: [http://avma.org/disaster/saving\\_family.asp](http://avma.org/disaster/saving_family.asp)

#### Citizen Corps/Community Emergency Response Teams

Website:  
<http://www.citizen corps.gov/cert>

#### Environmental Protection Agency

Telephone: 202-260-2090  
Toll-free telephone for literature requests only: 800-490-9198  
Website: <http://www.epa.gov>

#### Federal Emergency Management Agency

Telephone: 202-566-1600  
Toll-free telephone for literature requests only: 800-480-2520  
Website: <http://www.fema.gov>

#### National Oceanic and Atmospheric Administration

Telephone: 202-482-6090  
Website: <http://www.noaa.gov>

#### Radio Amateur Civil Emergency Service

Website: <http://www.usraces.org>

#### Ready.gov

Telephone: 202-282-8000 or  
202-447-3543 TTY  
Website: <http://www.ready.gov>

#### U.S. Department of Homeland Security

Telephone: 202-282-8000  
Website: [www.dhs.gov](http://www.dhs.gov)

#### U.S. Department of Transportation

NHTSA Office of Emergency Medical Services  
Telephone: 202-366-5440  
Website: [www.dot.gov](http://www.dot.gov)

#### U.S. Geological Survey

Toll-free telephone: 888-275-8747  
Website: <http://www.usgs.gov>

## Requirements

1. Earn the First Aid merit badge.
2. Do the following:
  - a. Discuss with your counselor the aspects of emergency preparedness:
    - (1) **Prepare** for emergency situations.
    - (2) **Respond** to emergency situations.
    - (3) **Recover** from emergency situations.
    - (4) **Mitigate and prevent** emergency situations.

Include in your discussion the kinds of questions that are important to ask yourself as you consider each of these.



b. Make a chart that demonstrates your understanding of each of the aspects of emergency preparedness in requirement 2a (prepare, respond, recover, mitigate) with regard to 10 of the situations listed below. **You must use situations 1, 2, 3, 4, and 5 below in boldface**, but you may choose any other five listed here for a total of 10 situations. Discuss this chart with your counselor.

- (1) Home kitchen fire**
- (2) Home basement/storage room/garage fire**
- (3) Explosion in the home**
- (4) Automobile crash**
- (5) Food-borne disease (food poisoning)**
- (6) Fire or explosion in a public place
- (7) Vehicle stalled in the desert
- (8) Vehicle trapped in a blizzard
- (9) Flash flooding in town or in the country
- (10) Mountain/backcountry accident
- (11) Boating or water accident
- (12) Gas leak in a home or a building
- (13) Tornado or hurricane
- (14) Major flood
- (15) Nuclear power plant emergency
- (16) Avalanche (snowslide or rockslide)
- (17) Violence in a public place

## Emergency Preparedness Resources

### Scouting Literature

*Boy Scout Journal; Backpacking, Camping, Canoeing, Cooking, Cycling, Electricity, Fire Safety, First Aid, Hiking, Home Repairs, Lifesaving, Motorboating, Nature, Orienteering, Pioneering, Public Health, Radio, Rowing, Safety, Small-Boat Sailing, Snow Sports, Swimming, Traffic Safety, Weather, and Wilderness Survival* merit badge pamphlets

**For more information about Scouting-related resources, visit the BSA's official online retail catalog (with your parent's permission) at <http://www.scoutstuff.org>.**

### Books

American Red Cross. *American Red Cross Water Safety Handbook*. StayWell, 2004.

———. *First Aid/CPR/AED for Schools and Communities* (participant's manual). Staywell, 2006.

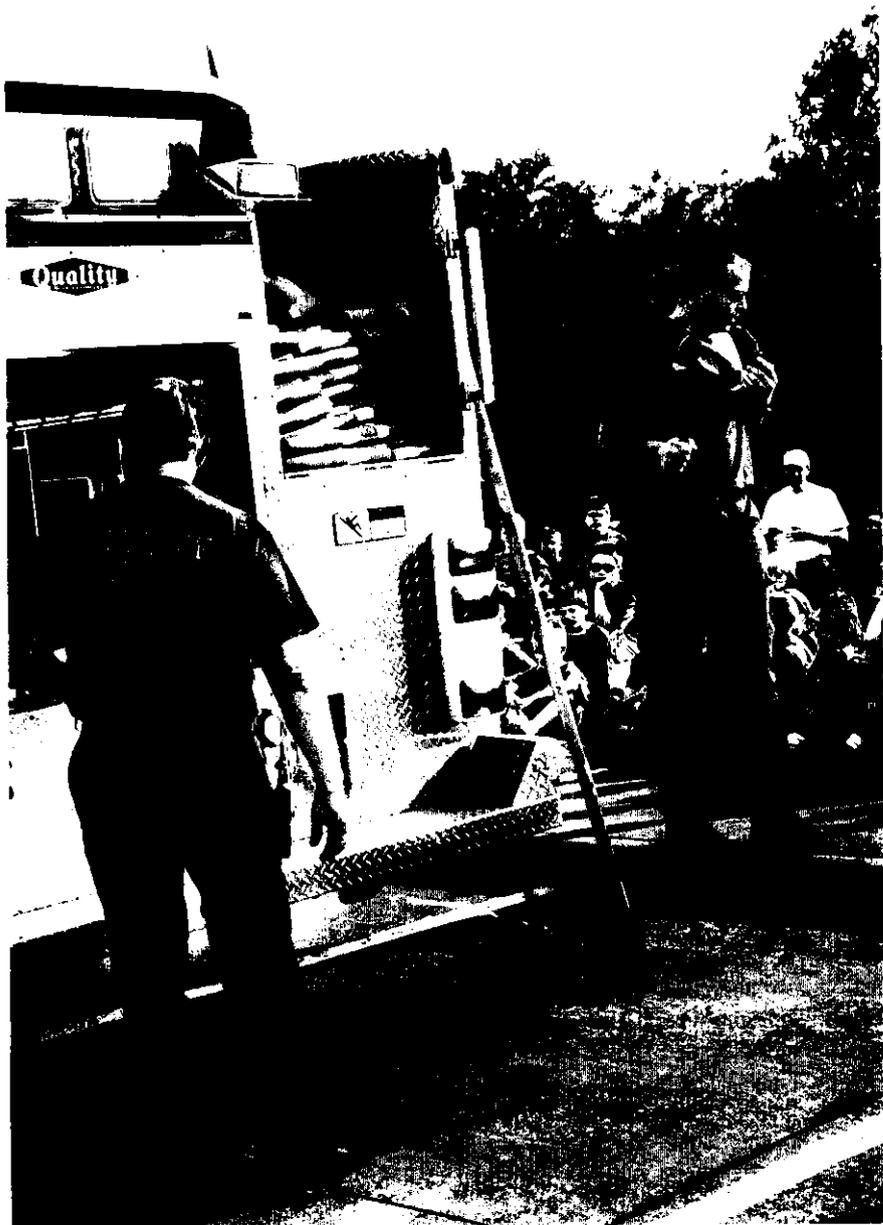
———. *Responding to Emergencies* (participant's manual). Staywell, 2007.

Forgey, William W. *Basic Essentials: Wilderness First Aid*, 3rd ed. Falcon Guides, 2007.

Kelly, Kate. *Living Safe in an Unsafe World: The Complete Guide to Family Preparedness*. New American Library Trade, 2000.

Meyer-Crissey, Pamela, and Brian L. Crissey, Ph.D. *Common Sense in Uncommon Times*. Granite Publishing, 2002.

U.S. Department of Transportation, National Highway Traffic Safety Administration. *First There First Care: Bystander Care for the Injured*. DOT HS 809 853, 2005.



- c. Meet with and teach your family how to get or build a kit, make a plan, and be informed for the situations on the chart you created for requirement 2b. Complete a family plan. Then meet with your counselor and report on your family meeting, discuss their responses, and share your family plan.
3. Show how you could safely save a person from the following:
  - a. Touching a live household electric wire
  - b. A room filled with carbon monoxide
  - c. Clothes on fire
  - d. Drowning, using nonswimming rescues (including accidents on ice)
4. Show three ways of attracting and communicating with rescue planes/aircraft.
5. With another person, show a good way to transport an injured person out of a remote and/or rugged area, conserving the energy of rescuers while ensuring the well-being and protection of the injured person.

6. Do the following:
  - a. Tell the things a group of Scouts should be prepared to do, the training they need, and the safety precautions they should take for the following emergency services:
    - (1) Crowd and traffic control
    - (2) Messenger service and communication
    - (3) Collection and distribution services
    - (4) Group feeding, shelter, and sanitation
  - b. Identify the government or community agencies that normally handle and prepare for the emergency services listed under 6a, and explain to your counselor how a group of Scouts could volunteer to help in the event of these types of emergencies.
  - c. Find out who is your community's emergency management director and learn what this person does to **prepare, respond to, recover from, and mitigate and prevent** emergency situations in your community. Discuss this information with your counselor, and apply what you discover to the chart you created for requirement 2b.
7. Take part in an emergency service project, either a real one or a practice drill, with a Scouting unit or a community agency.
8. Do the following:
  - a. Prepare a written plan for mobilizing your troop when needed to do emergency service. If there is already a plan, explain it. Tell your part in making it work.
  - b. Take part in at least one troop mobilization. Before the exercise, describe your part to your counselor. Afterward, conduct an "after-action" lesson, discussing what you learned during the exercise that required changes or adjustments to the plan.

### Messenger Service Project

Operating a messenger service is one way Scouts can give meaningful service during an emergency and help free community officials so that they can utilize their specialized skills. This project will test your troop's ability to organize and work as a team.

At a convenient time (a weekday evening, perhaps, or a Saturday afternoon), call an emergency mobilization of the troop. When all patrols are at the unit meeting place, give each patrol leader a list of 10 to 15 prominent places in the community, such as police and fire stations, drugstores, service stations, and places of business or government. (Use a different list of contacts for each patrol so that busy people are not disturbed repeatedly to sign messages.) Give each patrol leader enough copies of this suggested note to cover the list.

If you hold this mobilization in the evening, you could end it with a special campfire program.

Greetings:

The Boy Scouts of Troop [your troop number] are being tested for their effectiveness as messengers in the event of a community disaster. Please write or stamp on this note the exact time of delivery and sign it so that the Scout may show me the effectiveness of his effort.

Thank you.

[signature]  
Scoutmaster

### Other Projects

With the help of your Scoutmaster and other troop leaders, you can follow the same approach as for the preceding projects to alert your troop leaders to select, plan for, and participate in an emergency service project. Other action projects that will help you and your troop sharpen emergency skills might include conducting a simulated, or mock, bicycle or car accident, or setting up an emergency camp from scratch (with sanitation, cooking, and dishwashing facilities for a large number of people). Or you might simulate a building accident or fire, with "victims" role-playing such emergencies as touching a live electrical wire, having their clothes on fire, or experiencing stopped breathing.

### Lost-Child Project

Scouts often are called on to help find people who are lost, and they need to know how to do it. You can help train your troop with a lost-child project.

Usually, Scouts are called together through a troop mobilization plan. The plan is organized with the patrol leader to set it into action. Be sure to announce the equipment needed for the activity, either before or at the time of the mobilization call.

For the project, make one or more "lost child" dummies from burlap sacks stuffed with straw or hay. Put a shirt on the lost child so that searchers will recognize it. Before the mobilization call, place the dummy somewhere in the search territory. Position it in an area that will prove challenging and interesting to searchers. To test the searchers' powers of observation, plant some barely noticeable "evidence" (such as clothing or footprints) of the lost child.

After Scouts have been assembled by the mobilization call, organize them into search parties and use the lost-person search method. Be sure patrols have practiced. Mark the search area on maps that are distributed to the Scouts. Agree on recall signals so the search does not continue after the lost child has been found.

The search will be more dramatic and realistic if your troop can arrange for a rescue squad, military unit, or police department to work with you.

Have Scouts look for the prepared evidence of the lost child. Once found, the lost child should be properly treated for any injuries and transported safely to the starting point.



**The American Red Cross is a humanitarian organization associated with the International Red Cross Movement, which provides relief to victims of disasters and helps people prepare for, respond to, recover from, and prevent emergencies. You or your Scoutmaster might contact your local Red Cross chapter to find out how you might get involved in emergency service projects.**

- c. Prepare a personal emergency service pack for a mobilization call. Prepare a family emergency kit (suitcase or waterproof box) for use by your family in case an emergency evacuation is needed. Explain the needs and uses of the contents.
9. Do ONE of the following:
    - a. Using a safety checklist approved by your counselor, inspect your home for potential hazards. Explain the hazards you find and how they can be corrected.
    - b. Review or develop a plan of escape for your family in case of fire in your home.
    - c. Develop an accident prevention program for five family activities outside the home (such as taking a picnic or seeing a movie) that includes an analysis of possible hazards, a proposed plan to correct those hazards, and the reasons for the corrections you propose.





If your troop has never set up a mobilization plan, discuss it with your Scoutmaster. Every community needs one. Any emergency plan for community service should be worked out by your Scoutmaster with the director of the local office of emergency management or with a disaster/emergency response coordinator in your area. If your community does not have an emergency management or civil defense office, your Scoutmaster should check with the local American Red Cross chapter or the police or fire department. These officials can advise how your troop can help in an emergency.



### Getting Involved: Emergency Service Projects

To meet the emergency service project requirement for the Emergency Preparedness merit badge, you must take an active role. Merely being at an emergency is not enough. The part you play must be one that you have been trained for (or trained yourself for). You may participate in an emergency service project during a real emergency, but normally you will have to perform a practice drill with your troop or a local community service organization.



You can help your troop plan and conduct an activity that involves an emergency service project. A practice mobilization may be a part of the project but will not qualify as your emergency service project. Your Scoutmaster and troop might consider one of the following activities.

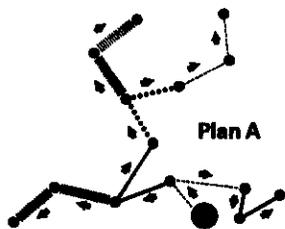
## Emergency Mobilization Plans and Preparation

Is your troop prepared with a mobilization plan if your community asks you to help during an emergency? In any disaster, your first responsibility is to your family and home. But if a tornado has hit a neighboring town, or a nearby community is threatened with a flood or other emergency situation, your troop might be called upon to help.

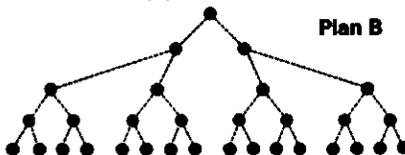
You will be asked to be at a specific place at a specific time. If the telephones are working, use mobilization plan B; if phone lines are down, your troop must use mobilization plan A. Your troop should be prepared to use both plans.

### Mobilization Plans

Use plan A when normal communications systems are unavailable. This plan involves planning and making contacts on the basis of proximity, or nearness. Leaders and Scouts make personal contact with troop members living near them. A Scoutmaster may first learn of the need for the troop's services when a police car or other emergency vehicle drives to the Scoutmaster's home with an authorized and approved request for the troop's services. Under this plan, the Scoutmaster goes to the home of a member in one direction from the Scoutmaster's home, and then to the home of a member in another direction. In a similar manner, each Scout personally contacts two members of the troop. This process continues until all have been notified of the mobilization call and the group is en route to the assembly point.



Use plan B when normal phone communications are available. Troops mobilize by patrols. Members are contacted by phone. To begin the mobilization, the Scoutmaster calls the assistant Scoutmaster and the senior patrol leader. They each phone two patrol leaders. Each patrol leader phones two patrol members. This procedure continues through the entire troop roster. The word is passed from person to person. If a member cannot be reached, contact must be assumed by the caller.



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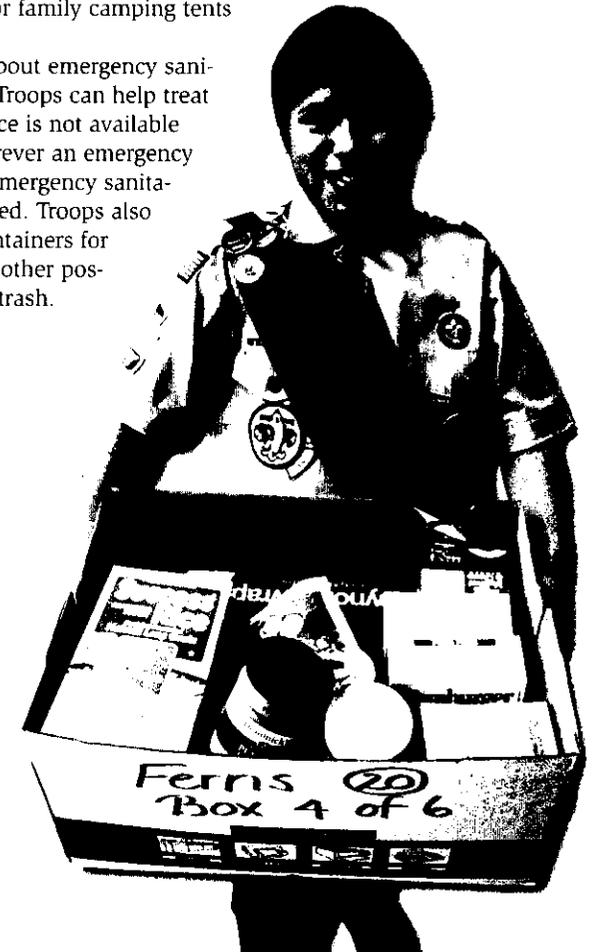


### Mass Feeding, Shelter, and Sanitation

The San Francisco Bay Area Council once recruited Scout troops to help the Red Cross feed 250 people during an emergency. Before the Red Cross could move in its "big" equipment, the Scouts arrived. Within three hours of the first mobilization signal, each Scout patrol had enough water boiling in improvised 5-gallon-can cookpots to make and serve hot soup and coffee.

If your troop is prepared with cooking cans (four per patrol), grates and grills, trench shovels, axes, Scout staves, firestarters, twine or rope (to mark off serving areas), and a fuel supply (such as charcoal), you will be prepared for emergency mass feeding. Always coordinate activities with the Red Cross or local authorities. Under the direction of the officials in charge, Scouts could properly set up tents in designated areas. Troop tents or family camping tents can be used.

Scouts know more about emergency sanitation than most people. Troops can help treat water if clean water service is not available after an emergency. Wherever an emergency shelter has been set up, emergency sanitation often must be provided. Troops also can round up covered containers for garbage or come up with other possibilities for dealing with trash.



### Collection and Distribution Services

During and after some disasters, such as floods and tornadoes, many people may be without food and clothing. People may be homeless for a time. Scout troops working under the direction of their leaders and local officials can help collect needed items and get them to a central distribution point. Usually, officials will set up collection and distribution points at places such as places of worship, fire stations, schools, and other public buildings. Your troop meeting place might be used.

If your troop has developed a master map of your community, you will know where food stores are. This will save time in rounding up supplies. Scouts also can distribute leaflets or instructions for the Red Cross, the local emergency management agency, or other local authorities and volunteer groups.



Many Scouting units already know about and have experience collecting and distributing food through their work in the Scouting for Food National Good Turn.

## Introduction

The Atlantic hurricane season of 2005 produced one of the five deadliest hurricanes in U.S. history. Hurricane Katrina made landfall on August 29, 2005. With peak winds up to 175 mph, the storm caused great devastation along much of the country's Gulf Coast. The loss of life and property was particularly catastrophic in New Orleans, Louisiana, where the city's levee system failed. Floodwaters consumed the area, and nearly 80 percent of the city lay underwater.

The storm's path caused severe damage to the entire Mississippi coast. The damage reached as far as 100 miles from the eye of the storm. Alabama and Florida also suffered flooding, property damage, and loss of lives.



Damage from Hurricane Katrina has been estimated at more than \$80 billion, making it the costliest natural disaster in U.S. history. The cost in human lives: 1,836 fatalities.

## Scouts Make a Difference

After the storm passed, widespread problems occurred due to often tardy and inadequate response by federal, state, and local agencies. Storm victims relied greatly on voluntary agencies and their helpers for assistance. In particular, Boy Scout Troop 566 from Warner Robins, Georgia, responded quickly, efficiently, and heroically.\*

Members of Troop 566 visited the Mississippi Gulf Coast seven times to help rebuild damaged homes. They tore down flood-damaged walls in one home, and then helped another homeowner install new insulation. Some Scouts even mowed lawns for homeowners.



**The bottled water Troop 566 delivered was very important because residents were worried about the safety of the municipal water supply after the flooding.**

After their work in D'Iberville, Scouts from Troop 566 traveled to Waveland, Mississippi, to deliver \$5,000 worth of equipment to the town's fire station. Before making their trip to Waveland, the Scouts spent several weeks preparing a plan of

\*This information came from an article by Tom Nankervis, *The Responder*, an online publication of the United Methodist Church.

Scouts might deliver messages within a control center during emergencies, freeing adults for other work. Troops also can help with communications. If telephones are working, Scouts can act as operators, taking incoming calls and relaying information to officials. If phones do not work, signal teams might be set up, with four Scouts to a team. One Scout acts as team chief and observer, another as the signaler, the third as the recorder, and the fourth as the messenger. Messages are sent by Morse code using signal flags, signal lamps, blinkers, or flashlights or by semaphore or hand signaling.

Some Scouts and leaders specialize in radio communications. Some are qualified as amateur radio operators, Radio Amateur Civil Emergency Service (RACES) operators for emergency situations, or citizens band (CB) operators. CB units can consult and coordinate with local emergency management organizations such as the Red Cross and can serve as a primary means of communication.



**The Radio Amateur Civil Emergency Service (RACES) was founded in 1952 as a public service that provides volunteer communications within government agencies during times of extraordinary need. Each period of RACES activation is different, but the common thread is communications. See the resources section of this pamphlet for more information about RACES.**

Scouts from Troop 566, Warner Robins, Georgia, arrived in the storm-ravaged town of D'Iberville, Mississippi, wearing red shirts and caps emblazoned with the acronym SEMA. The Scouts gave themselves the name SEMA for "Scouting Emergency Management Assistance."

Each member of a crowd-control crew should have access to caution tape. To move a crowd back, crew members can use the caution tape, held at chest height, and advance slowly toward the crowd. To **keep** the crowd back, form a chain with other staff members. To direct the movement of a crowd, indicate direction by pointing or blocking the way.

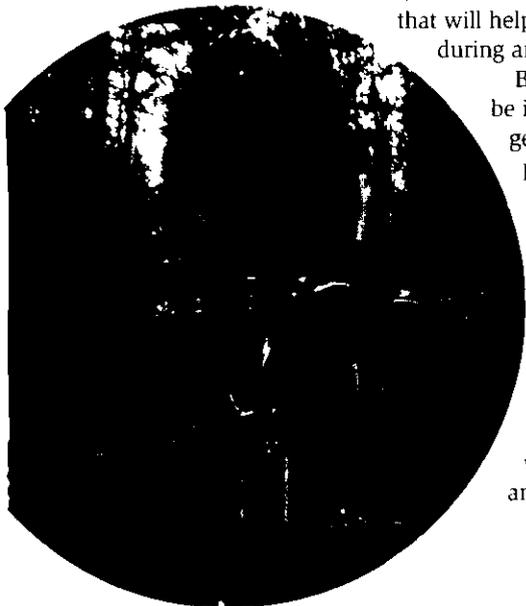
During daylight hours, a fluorescent or reflective vest should be worn. After dark, every member of a crowd-control crew should wear a reflective vest or high-visibility material on the right ankle and arm.

### Messenger Service and Communications

Providing messenger service during an emergency takes planning. Your BSA local council, along with other community organizations, will assign a service area to your troop—usually one that is near your meeting place. Your troop should make a large-scale map of the area and assign sections to each patrol. Each patrol then prepares its own sectional map and learns it inside out. Get to know shortcuts, easiest routes, dead-end streets, traffic blocks, trails, even cow paths—anything that will help you get from one point to another during an emergency.

Bikes can speed up delivery but must be in top condition for a reliable messenger service. Cyclers also must know and practice bicycle safety at all times (see the *Cycling* merit badge pamphlet). In some areas, older Scouts and leaders may deliver messages by car, snowmobile, boat, horse, or skis.

During emergencies, each messenger should carry a flashlight, personal first-aid kit, pencil, paper, map, pocketknife, and money. After delivering a written message, get a written receipt and return it with any answer to the sender.



response. Troop members collected donations from family and friends and loaded up two trailers with much-needed supplies for the storm-damaged area.

The Scouts also provided Waveland residents with tools, furniture, office supplies, and bottled water. Waveland's assistant fire chief called Troop 566's efforts "incredible," but 11-year-old Patrick Nakayama was modest in his response: "We're helping out people, and that's just what Scouts do."

Even though the Scouts from Troop 566 were well-prepared for their trip, many were still shocked by the devastation that greeted them. "When I first came here, it made me cry," said one Scout. "[These residents] just had nothing." Troop member Ben Leon said that the values he learned in Scouting led him to volunteer for the Mississippi relief trip. "You just know you're doing a good thing," he said. "It's just my duty."

### Emergency Preparedness

What is an *emergency*? Usually, it is something unforeseen, unexpected—something that requires immediate action. It can be related to weather, such as a hurricane, a tornado, a snowstorm, or a flood. An emergency can be an accident, such as an explosion, a fire, or a car accident. As a Scout, you should try to learn the actions that can be helpful and needed before an emergency—what *preparedness* is all about—as well as during and after an emergency.





The Scout motto:

Be Prepared.

Nowhere do these words carry more meaning than in emergency preparedness.

And these words, too, from the

Scout Oath: I will do my best . . . to

help other people at all times. And

from the Scout

Law: A Scout is . . . helpful . . . brave.

Scouts are often called on to help because they know first aid and they know about the discipline and planning needed to support a situation that requires leadership. Scouting gives you the opportunity to understand and respond to your community's emergency preparedness plan. As you earn this merit badge, you will learn how to handle many emergency situations as an individual and as a member of a Scouting unit serving your neighborhood and community. Whether you are needed as an active member of a community response team, or whether you gather the skills and information you need to help protect your family or yourself from injury, everything you learn will help you to be *brave and prepared to help other people at all times.*



**The Federal Emergency Management Agency responds to all types of disasters. Some are weather-related emergencies such as hurricanes, tornados, tsunamis, volcanic eruptions, earthquakes, and winter storms. Other emergencies may be caused by humans and may or may not be intentional. Such situations include chemical or hazardous material emergencies, dam failures, nuclear power plant emergencies, and acts of terrorism.**

## Community Emergency Service

For as long as there has been Scouting, Scouts have provided outstanding services in emergencies of all kinds. You can learn about emergency preparedness. You can learn to prevent, prepare for, respond to, mitigate or lessen, and recover from emergency situations. But carrying out emergency service work is the best training of all.

As a Scout, you know about living outdoors, camping, cooking, first aid, and how to make a shelter. With knowledge like this, you and your troop can be prepared for emergency service in your community.

### Lending a Helping Hand

There are many important ways that Scouts can lend their assistance after an emergency. Below are four of the major services Scouts have provided the past. All of these skills take planning and practice.

#### Crowd and Traffic Control

Scout troops in the past have helped police and fire departments and emergency management officials handle crowd and traffic control. Today, it is felt that Scouts should do this only at official Boy Scouts of America functions. In any case, crowd and traffic control *must* be done under the supervision of officials in charge of the situation.





Participating in a practice drill will help you be prepared in case a real emergency happens.

## Prepared for a Good Turn

After the terrorist attacks on the United States on September 11, 2001, thousands of American heroes emerged. Among the police officers, firefighters, and rescue workers who saved lives and worked around the clock during this pivotal moment in American history were other heroes who rallied for their country—Scouts.

The Boy Scouts of America commissioned artist Joseph Cieteri to capture a lasting image of the Scouts who were prepared for—and who responded to—this emergency. The painting, called “Prepared for a Good Turn,” portrays Scouts working to provide relief alongside police officers and firefighters, and illustrates true stories of Scout heroes. Among them, Cub Scouts from Illinois who sent work gloves to the crew members at Ground Zero, and Scouts from New York who donated cots for the relief workers to rest on at the site and collected bottled drinks to help refresh them. The painting also includes Scouts in Oklahoma who started a “Helping Hands for Heroes” campaign to lend a hand to the families of those suddenly called into active military duty.

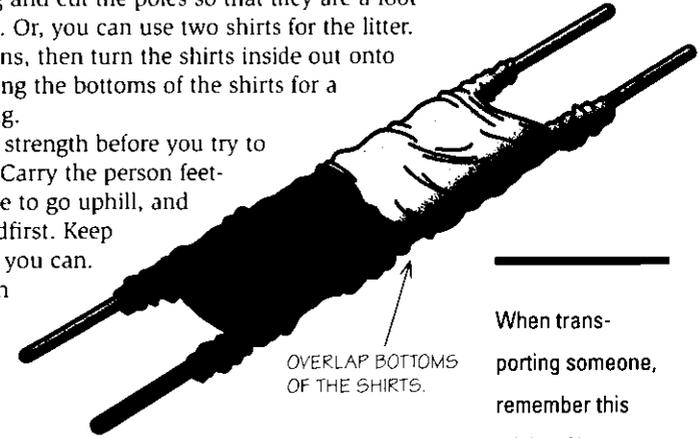




If you must carry an injured person for a long way, make a **litter** or **stretcher**. You will need two strong poles, branches, or small straight trees, and a blanket, tarp, sleeping bag, or two shirts (or jackets). To make a sleeping bag litter, slip the two poles inside the bag and cut the poles so that they are a foot longer than the bag. Or, you can use two shirts for the litter. Button all the buttons, then turn the shirts inside out onto the poles, overlapping the bottoms of the shirts for a more secure bedding.

Test the litter's strength before you try to carry anyone on it. Carry the person feet-first unless you have to go uphill, and then carry him headfirst. Keep the litter as level as you can. If the injured person is conscious and you do not have a way to make a litter, use the four-handed seat.

To make a **blanket stretcher**, place one pole on a blanket. Fold over two-fifths of the blanket. Place the second pole 6 inches from the edge of the folded-over part. Bring the edge of the blanket over the pole. Fold over the remaining part of the blanket. The person's weight will keep the blanket from unwinding.



When transporting someone, remember this advice: Never step on anything you can step over, and never step over anything you can step around.



Blanket stretcher

### Long-Distance Moving

The unexpected can happen anywhere—and sometimes far from help. You may need to transport an injured person for a long distance—and save a life by doing it.

When moving an injured person, no matter what method you are using, make sure you rest enough so that you do not become a second casualty. If just you and a buddy are doing the transporting, stop every 30 to 60 minutes and rest 5 to 10 minutes. How often you stop will depend on how much the victim weighs and how rugged the terrain is.

Two first-aiders can transport a conscious person with the **four-handed seat**. Use this carry only if the victim is conscious and can hold on. Each bearer grasps his own right wrist with his left hand. The two bearers then lock hands with each other. The person sits on their hands and places his arms around their shoulders.



The **two-handed seat** can be used if the victim is conscious but not seriously injured. The bearers kneel on either side of the victim. Each bearer slides one arm under the victim's back and one under his thighs. The bearers grasp each other's wrists and shoulders, then rise from the ground with the patient supported between them.

## First Aid First

The first requirement for this merit badge is to earn the First Aid merit badge, because first aid is emergency preparedness in action. You need to be able to recognize what is wrong with a person and then react to the emergency with the correct treatment until medical help arrives.

You should know first aid so well that you would be able to react to any situation immediately. What would you do in these situations?

- You are eating pizza with some friends. Suddenly, your friend's little sister darts in and grabs some pizza. As she runs away giggling and eating, she trips and starts choking. She turns blue and stops breathing.
- You are camping out with your patrol. During some free time, you offer to take a new patrol member on a hike around the lake. When you are halfway around the lake, he says his heel is so sore he can hardly walk. He takes off his shoe (he is wearing old running shoes rather than sturdy hiking boots) and finds a huge blister. You have two miles to walk in either direction to get back to camp and the first-aid kit.
- You are horsing around with friends indoors on a rainy day. One buddy pushes another and he falls into a glass-topped coffee table. The glass shatters and gashes his wrist. Blood starts spurting out.
- While skateboarding with a friend, his board hits a crack and he is thrown from it. He is not wearing a helmet. His head hits the cement bank, knocking him unconscious.

Now look at the situations again, and ask yourself how you might have helped to *prevent* them—another important part of emergency preparedness.

These emergencies call for *immediate action*. If you have already earned the First Aid merit badge, review those skills so you will be prepared to use them in an emergency.



## The Latest First Aid for Wounds and CPR

Most of us are concerned about the rapid spread of bloodborne pathogens—such as the hepatitis B virus (HBV) and human immunodeficiency virus (HIV), the AIDS virus—and try to avoid exposing ourselves to this hazard. Health professionals and first aiders like those of us in Scouting may find ourselves faced with special problems in this regard.

The *First Aid* merit badge pamphlet and other BSA handbooks used to advocate direct hand pressure to stop bleeding in injuries.

However, this action could involve getting the victim's blood on the rescuer's skin. If the victim has HIV or some other bloodborne disease, the rescuer could be infected with the virus. If the rescuer has open wounds on or near his or her hands, there is the risk of exposure to the victim.

In rescue breathing there is the risk of passing airborne infectious diseases such as influenza from victim to rescuer. But Scout leaders, parents, and youth members should know that there is no evidence that a rescuer can be infected by the hepatitis B virus or HIV either through contact with human saliva or by giving rescue breathing. Studies show that both hepatitis B and HIV are bloodborne illnesses.

The BSA has checked with experts in the federal government's Centers for Disease Control and Prevention and with the American Red Cross. These authorities suggest that we should:

- Maintain the BSA's tradition of rendering first aid to those in need.



Local chapters of the American Red Cross and American Heart Association offer classes in first-aid training. Your Scout leaders can help you obtain more information about first-aid training opportunities.

## Lowering a Person Using a Commercial Harness

Mountain rescue teams may have to lower an injured person from a cliff or down rock faces. A firefighter may have to lower someone from a window of a burning building. A commercial harness, such as those that climbers and rappellers use, also can be used in emergency rescue work. Many Scouting activities use harnesses that can be self-tied, but for safety's sake during an emergency rescue, it is recommended to use a commercial harness and carefully follow the manufacturer's instructions.

A person who is conscious and not badly injured can hold onto the rope as you pay it out. As you do so, turn the rope around a firmly anchored object such as a tree or large boulder. The person being lowered can use his or her feet to keep from banging into anything on the way down. Work out the rope hand over hand. If you let it slide through your hands, you could burn them badly, lose control of the rope, and drop the person.



Rope rescue techniques and equipment are constantly being revised. Lowering an unconscious or severely injured person is very difficult, especially in remote areas, and should only be attempted if you have had special training or if you are working with an expert.

### Ice Rescue

*Reach, throw, and go* are ice-rescue methods. If you see someone fall through ice, act quickly but think clearly. Decide on the best rescue method. If you can, call an adult and 911 for help.

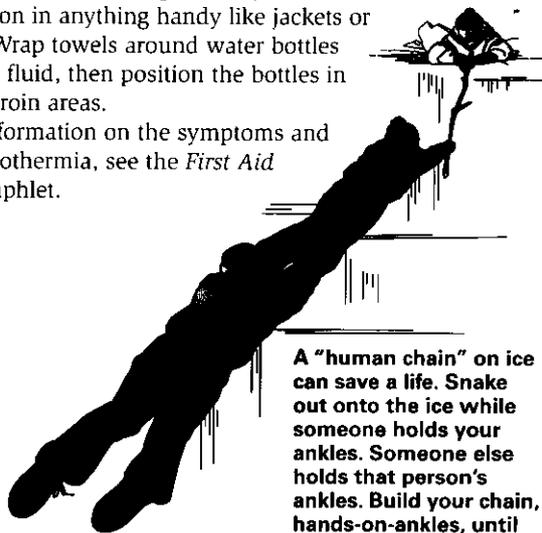
**Reach.** If you cannot reach out from shore and pull the person in, you might be able to reach out to the person with a pole, tree branch, oar, or ladder—anything that will reach. Push it over the ice so that the person can grab it.

**Throw.** Throw a rope to the person if you can. Put a loop (bow-line) in the end of the rope so the victim can slip it over himself or herself if necessary. The person's hands might be too cold to hang on. If you have a ring buoy tied to the end of a heaving line, slide it across the ice to the victim.

**Go.** If you cannot reach or throw, *go*—but *carefully*. Move spread-eagle over the ice and wiggle your way to the person. Once you get closer, reach to the person with something long. You want to go out on the ice as *little* as possible.

After you rescue someone from ice water, get him or her indoors right away. *Hypothermia*—or the lowering of the body's temperature to dangerous levels—can be another emergency. If fully conscious and able to swallow, have the person drink something warm such as warm water or broth. Move the person to a shelter. Replace wet clothing with dry, warm clothes or wrap the person in anything handy like jackets or a sleeping bag. Wrap towels around water bottles filled with warm fluid, then position the bottles in the armpit and groin areas.

For more information on the symptoms and treatment of hypothermia, see the *First Aid* merit badge pamphlet.



A "human chain" on ice can save a life. Snake out onto the ice while someone holds your ankles. Someone else holds that person's ankles. Build your chain, hands-on-ankles, until you reach the victim.

Monitor a hypothermia victim closely for any change in condition. Do not rewarm the person too quickly (for instance, by immersing the person in warm water); doing so can be dangerous to the heart.

- Recognize that very often the victims we treat with first aid are friends and family members with whose health we are familiar. Therefore, in such cases, except when we know they have infectious diseases, we should not hesitate to render first aid.

The BSA Health and Safety Committee recommends the following.

Treat all blood and other bodily fluids as if they are contaminated with bloodborne viruses. Do not use bare hands to stop bleeding; always use a protective barrier; always wash exposed skin areas with water and soap immediately after treating the victim.

Have available and use personal protective equipment that helps prevent direct contact with infected materials. This equipment includes disposable, nonlatex gloves (nitrile or vinyl) and breathing barriers used when performing rescue breathing.

To help reduce the risk of getting or transmitting infectious disease, follow these guidelines for the use of protective equipment.

- Wear disposable, single-use gloves whenever giving care, particularly if there is risk of contact with blood or bodily fluids.
- Wear protective coverings such as a mask, eyewear, or a gown when you are likely to come in contact with blood or other bodily fluids that may splash.
- Cover any cuts, scrapes, or sores prior to putting on protective equipment.
- Use breathing barriers such as resuscitation masks or face shields when giving rescue breaths. A breathing barrier with a one-way HEPA valve offers the best protection.
- Remove disposable gloves without contacting the soiled part of the gloves, and dispose of them in a proper container.
- Change gloves before you care for a different victim.
- Remove jewelry such as rings, bracelets, and watches before putting on disposable gloves.
- Do not clean or reuse disposable gloves.
- Do not use disposable gloves that are discolored, torn, or punctured.

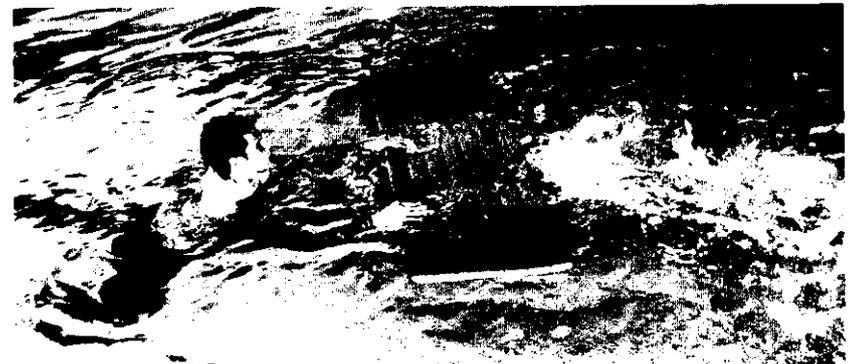


Use a boat with an outboard motor if you can, especially if the victim is far from shore. Stop the motor as you get near the victim, and then reach out with a paddle or pole.

If a canoe is the only craft handy, use it. Approach the victim carefully. If you have a flotation aid, such as an extra PFD, throw it to the victim as you approach. Otherwise, sit on the bottom of the canoe, extend your paddle to the victim, and then swing the victim so he can grasp one end of the canoe. Once the victim has calmed down, decide whether to tow the person to shore holding onto the end of the boat or whether to use your paddle to steady the canoe as the victim climbs in over the side. If you overturn, get the victim to hang on to the canoe. Swim to one end, and with a strong kick push the canoe back to shore. Make sure you are wearing a PFD, particularly if you are not a strong swimmer.

In a tight spot, you also can use a surfboard, a paddleboard, or an air mattress in the same way as a canoe, but only if you are comfortable in the water. Such a rescue would be considered a *swimming* method.

- As a last resort, if you must go to a conscious victim, use a noncontact assist and take any type of rescue aid available (life jacket, oar, air mattresses, towel). Approach facing the victim and tell him what to do. Assure the victim that he will be all right if he holds onto the aid. Present the aid to the victim; make sure that he can reach it. After he has a secure grip, instruct him to kick. Either escort the victim to safety or tow him with the aid. Stay nearby, but not close enough where he could grab you. Continue to encourage his movements.



## Throwing Lines

A useful skill in a water emergency is the ability to throw a line smoothly and accurately: Practice first so that you can throw it accurately.

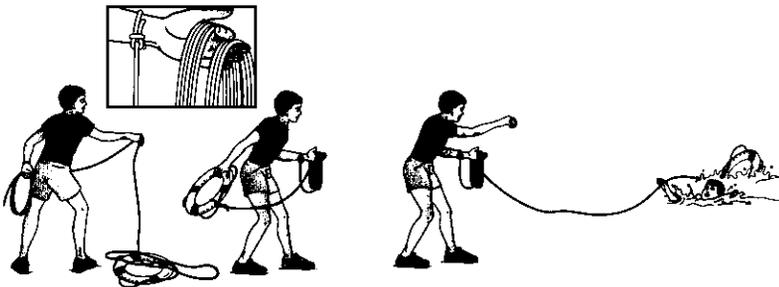
With a light line, tie a small bowline in the shore end of the line. Loop this loosely around your left wrist to anchor the shore end when you throw. (A tight wrist loop could result in your being pulled into the water.) With a heavy line, you might have to tie a knot in the shore end and step on it or tie it down.

Carefully coil a light line to form smooth loops in your left hand. Split the coil and hold half in each hand to make throwing underhand easier and more accurate.

Also throw a ring buoy underhand. Do not divide the coil—the extra weight improves accuracy. Hold the buoy in your throwing hand and the coiled line in your other hand. Throw the ring buoy to land beyond the victim and the attached line will rest over his or her shoulder or within easy reach. The victim can grab either the rope or the ring buoy as you pull him or her to safety.

Quickly retrieve and coil the line for another throw if needed. If you are right-handed, throw with your left foot forward and right foot back. To retrieve the line, drop your left hand in position for holding the coil as you pull in the line with your right hand. Save time by keeping your feet firmly planted in the same position when throwing and pulling in the line.

For heavy line, use these same procedures. If you cannot coil the line in your left hand, or if it is too heavy to hold, coil it neatly on the ground. Step on the shore end of the line or tie it down. Hold only the portion that you can grasp comfortably in your right hand and throw it toward your target.



## Prepare, Respond, Recover, Mitigate and Prevent

In many ways, the world you live in today is much safer than the world in which your parents and grandparents grew up. For instance, medical advances today give us better protection from some diseases that were devastating in the past, such as small-pox. Weather forecasting technology allows for more accurate predictions and better planning for inclement weather.

Many institutions help us to be safer and deal with emergencies, too. The Occupational Safety and Health Administration helps ensure safe and healthful workplaces for employees in the United States. The Federal Emergency Management Agency has the mission of helping citizens plan for and respond to disasters and emergencies of all kinds. The American Red Cross works around the world to help people in need.

But it is not enough to rely on medicine, technology, institutions, or the actions of others to keep us prepared and safe. Look carefully at your home and your community, and educate yourself about potential dangers. As you work on requirements for the Emergency Preparedness merit badge, pay close attention to four things: preparedness, response, recovery, and mitigation and prevention.



## The Four Aspects of Emergency Preparedness

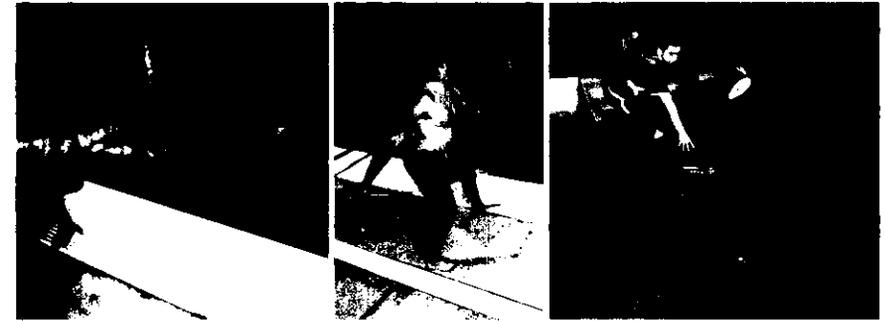
Emergency personnel, such as Red Cross and FEMA workers, use many of the same terms when talking about emergency management. That is just one reason it is a good idea to become familiar with such terms: if you find yourself working with emergency personnel, you will understand what your actions are helping to accomplish.

1. **Preparedness.** When you take actions to prepare for emergencies, you recognize the possible threats from natural and other disasters. Making a plan and practicing it, assembling an emergency or disaster supplies kit, and installing warning devices are all actions you can take to prepare for an emergency.
2. **Response.** In this phase of emergency management, you may be called upon to help with shelter, first aid, and other activities. On a personal level, your response to an emergency can take many forms, such as evacuating an area. Your response can help reduce the occurrence of secondary damage.
3. **Recovery.** After a disaster or other emergency, the goal is to try to get things back to “normal.” In addition to rebuilding and repairing property, there is also work to be done to try to bring physical and emotional health back to a stable condition.
4. **Mitigation and Prevention.** The word “mitigate” means “to lessen in force or intensity,” and “to make less severe.” Prevention goes hand-in-hand with mitigation, as do response and recovery. It also can make the difference between inconvenience and tragedy. Mitigation often involves managing risk—becoming aware of, and responding to, risks and hazards. Mitigation efforts can even help prevent an emergency from happening.



## Drowning

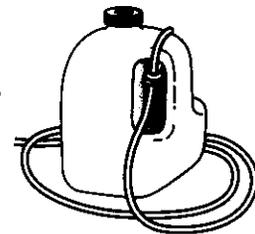
If you know the rescue methods *reach*, *throw*, and *row*, then you may not have to go; you might be able to save a drowning person—and avoid drowning, yourself, during the rescue with a reaching or throwing rescue. These are *nonswimming* methods of rescue. If you see someone who is in the water and needs help, you should use a reaching or throwing assist to help that victim. You should **never** endanger yourself by going into the water and swimming out to the victim unless you are trained to do so.



**Reach** with anything you can—your leg or arm, a broom, branch, paddle, pole. Lying down on or otherwise bracing yourself from a dock or solid ground, reach to the victim with something he can grab onto. Pull the person to shore. You can lengthen your reach by wading into the water or by holding onto a dock or another firmly anchored object.

**Throw** help to a victim if the person is out of reach. You may find ring buoys attached to a line ready for use at most protected beaches and pools. A throwing rescue does not have to involve something with a line attached to it. Anything that floats well enough to support someone will help—life jackets and flotation cushions, inner tubes, air mattresses, kickboards, empty water jugs, and even coolers.

**Row** to a person in trouble if you cannot reach or throw help. When you get near the victim, row backward to him or her to allow the person to grasp the back of the boat. Once the person has calmed down, decide whether to tow the person a short distance to shore or to carefully help the person aboard over the back end of the boat. If a buddy is with you, your buddy can hold onto the victim while you tow the person ashore or help steady the boat when helping in the victim.





**Power lines.** Windstorms, rain, ice, and snowstorms can down power lines and plunge towns into darkness. If you see a power line down outdoors, call the electric company, police, or fire department so that they can shut off the power immediately. Stay nearby to warn others of the danger, but *stay away from the power line. Do not attempt to rescue anyone in contact with a power line using the advice given for someone in contact with a household electrical wire.* Both the current (amount of electricity) and the voltage (the electrical “pressure”) in a power line are extremely high, and simple insulators such as a broom handle do not provide enough protection.

The *Electricity* merit badge pamphlet has more information about electric shock, accident prevention, and rescue techniques that will help you be prepared for electrical emergencies.

**Clothes on Fire**

Accidents involving burning clothes are among the most common causes of serious burns. If your clothes catch fire, remember to “stop, drop, roll, and cool.” Running will merely fan the flames and cause them to burn more. Try to keep calm. Stop where you are and drop to the ground. Roll over and over to smother the flames. Cover your face with your hands.

You can use this technique if someone else’s clothes catch fire, too. Get the person to stop and drop, then roll him or her over and over several times. If you can, grab a rug, coat, jacket, or blanket to wrap around the person to help smother the flames. But do not waste time running off to look for something.

After the fire is out, cold water will help cool the skin and reduce damage from burning. Call 911 for medical help as soon as possible.

The rule for clothes on fire, whether yours or someone else’s, is “Stop, drop, roll, and cool.”



A careful driver who follows traffic laws and avoids distractions such as cell phone use is less likely to have an accident. Such a driver is taking preventative actions. However, even the best driver may not be able to respond quickly enough to prevent a collision caused by another driver losing control of his car. In that case, prior decisions to wear safety belts and to use appropriate restraints for infants and small children will help mitigate the emergency; that is, they will reduce or lessen the chance of serious injury.

Likewise, household fires can be prevented by careful attention to potential sources: People can clear debris from around a furnace, not overload electrical circuits, and be attentive when using candles or fireplaces. If a fire does break out, smoke alarms and a preplanned escape route will help mitigate the situation. In other words, the emergency is less severe if everyone gets out of the house alive. In public buildings such as schools, automatic sprinkler systems can mitigate a fire by keeping it from spreading throughout the building.

Let’s say you live in an area that is likely to have tornadoes. You can **prepare** by recognizing that a tornado emergency could happen to you and coming up with a plan for your family in case of that emergency. You can **respond** by knowing what actions you will take ahead of time. You may have to **recover** from a tornado that damages your home. Services and resources can be obtained from the Red Cross or other providers. But all along the way, you can take actions that **mitigate**, or lessen, the impact on your family, and help **prevent** additional injuries and accidents. For instance, watching the news and being familiar with the tornado sirens that sound in your area could give you more time to respond. Taking shelter away from windows in a basement or interior room of the house could lessen your chances of being hit by flying objects. Even after a tornado, as you help with rebuilding efforts, wearing a sturdy pair of work gloves can help keep you from getting cuts and infections from handling debris.

An important concern during an emergency situation such as a natural disaster is access to clean water. See "Family Emergency Kit" later in this chapter for information about how much clean water to keep on hand in case of an emergency.

## Questions for Emergency Preparedness

Here are the kinds of questions you may ask yourself as you look around.

- Questions that will help you **prepare for** a risky situation or possibility of an emergency or accident occurring.
  - Have I prepared a *disaster supplies kit* with supplies that will last for at least three days? Is the kit packed and stored in an easy-to-access area?
  - Have I made an *emergency plan* with family members in case of a disaster? Have I planned the quickest escape routes from my home and evacuation routes from my neighborhood? Does my family have a meeting place outside our home in case of a fire and another place outside the neighborhood in case we cannot return home? Do we have an out-of-town contact person to call with information about our safety and location in case local lines are jammed?
  - Do I know the *safe places* to go within my home in case my family and I need shelter during extreme weather events such as a tornado? Have I posted emergency numbers near our home telephone where they can easily be found?
  - Do I know how to *be informed* in case of an emergency? Do I know how local authorities might contact me in the event of a disaster, such as using warning sirens to sound an alert? Do I know which radio and television stations broadcast emergency warning information?
  - Do I *know which hazards* are most likely to happen in my community? Do I live in an area that may experience dangerous weather (heat waves, hurricanes, tornadoes, blizzard conditions)? During what time of year?
- Questions that will help you **respond to** an emergency situation in the best way you can.
  - How can I plan *before* a crisis? Do I know what actions to take for a potential emergency? Have I gathered and positioned supplies and contact numbers that might be needed? Can I help educate and train people about safety and preparedness? Do I know which neighbors may need help?



## Saving Lives

During an emergency, your reaction may save lives by using your knowledge of first aid and of situations that might be dangerous. Earning the Lifesaving merit badge, for instance, will prepare you to react safely and effectively in the event of water emergencies. Here are some other emergency situations.

### Contact With a Live Wire

**Household wires.** Electrical appliances usually are safe, but eventually wires fray, plugs break, and parts loosen. Furthermore, circuits in your home might be overloaded with too many extension cords and appliances.

It is extremely dangerous to touch a "live" wire—that is, a wire that has electrical current running through it. If someone grabs a bare spot on a live wire, he might not be able to let go. Call 911 for help. Pull the plug or cord, grabbing it only where it is well-insulated. Or, get to the main electrical switch in your home and shut off the power.

If you cannot shut off the power, try to push a household wire away with a dry, wooden stick (like a broom handle) or a rolled-up newspaper, which does not conduct electricity. If that does not work, you can separate the victim from the wire. But make sure you are not standing on a wet surface, because water conducts electricity. If possible, put on heavy, dry gloves before trying the rescue. Otherwise, you can use a dry handkerchief, towel, sheet, or other dry cloth to encircle the wire and pull the wire from the victim's hand. *Do not touch the wire, the victim, or any grounded object such as water pipes.*



Rescuing a person who has come into contact with a live power line outdoors is extremely dangerous. A Scout should not try such a rescue. Call 911 or the fire department.

As much as possible, be prepared before trouble strikes in public. For instance, get into the habit of looking for exits in any public building you enter.

### Emergency in a Public Place

It seems that we hear about emergencies in public places more and more—in schools, office buildings, shopping malls, and restaurants, and even in places of worship. As in your home, recognizing potential emergency situations is the first step in preparedness. In your school, for instance, do you see any fire hazards in the building? Are conditions and practices in shops, labs, and the gym safe? Are the waste collection, storage, and disposal practices safe? If you see any unsafe conditions in your school, tell a teacher, the principal, or another adult who will listen.



One important thing you can always do when facing any emergency is to *stay calm* and as clear-headed as you can. In a public place, this can be especially important because there may be other people around you who are afraid and not acting in a safe manner. You may have heard the story of someone yelling “Fire!” in a crowded theater. The audience members all react at once, rushing for a door as they try to escape. Such sudden, unthinking reactions can cause more serious accidents, and even death, so learn how to control your own fear. Try not to give in to it, as it can cloud your judgment. If you are calm, you may be able to help other people stay calm. Set an example.

Always remember that you must never endanger yourself when you are facing an emergency. If you can safely do so, call 911 for help. Otherwise, sometimes the wisest thing you can do is to protect yourself and wait for help to come to you.

- How can I react *after* a crisis? Is there a family or community plan for reaction that I should know about? What resources might be mobilized and needed, and how can I help?
3. Questions that will help you and your family to **recover from** a dangerous situation or emergency.
    - After a disaster, how can I help clean up the damage? Do I have the tools to help repair and rebuild my home and my community?
    - How can I help myself and my family recover emotionally from the disaster?
    - Do I understand that physical recovery and emotional recovery take time?
  4. Questions that will help you **mitigate**, or lessen, and **prevent** a dangerous situation or emergency when you can.
    - What can I do to make my home safer from fire or explosion? How do I check for household hazards?
    - How can I help minimize, or lessen, the damage that might be caused during an emergency (during violent weather, for instance)? Can I help make sure that no one would be injured?
    - Can I help make sure that people are acting in a safe manner during an emergency or dangerous situation, such as when I am hiking with my troop in the wilderness?



## Four Aspects of Emergency Preparedness

This is what emergency preparedness is all about: preparing for, responding to, recovering from, and mitigating and preventing emergency situations. Emergencies can be met and handled. Whether an emergency involves your family or your entire community, on highways or waterways, in your home or outdoors, you can bring your Scouting skills and knowledge to the situation and help. Re-create this chart to help you complete requirement 2.

Emergency Situation	Prepare	Respond	Recover	Mitigate and Prevent
Fire in the home				
Tornado				
Car accident				

For more information about emergency kits, see the Ready.gov or American Red Cross entries in the resources section of this pamphlet.

### Emergency Packs and Kits

The following emergency kits will provide you with items that will make your life easier in the time of an emergency. Also, by assembling and maintaining such kits, you are thinking about dealing with possible emergencies long before they can develop.

**According to Ready.gov, a campaign from the U.S. Department of Homeland Security, "When preparing for a possible emergency situation, it's best to think first about the basics of survival: fresh water, food, clean air, and warmth."**

### Family Emergency Kit

If you have received a warning that requires you and your family to evacuate your home, you may have little time to throw together a few items or dash to a well-stocked emergency shelter. It would be better to have a box or suitcase of emergency supplies and water on hand to meet your family's needs for a few days or, better, for a week. These items come in handy in an emergency even if you do not have to evacuate. Some families keep their supplies in a basement shelter area or in a storm cellar, if they have one.

Learn about the emergency plans at places where your family members might be, such as schools, child care centers, and nursing homes. Learn where people are supposed to go if there is an evacuation. Be prepared to evacuate with emergency supplies, as you might be for another emergency.

There are four levels of emergency at nuclear power plants:

- A **notification of an unusual event** is the least serious. Something unusual or unexpected has happened at the plant, but the public does not have to do anything special. Emergency officials are notified.
- An **alert** means that something has happened to reduce plant safety, but all the backup systems are still working and no one is in danger.
- A **site area emergency** is more serious. Small amounts of radiation might be released into the air or water, but these levels are still expected to be safe outside the boundaries of the plant.
- A **general emergency** is the most serious problem. Radiation could leak outside the plant and off the plant site. Sirens will be sounded or other alert systems used. You should listen to the radio and watch television. Local authorities will provide information and instructions. Follow their instructions promptly—you may be advised to evacuate or take shelter.

If you are told to stay indoors, close doors, windows, and chimney dampers. You want to keep outside air from getting in. Turn off forced-air heating or air-conditioning. Put food in covered containers or in the refrigerator. If you can, go to the basement or another underground area. Stay there until you are told it is safe to leave. Do not use the telephone unless absolutely necessary; all lines will be needed for emergency calls.

If you are told to evacuate, stay calm. You will have plenty of time to leave. When outdoors, cover your nose and mouth with a handkerchief. When you go back indoors, change your clothes and shower. Put the clothes you were wearing in a plastic bag and seal it. When you leave your home, lock the doors and windows. Keep car windows and vents closed. Listen to the radio for updates, evacuation routes, and other instructions. Review the emergency information you got from the power company, which will include a map of evacuation routes and where you can find relocation centers.

Authorities will monitor radiation release and will let the public know when any danger has passed.

### Nuclear Power Plant Emergency

As we moved into the 21st century, about 100 nuclear power plants were operating in the United States. No one has ever been killed by an accident at one of these plants, but in 1986, 30 people died during an emergency at the Chernobyl plant in Russia (then the Soviet Union), and more than 100,000 people were evacuated. During an emergency at a nuclear facility, radiation can be released that is dangerous to people near the plant.

State and local governments have preparedness plans for areas in a 10-mile radius and 50-mile radius from all nuclear power plants. You can get emergency information from the power company that operates the plant or from the local Office of Emergency Management. You and your family should have and be familiar with this information.

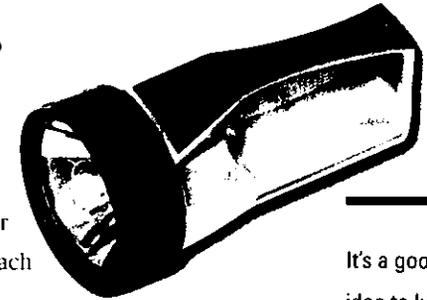


The worst nuclear emergency in the United States happened in 1979 at the Three Mile Island nuclear power plant in Pennsylvania. As a result of what officials learned during that emergency, nuclear plants are even safer today.

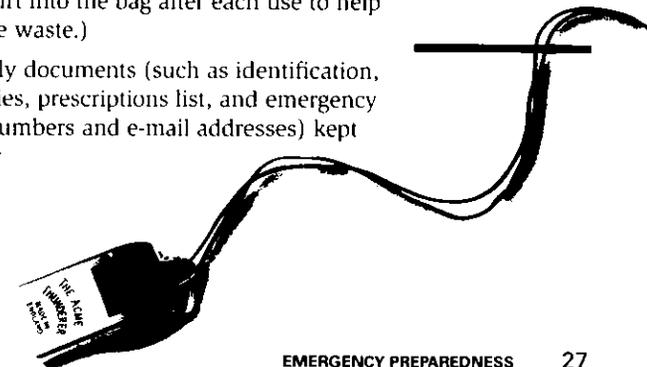
You also can become familiar with the warning systems that will be in place. These could include sirens, alerts on radios, or *route alerting* (like Paul Revere) to notify the public. If sirens are used in your area, find out when they will be tested so that you can hear what they sound like and how well you can hear them from your home. (This also is good advice for warning sirens used for other emergencies such as tornadoes or dangerous thunderstorms.)

Include the following items:

- Three-day supply of water (1 gallon per person per day) stored in sealed, unbreakable containers such as plastic jugs
- Nonperishable foods and a nonelectric can opener (include pet food)
- Eating utensils
- Any special foods or other important items for babies, elderly people, or family members such as extra eyeglasses, prescription medications (if practical), portable devices, and battery chargers
- Family first-aid kit
- Battery- or crank-powered radio
- Flashlight or lantern
- Extra batteries (stored separately and rotated regularly with fresh ones)
- Matches in waterproof container
- Blankets or a sleeping bag for each family member
- Extra clothing appropriate for the season
- Face masks for air filtering
- Soap, wipes, or antibacterial gel for hand sanitation
- Toilet paper
- Emergency toilet, if needed (Use a garbage container, bucket, or similar watertight container lined with plastic bags. Tie the bags near the top so as to allow for gas build-up. Throw sawdust, cat litter, sand, or dirt into the bag after each use to help contain odors and dry the waste.)
- Copies of important family documents (such as identification, copies of insurance policies, prescriptions list, and emergency contact list with phone numbers and e-mail addresses) kept in a waterproof container
- Whistle to signal for help
- Local maps
- Cash and coins



It's a good idea to keep prescription medications handy so that they can be found and taken in a moment's notice.





### Major Disaster Preparedness Items

The following items are helpful during an emergency or if you are safe staying in your home and an evacuation has not been ordered.

- List of emergency telephone numbers and out-of-town contact person in case local lines are busy
- Fire extinguisher (preferably a multipurpose one)
- Tool kit (ax, shovel, broom, screwdriver, pliers, hammer, coil of 1/2-inch rope, coil of baling wire, duct tape, razor blades, adjustable wrench for turning off gas or water)
- Simple chart showing where shutoff valves are located, including the main electrical switch
- Portable fire escape ladder for homes or buildings of more than one level
- Portable stove that uses butane or charcoal (used outdoors away from garage or carport to avoid the danger of carbon monoxide poisoning)
- Gloves and cloths for cleaning up chemical spills
- Covered containers (that can be tightly sealed) for storing refuse
- Garden hose kept near an outside faucet at all times

**During any type of emergency, it is always a good idea to carry a mobile phone if you have one. Don't forget the phone charger, too.**

Be sure to store any emergency items in a place free from moisture, frost, or too much heat.

In your area, 911 may be the only number needed for any emergency.



**Put leftovers right away; bacteria grow quickly at room temperature.**

Botulism, caused by a toxin secreted from a bacterium, is the most serious form of food poisoning. People usually become infected by eating home-preserved food that was not properly washed and preserved. Throw away any foods you think might be spoiled. If you find yourself in an emergency situation and you must eat home-canned food that may be spoiled, boil the food for at least 15 minutes. This process will make the toxin completely inactive.

### FOOD AND CAMPING

Campers can easily get food-borne diseases—and having cramps, nausea, or diarrhea when you are in the wilderness is not something anyone wants. Here are some tips for safe camp food practices.

- Plan meals so that you do not have any leftovers; if you do have leftovers, do not eat them. Throw them away or pack them out.
- Plan meals that require as little chilled food as possible. If you have a camp cooler, do not “stretch” the ice—get more when you need it so food stays cold enough.
- If food has been at room temperature for more than two hours, do not eat it.
- Be absolutely certain that any edible foods you collect near camp are safe to eat. With many plants, such as mushrooms, only trained experts can identify which ones are safe.

If you are in a car during an earthquake, the driver should pull off the road and park in the open, away from power lines and wires. Stay in the car until the tremors are over. When you continue, drive slowly and help the driver watch for fallen objects, downed power lines, and broken and otherwise dangerous roadways.

Aftershocks are smaller quakes that can occur in the hours, days, and weeks after a larger earthquake. Be prepared for them as for an earthquake. They can be strong enough to knock down anything that the main tremors may have weakened.

### Food-Borne Disease

If you eat food or drink beverages that are contaminated with harmful bacteria, toxins, or parasites, you could get a food-borne disease, or food poisoning. Common symptoms are nausea, vomiting, abdominal cramps, and diarrhea. About 250 different food-borne diseases have been identified; such diseases can be a big problem, but recognizing where and how the problems might occur and taking some simple precautions can go a long way in avoiding an emergency situation.

The Centers for Disease Control and Prevention suggests five simple precautions that you can take to help reduce the risk of getting a food-borne disease.

- **Cook** food thoroughly, particularly meat, poultry, and eggs.
- **Separate** your food to avoid *cross-contamination*, or bacteria moving from one food or place to another. Wash your hands after you touch raw meat; wash utensils and cutting boards, too. Store food items separately.
- **Chill** leftovers right away. Bacteria grow quickly at room temperature. Keep cold cuts, meat, and dairy products covered and refrigerated. Discard any food that has been left in an open container and unrefrigerated for a long time. Cooking that food and/or chilling it will not make it safe to eat.
- **Clean** fruits and vegetables thoroughly under running water. Wash your hands with soap and water before handling food.
- **Report** any suspected food-borne illness to your local health department. If agencies designed to help in emergency situations do not know about when and how such situations arise, they will not be able to develop ways to prevent future emergencies.

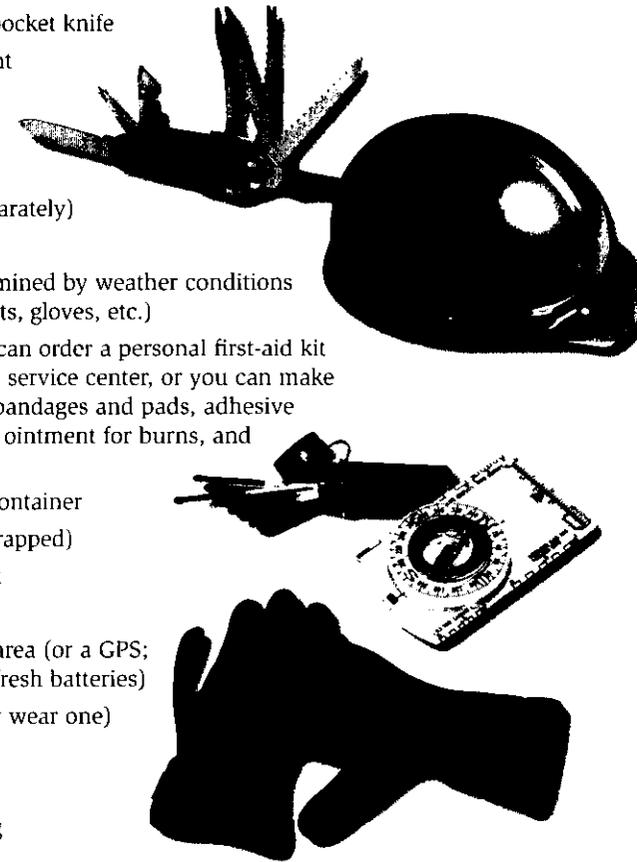


### Personal Emergency Service Pack

Be prepared for a mobilization call with a personal emergency service pack. You will be ready for many emergencies if you use the following checklist as you equip your pack.

- Poncho or raincoat (with hood or rain hat)
- Change of underwear and socks
- Small bag with toothbrush, toothpaste, soap, comb, needle, thread, shoelaces, and toilet paper
- Sleeping bag (or bedroll of two wool blankets) and waterproof ground cloth
- Maps of areas where your troop is likely to serve
- 50 feet of No. 5 sash cord or similar-size nylon cord
- Hand ax, folding saw, or pocket knife
- Water treatment equipment
- Cook kit and canteen
- Flashlight
- Battery-powered radio
- Extra batteries (stored separately)
- Hard hat
- Other equipment as determined by weather conditions (winter jacket, rubber boots, gloves, etc.)
- Personal first-aid kit (You can order a personal first-aid kit through your local council service center, or you can make your own. Include gauze bandages and pads, adhesive bandages, soap, antibiotic ointment for burns, and roller bandages.)
- Matches in a waterproof container
- Emergency ration (well-wrapped)
- Pencil and small notebook
- Handkerchief
- Compass and map of the area (or a GPS; be sure you have a set of fresh batteries)
- Watch (unless you usually wear one)
- Facial tissues
- Work gloves
- Face masks for air filtering

You should know how to use a map and compass or your GPS *before* an emergency occurs.





## Other Emergencies

Some emergency situations can occur when you are away from home and far from your emergency kit and other crisis tools. If you are alert and prepared when out in public, you will be able to respond appropriately if faced with an emergency situation. Do not panic, but remain calm and clear-headed.

### Earthquake

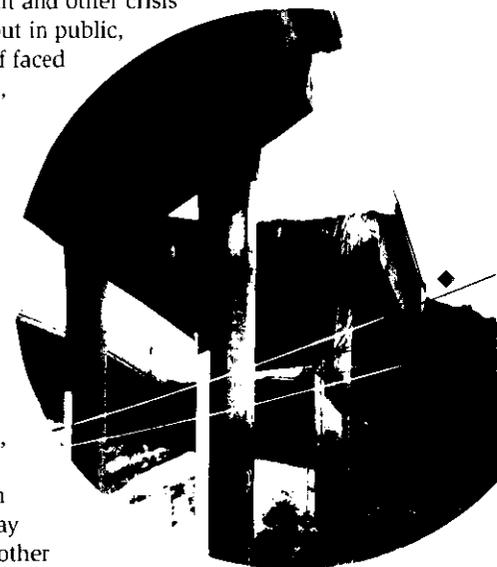
Find out how earthquake-prone your area is and know how to be prepared.

When an earthquake strikes, stay calm. Do not run. If you are indoors, drop to the floor, cover yourself with something (such as blankets or pillows) for protection from falling glass and other objects, and hold on to something sturdy. Get beneath the nearest table, bench, desk, or other strong overhead support. If there is no sturdy furniture nearby, sit against an inside wall, preferably in the basement. Stay away from windows and outside doors. If other people are in the building and can hear you, shout instructions to them so that they know what to do, too.

**After an emergency situation, avoid the urge to walk around and look at any destruction. You might endanger yourself and get in the way of first-aid or rescue work. Follow the instructions of your parents and community officials.**

If you are outdoors, stay there. Do not run near buildings. Head for the nearest vacant lot or the widest street. You should be out in the open where you will not get hit by falling wires, crumbling chimneys, or collapsing walls.

After the tremors are over, if your parents are at home, get them to check for leaking gas. If you smell gas, open the windows and doors and then get out of the house. Call 911 or the gas company from a neighbor's phone.



Earthquakes can be felt in 39 states in the United States. They are felt most often on the West Coast and in Alaska and Hawaii, but they also can happen in the Midwest and in other areas.

You might have to leave your home, especially if you live in a coastal area. If local emergency managers—by means of radio, television, or loudspeaker—advise people in your community to evacuate, go where you are told and travel only on roads they tell you to use. Government and disaster-relief agency officials will tell you where to get emergency housing and food.

Top off fuel tanks well in advance of a storm moving your way. Fueling during an evacuation may be time-consuming and difficult.

If you are camping along or near a seashore when a hurricane watch is issued, immediately strike camp and leave the area.

**Family members sometimes become separated during an emergency. Have a plan for getting the family back together. In case of fire in your home, that might be as simple as meeting outside by a big tree or in the neighbor's front yard. But for other disaster situations, FEMA suggests asking an out-of-town relative or friend to be the family contact. Everyone in your family should know that person's name, address, and phone number. It is often easier to call long distance after an emergency.**



## Types of Emergencies

There are many types of emergencies and many ways they can occur. Becoming familiar with emergencies and their circumstances can help you prepare, respond, recover, and mitigate and prevent. Knowledge of hazards and dangers can help prevent emergencies, too.

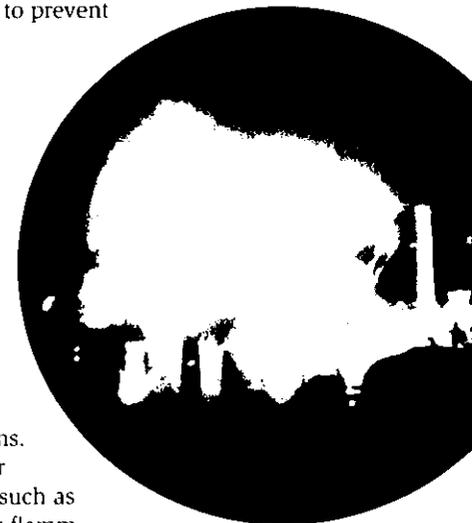
### Emergency in the Home

Most people think of their homes as a safe haven. While our homes are safe places, accidents can happen. With good prevention techniques, many accidents can be avoided. Learn to recognize possible hazards in your environment or unsafe behaviors. However, in the case of a true emergency, your response to the emergency situation can help to prevent injuries or even to save lives.

#### Fire or Explosion

“An ounce of prevention is worth a pound of cure”—so goes the old saying. And *recognizing* potentially hazardous situations that might lead to fire or explosion is the first step on the road to prevention.

**Fire Safety in the Home.** How safe from fire or explosion is your home? You can do a lot to prevent fires. With help from your family, get rid of hazards. Clear closets, the attic, the cellar, and storage areas of flammable rubbish such as papers and empty cartons. Check around the furnace and gas-fired water heater, and move anything that could burn—such as paper—at least 3 feet away from it. Move any flammable liquids, such as oil-based paint, to another location.



You can do much to protect your home from fire by finding potential hazards (prepare/recognize) and getting rid of them or otherwise making them safe (prevention and intervention before a disaster).

Properly dispose of half-empty cans of paint and varnish, paint-soaked brushes, and oily rags. Keep turpentine and paint thinners in airtight cans. Store gasoline, benzene, naphtha, charcoal lighter fluid, camp-stove fuel, and other highly flammable liquids in tightly closed metal containers outside the home. Throw out any trash that has collected around the yard.

**Any substance that ignites or burns easily is said to be flammable. Check with local authorities such as the city's sanitation department about how to properly dispose of such materials. In some areas, you may need to take them to a special drop-off location because they may not be thrown out with regular household trash.**



Be alert to electrical fire hazards. If you find frayed cords, bare wires, or broken plugs in your home, suggest to your parents that these should be replaced. Do not plug too many appliances or devices into one outlet or one circuit. This would be a good time to have a family talk about the electrical system and the use of electricity in your home. Learn the location of your household circuit box and how to safely cut off power. Do not reset breakers without permission and only if you have corrected the problem.

Fires can start even when safety measures are taken, so every family should have a fire escape plan. Develop one for your family that details two ways to escape each room in your home. Make sure your family has a portable escape ladder at each window in bedrooms above the first floor, and that can be used from most windows. Talk about what you would do if your home caught on fire.

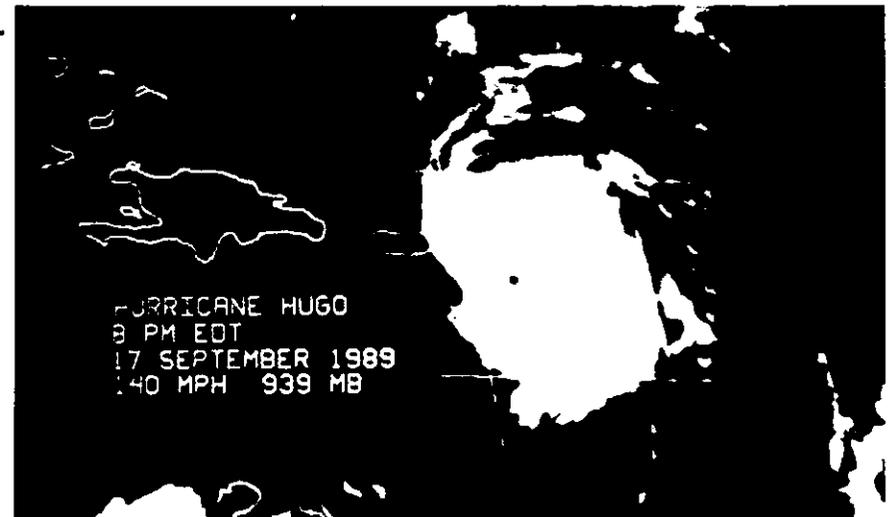
### Hurricane

Anyone living in a hurricane-prone area should be prepared for hurricanes. Be weather alert during hurricane season; listen to local weather reports and NOAA Weather Radio for hurricane progress reports. A hurricane *watch* is issued when there might be a hurricane within 24 to 36 hours. A *warning* is more serious and is issued when hurricane conditions (winds of 74 miles per hour or faster, and high water and rough seas) are expected in 24 hours or less. Plan with your family what to do during hurricane watches or warnings.

Take patio furniture, tools, trash cans, and loose lumber inside the house or tie them down. Have an adult shut off electricity and water. Unless authorities advise differently, leave natural gas service turned on because it may take many weeks for a professional to restore gas service after a major storm, and you may need gas for heating and cooking after the storm. Store a supply of safe drinking water. Park your car in the garage or at least away from trees and poles.

If there is time, help your parents close and board up all the windows of your home. Do not leave any windows uncovered because the direction of hurricane winds changes as the storm passes overhead, threatening all sides of the home.

If your family uses a generator during a power outage, be sure the generator is secured outside in a well-ventilated area, never indoors.



Hurricanes are easily spotted by weather radar, as the weather pattern and clouds swirl into the recognizable "eye" of the storm.

After a tornado, be prepared with your first-aid skills and your duty to *help other people*.

## Pets and Disaster

Be prepared to protect your pets when disaster strikes and consider your pets in your family's disaster plan. If that includes plans for possible evacuation, plan to evacuate your pets, too. Leaving them behind, even if you think they are in a safe place, is likely to result in their being lost, injured, or worse.

- Have a safe place to take your pets. It may be difficult to find shelter for your animals in the midst of a disaster, so plan ahead. Check boarding facilities, animal shelters, friends and relatives, and even hotels and motels. Red Cross shelters are currently unable to accept pets due to state health and safety regulations. However, pet shelters may be co-located near Red Cross facilities and other shelters for people.

- Have a portable pet disaster supplies kit that includes items such as medications, leashes

or carriers, current photos in case your pet gets lost, food and water, bowls, bed, and toys. Make sure you have identification on your pets. In addition to your own phone number, you might want to have the phone number of a friend or relative living outside your immediate area included on the tag.

For more information about pets and disasters, contact the American Veterinary Medical Association. See the resources section of this pamphlet.



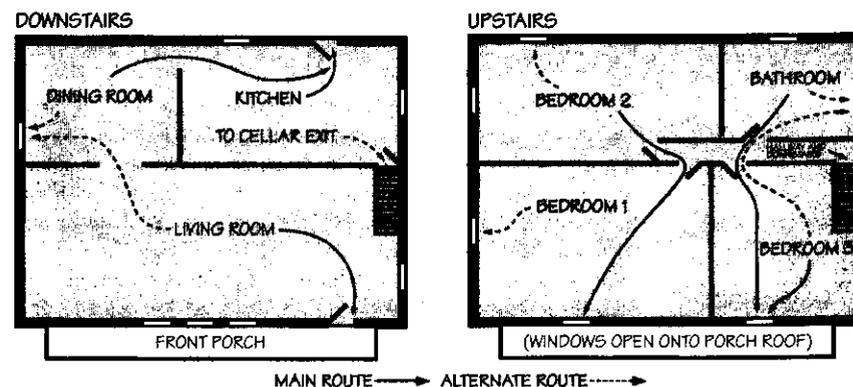
It is important to have a smoke alarm in each bedroom, outside each sleeping area, and on every level of the home.

Test your smoke alarms once a month, and replace the batteries once a year.

For further reference and more fire preparedness ideas, see the "Fire Safety Checklist" in the *Fire Safety* merit badge pamphlet.

## Practice Before It Happens

Practice fire escape drills at least once a year. Pick a place outside where your family can meet if a fire breaks out. (You will find more information about a family escape plan in the *Fire Safety* merit badge pamphlet.)

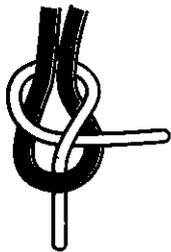


Draw a floor plan of your home to help you plot emergency escape routes. Agree on a meeting place outdoors for all family members.

Be sure everyone knows the sound of the fire alarm *before* an emergency occurs.

**Lifesaving Fire Safety Tips.** If you know how to react in the event of a fire in your home, you can prevent injuries and possibly save lives. Teach these tips to your family and discuss them.

1. If there is a fire, warn everyone possible—without endangering your own safety. Make sure everyone knows what the fire alarm sounds like.
2. Get out of the building if your escape routes are clear. Keep calm. Walk fast. Do not run.
3. Wait until you are in a safe area, but call 911 or the operator as soon as possible to report the fire. Say, “I want to report a fire,” and tell the operator your address.
4. If you are trapped in a multistory building, call 911 to report your location. If you cannot get to a phone, call for help from a window. Wave a towel to signal for attention.
5. Keep doors closed. Open doors and windows cause drafts that can fan a fire and make it more serious. If you think the door is the only way out, feel it. If it is hot, do not open it. If it is not hot, duck to one side, away from the door opening, when you turn the knob. Open the door slowly. If the door opens inward, brace it with your foot to keep it from opening too fast.
6. If there is smoke in a room, crawl close to the floor. The air is least toxic about 12 to 18 inches above the floor. If you cannot see well, keep the back of one hand in front of you. Using your hand, follow the wall around to the nearest door or window.
7. If you can walk downstairs, do so carefully and close to the wall if you cannot see.
8. Buildings that are two or three stories high should have an escape ladder. If you do not have one, and you or others are trapped on the second or third floor, tie sheets and blankets together using the sheet bend knot. Test each knot by pulling hard on the ends. Tie one end to a heavy piece of furniture, drop the other end out of a window, and climb down. Otherwise, get a sheet or other bright cloth and hang it outside a window to get the attention of people outside. Stay by the window and wait for the fire department to arrive and rescue you. Avoid the urge to jump out of the window—wait for help to arrive. Push towels or clothes (wet is better than dry) against the bottom of the door to keep smoke from entering the room.



Sheet bend

## Where Is Tornado Alley?

**The central part of our country—from northern Minnesota and North Dakota to southern Texas and Louisiana—is sometimes called “Tornado Alley.” Generally, this is the area where dangerous tornadoes are most likely to happen. According to a map from FEMA, the number of tornadoes recorded per 1,000 square miles is highest in north Texas and central Oklahoma, with other danger spots in southern Missouri, Arkansas, Mississippi, and Alabama.**

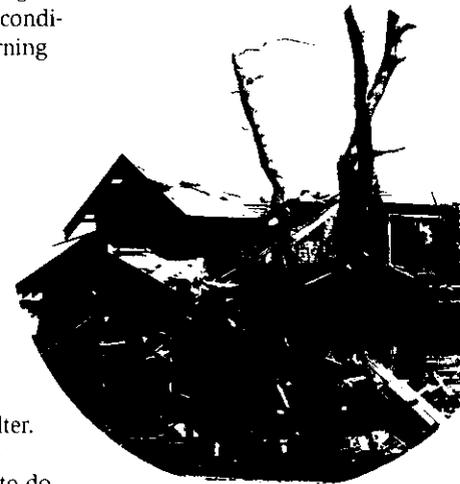
Everyone in your family should know the difference between a *tornado watch* and a *tornado warning*. A watch means that tornadoes are possible and conditions are favorable for them to develop. A warning means that one has been sighted.

During a tornado warning, you and your family should move to your preplanned place of safety. At home, this should be in a basement or storm cellar, or a windowless, interior room (even a closet) on the lowest floor of your home. Stay away from windows; windblown objects may break the glass. Take cover under a piece of heavy furniture and hold on to it. Cover yourself with blankets or pillows if you can.

If you live in a mobile or manufactured home, do not stay there. Get out and find shelter.

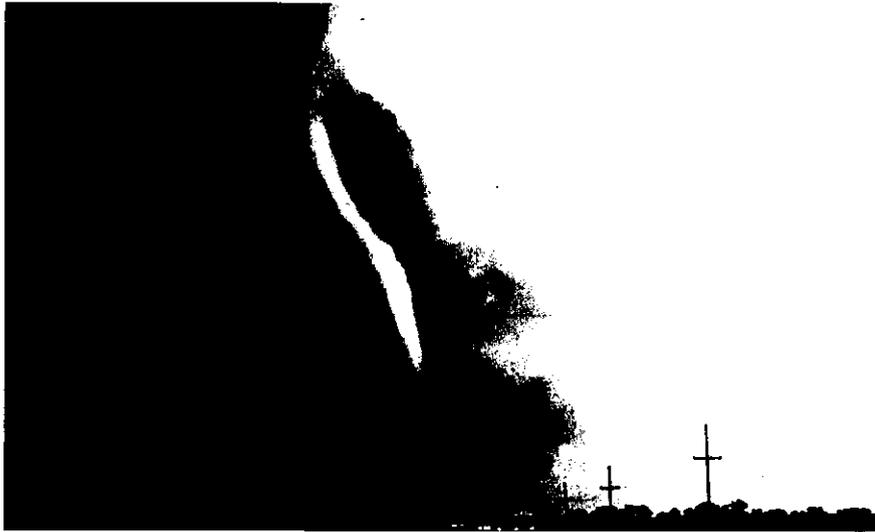
If you live in an area that has a lot of tornadoes, your school will have plans for what to do during a tornado warning. The safest place is in an interior hallway on the lowest floor. Auditoriums, cafeterias, or gyms that have big, poorly supported roofs are not safe. This is good advice for any public place, too: Go to an interior hallway or restroom. Stay away from glass.

If you are in a car during a tornado warning, get out of the car and find shelter in a building. If there is no building or no time to get to one, lie flat in a nearby ditch, gully, or depression away from the car. Shield your head with your hands and arms. Never try to drive away from a tornado. They can do zigzags, figure eights, and U-turns—you might suddenly find yourself driving straight into one.



### Tornado

Tornadoes can lift a house off of its foundation and throw cars up into the air. Even the most well-built home can be leveled. So recognition and preparation are very important aspects of tornado emergency preparedness. In some states, tornadoes happen every year. Find out how often they occur where you live.



**You might think that tornadoes happen only in the wide-open plains of Kansas or Oklahoma, but no place is safe from tornadoes. In the late 1980s a tornado swept through Yellowstone National Park and left a path of destruction up and down a 10,000-foot mountain.**

Tornadoes happen most often between April and June, but can occur any time of the year. Be prepared by paying attention to the weather; know and look for the signs of severe weather and a potential tornado:

- Topsy-turvy clouds often appear, sometimes bulging downward instead of upward.
- It may rain heavily or hail before a tornado.
- Skies may take on a dark greenish color.
- Before a tornado hits, the wind may die and everything may become very still.

9. Absolutely never use an elevator during a fire.
10. Remember that children may become very scared and hide under beds or in closets. You can make sure that they practice a fire escape plan so they know the right thing to do in case of a fire.
11. Help guide others along your escape route, but do not delay your escape by trying to rescue someone else. *In an emergency, do not place yourself in additional danger!* Get out of the burning building to save yourself and those with you. Meet the fire department when it arrives, and tell firefighters where you last saw other people.

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Never re-enter a burning building.

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Firefighters have training, protective clothing, and breathing apparatus; let them do the rescuing. You will be most useful by telling them where others might need their help. You will be unable to direct firefighters to someone in trouble if you yourself become a victim of the fire.

Most of the points above are just as important to know for a fire emergency anywhere, such as in a public building. Look them over again and think about how they might apply. And here are three more important points.

- If you are in a hotel room or live in an apartment, be sure you take the key whenever you leave your room or apartment. Don't get caught in the hallway without it.
- Never go inside a building that is on fire. Wait for the fire department to arrive with the right equipment and gear to rescue people and put the fire out.
- You probably have regular fire drills at school. This is emergency preparedness in action. If you are in school when a fire breaks out, follow your teacher's instructions. Do not go out on your own.



**During a fire, feel doors and do not open them if they are hot. Keep your nose and mouth covered with a clean cloth, and crawl close to the floor to stay below smoke and toxic fumes, which tend to rise.**

### Gas Leak

Gases can kill. The fumes from natural gas or propane leaks can cause explosions. Stoves that are left on but not lighted are especially hazardous. If anyone creates a spark in a fume-filled room, an explosion could happen.

Gases, and related fumes such as carbon monoxide, can cause a person to stop breathing, followed by unconsciousness and death. Sources of dangerous fumes include bad connections for furnaces, ovens, stoves, clothes dryers, water heaters, and other gas appliances. Garages, basements, and kitchens are a home's danger spots.

Smart homeowners have gas fixtures and appliances inspected regularly and keep them in good repair. Have your parents check the gas pipes in your home, especially in damp areas such as the basement, to make sure that they are not rusting. Natural gas also has a distinctive odor that you can smell.

Call 911 or your fire department or gas company if you think you have a gas leak. Looking for the source of a leak yourself could lead to an explosion, since many things can be an ignition source—even such things as flashlights, mobile phones, light switches, and garage door openers.

If someone is overcome by gas fumes, get the person outdoors into fresh air. If the person is unconscious and cannot be moved outside, open windows and doors to help disperse the fumes and bring in fresh air. If the person has stopped breathing, immediately give rescue breathing (see the *First Aid* merit badge pamphlet). Call 911 or the fire department or rescue squad. Notify the gas company.



If you smell gas or suspect a leak and your parents are not home, open windows and get everyone outdoors. Once safely outside, call 911 or the gas company immediately from a mobile phone or a neighbor's phone.

During a flood watch, you can take other preventive measures—if you have time.

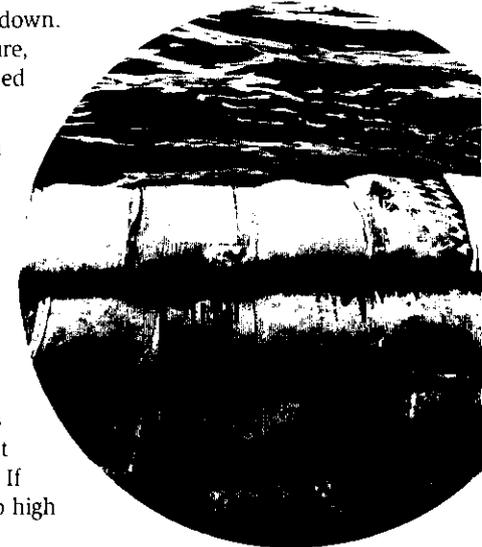
- Bring outside equipment indoors or tie it down. Garbage cans, outdoor grills, lawn furniture, tools—anything that floats or can be carried along by floodwaters—can be a danger.
- Sandbags can help keep floodwaters from your home, but do not pile them up right against the foundation of the house. It is better if water can get into the cellar. This will equalize the water pressure inside and outside the foundation and help prevent damage to the foundation and the house.
- Unplug electrical appliances and equipment. Get your parents to turn off the gas running to gas appliances. Remember that a professional must turn the gas back on. If there is time, help them move furniture to high points in your home.

If you are caught in your home by rising waters, move to the second floor if you have one, and then to the roof, if necessary.

- Take your emergency supplies, including warm clothing, flashlights, and a battery-operated radio, and wait for help. Do not try to swim for safety. Rescue teams will be looking for you, and floodwaters can be deadly.

If you are advised to evacuate by car, do so immediately. If you wait, you could become trapped by flooded roads. Do not drive over flooded roads. Parts of the roadway might already be washed out. If your car stalls, abandon it. Floodwaters can rise rapidly and sweep away a car—and whoever is in it.

When floodwaters go down, throw away food, even canned goods, that came in contact with floodwaters because the water may have been contaminated. If your home has its own water well, have the water tested before anyone drinks it. Make sure anything electrical is completely dry before you use it.

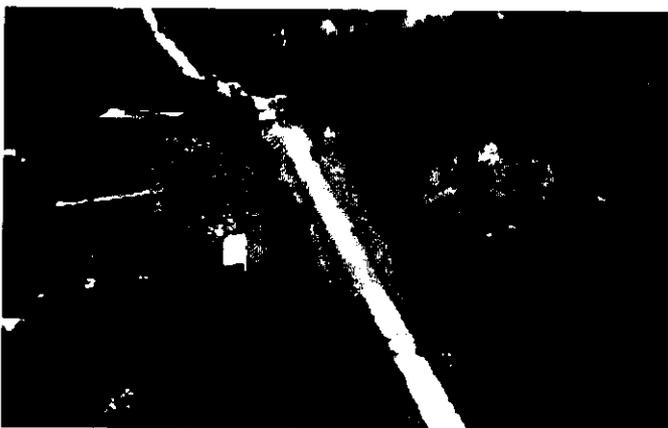


Do not try to cross fast-moving water that is more than 6 inches deep. Fast-moving water is more powerful than you can imagine, and even 6 inches can knock you off your feet.

## Flood

If you live along a river or any natural drainage system, floods can be a threat. Your family should learn the safest route from your home to high, safe ground in case you must leave your home (evacuate). Your local Red Cross chapter will be able to give you background information about the flooding that has occurred in your area. Find out whether your home is above or below flood stage level.

Flood watches and warnings are transmitted by radio, television, loudspeakers, and sirens. Know what the warning system is in your area. When a warning sounds, follow instructions. If you are told to evacuate, do so using recommended roads. Know your community flood evacuation plan.



**Floods can happen quickly. After a flood in Texas, one resident said, "About 11:00 last night the water started coming in over the bridge. Between 11:00 and 11:20 it was incredible how fast it rose. There was really no time to move. Or get out. Or anything..."**

Before a flood happens, you can do things to help prevent injury to yourself and others and reduce property loss. Store drinking water in as many portable containers as you can (but not in juice or milk jugs or cartons) in case water service is cut off. You could even fill bathtubs and sinks. Have emergency supplies ready and get them to the highest inside part of your home. If you must evacuate, take these supplies with you.

## Carbon Monoxide Poisoning

**Carbon monoxide (CO) is an odorless and colorless gas—and it can kill. Every year in the United States, CO poisoning kills more than 200 people and sends thousands more to the hospital.**

Carbon monoxide gas can come from a lot of places: gas-fired appliances, charcoal grills, wood-burning furnaces or fireplaces, power generators, chain saws and other gas-powered tools, and cars. Running a car or a generator in a closed garage or even under a carport, for instance, is a recipe for disaster.

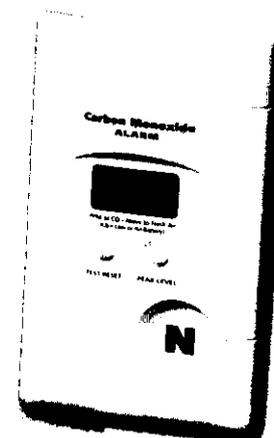
Everyone is at risk for CO poisoning, but you can do some simple things to prevent a problem:

- Install a CO alarm in your home, and be sure everyone knows the sound of the alarm.
- Make sure your parents have any fuel-burning appliances, furnaces, and chimneys inspected by a professional at least once a year.
- Never use a charcoal grill in the garage or in your home—only outdoors!

Know the symptoms of carbon monoxide poisoning: headache, dizziness, faintness, and ringing in the ears. A person might yawn a lot or feel like vomiting. If you or someone else feels like this, get outside or open windows right away for fresh air.

If someone is overcome by carbon monoxide poisoning, call 911 for medical help. The person may not be able to breathe. Give rescue breathing as you learned to do for the First Aid merit badge. Make sure that all appliances and sources of combustion are turned off. A professional should investigate the source of the CO buildup and repair it.

**A carbon monoxide detector, similar to a fire alarm, is a good way to mitigate emergencies due to fumes from incomplete combustion of poorly ventilated gas appliances.**



## In an Emergency, Use the Phone

In many emergency situations, the first and smartest thing you can do is call for help. In your home, post emergency numbers (such as the fire department, police, and doctor) by all phones. Calling 911 will summon fire, police, and ambulance services. Tell the 911 operator your name and address and what the emergency is; then stay on the line until you are sure help is on the way. In the case of fire or gas leak, leave immediately and call from a neighbor's house. In the event of a power outage, a corded phone may still work: Phone lines are powered separately. If the phone lines are down, try a mobile phone, which should work as long as the nearby cell tower still has power. If 911 service is not available in your area, dial "0" and tell the operator your address and your emergency.



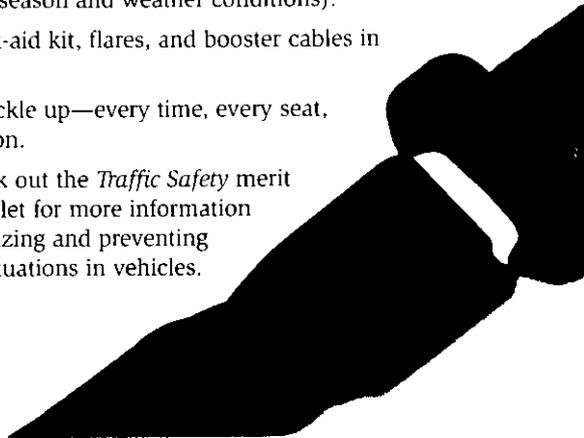
### Emergency in Your Car

If you get trapped somewhere while traveling, remember that your car horn can alert rescuers as far as a mile downwind.

Road trips with your family or with your troop can be great fun. But these trips need to be safe, too. Especially because you might be far from home or from immediate help as you travel, preparation is very important.

- Consider the weather you might encounter. Prepare for the worst. Check weather reports and plan travel routes accordingly. If severe weather is threatening, consider delaying your trip.
- Keep at least half a tank of gasoline in the car.
- Before you leave, let others know your route and when you expect to arrive.
- Pack food, water, medications, and extra clothing (appropriate for the season and weather conditions).
- Keep a first-aid kit, flares, and booster cables in your car.
- Always buckle up—every time, every seat, every person.

You can check out the *Traffic Safety* merit badge pamphlet for more information about recognizing and preventing emergency situations in vehicles.

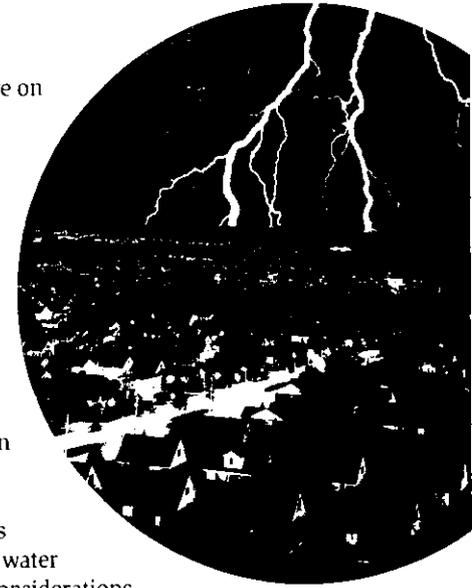


## Weather-Related Emergencies

At the Storm Prediction Center in Norman, Oklahoma, meteorologists keep a careful eye on the nation's weather. The center issues *watches* to local National Weather Service forecast centers when severe weather is possible. When severe weather or dangerous conditions are occurring, the local forecast office issues *warnings*, which are announced on NOAA Weather Radio as well as on commercial radio and television. Watches and warnings are issued for weather events such as winter storms, tornadoes, severe thunderstorms, high winds, and flash floods. *Advisories* are issued when weather might cause serious or dangerous conditions. A common advisory may alert motorists to hazards, such as slippery roads during wintry weather, or boaters of rough water during high winds, or people with health considerations during heatwaves.

Meteorologists rely on weather radar to provide information about developing storms. The National Weather Service has installed Doppler radar stations throughout the country that allow them to issue lifesaving warnings before severe weather hits.

**The National Oceanic and Atmospheric Administration (NOAA, pronounced "Noah") runs NOAA Weather Radio, which is the only government-operated radio system that provides warnings to the public about natural and structural hazards. NOAA Weather Radio can be a lifesaver, and you can be, too, by listening to it. For instance, during a deadly tornado outbreak in Oklahoma and Kansas, a supervisor at a plant in Kansas saved more than 100 people by responding to warnings issued by the National Weather Service that he heard on the plant's NOAA Weather Radio. Shortly after he told employees to move to the basement for safety, a tornado destroyed the building. No one was hurt.**



If your family has a boat, check the equipment and make sure it and the boat are in good repair and working order. If you have a powerboat, carry fire extinguishers, proper lights, an extra paddle, and an anchor. Chain outboard motors to the boat. Know the boat's *capacity*—the number of people it can carry safely—which is shown on a metal plate on the boat. Do not take more people aboard than the stated capacity.

If you must move around in a boat, stay low and in the center and hold on to the sides. If your boat capsizes, hang on to it unless it is on fire. Wait for help. Do not try to swim for land. It is easier for rescuers to see a capsized boat than a lone swimmer. In cold water, huddle together in or on the capsized boat to delay hypothermia.

Observe the rules for water travel (see the *Motorboating* merit badge pamphlet). Do not run a motorboat through or close to a swimming area. When you approach a landing place, slow to a speed less than 5 mph.

Keep an eye on the weather. Head for home—or the nearest place where you can tie up—*before* a storm reaches you. Know standard distress codes, calls, and signals so that you can give the proper call in case of an accident. If you have a radio-telephone, you can send official distress calls, such as the standard "Mayday." Repeat the call three times, followed by the boat's call letters, name, and position, and describe the trouble. You can also:

- Rapidly and repeatedly sound your horn, bell, or whistle.
- Fly your flag upside down.
- Blink your white range light or a spotlight using the standard SOS signal (three short blinks, three longer blinks, three short blinks).
- Fly an orange emergency signal flag (it shows an emblem of a black circle and square on it) or send up a flare.

**Always wear a life jacket, or personal flotation device (PFD). Comfortable styles are available that allow you to participate actively while protecting against drowning. This is simple, effective emergency prevention and preparedness.**

The standard international radiotelephone distress call, "Mayday," comes from the French *m'aidez*, which means "help me."

### Motor Vehicle Accident

Accidents sometimes just happen. As always, be prepared for the unexpected. With car accidents, often the most important thing you can do is to get yourself into a first-aid mind-set. Is anyone hurt? Is anyone bleeding badly? Is anyone dazed or in shock? In your work for the First Aid merit badge, you learned how to respond to such situations.

**The leading killer of Scout-age boys is motor vehicle accidents. The more you can do to recognize potentially hazardous conditions that might contribute to an accident, the more you can help save lives.**

Some people may want to move accident victims or rush them to a hospital. Victims themselves may wish to move about to check on others. Urge them not to do so. Move only those who are in danger or as needed to treat life-threatening conditions. If victims are able to move, help them to safety, have them lie down, and keep them still and calm until medical help arrives. Treat for shock and other conditions as needed.



Four things are essential to help prevent further injury and loss of life after a motor vehicle accident:

1. Call 911 for medical help.
2. Make the scene safe: Turn off the vehicle's engine, secure parking brakes, and help direct traffic if you are trained to do so. However, if you cannot readily secure the scene, do not put yourself in danger trying to do so.
3. Stop severe bleeding.
4. Treat for shock.

**Trapped in a Blizzard.** If you find yourself trapped in a blizzard, use your ingenuity and always ask yourself, *What is the safest thing to do?* Stay with the car and wait for help. Leave your car only if you are sure of the way to the nearest building and you know that it is a short distance away. But wait for the blizzard conditions to lessen, too. Do not walk in a blizzard. It is easy to lose sight of your car and become lost in blowing snow.

When traveling in severe cold weather, keep the following in your car: blankets or sleeping bags, at least one snow shovel, tire chains, signal flares or glow sticks, ice scraper, bottled water, high-energy snacks such as candy bars.



**Know your route when you travel, and plan for weather conditions or terrain that might unexpectedly become dangerous. Be sure someone knows of your travel plans.**

If you are on a well-traveled road, show a "trouble" signal. Attract rescuers by flashing hazard lights or hanging a bright cloth from the radio antenna or window.

### Boating Accident

The two main causes of boating injuries are

- Not having Coast Guard-approved personal flotation devices (PFDs, or life jackets) for *everyone* on board a boat—and not *wearing* the PFDs.
- Not keeping a proper lookout; that is, not paying attention to where the boat is going and then ramming into something.



OFFSHORE LIFE JACKET, TYPE I PFD, DESIGNED FOR USE BY PASSENGERS ON CRUISING VESSELS OVER LARGE BODIES OF WATER

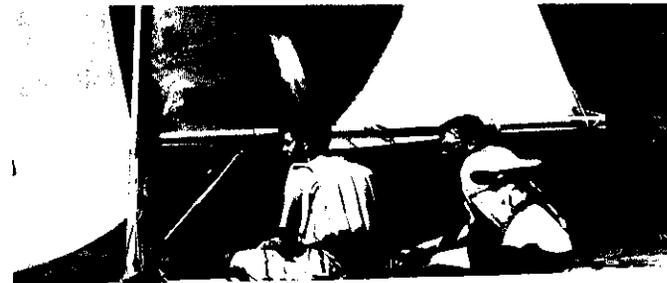


NEAR-SHORE BUOYANT VEST, TYPE II PFD, FOR SHORT PERIODS OF RECREATIONAL BOATING AND INSTRUCTION



FLOTATION AID, TYPE III PFD, USED MOST OFTEN FOR WATER SPORTS SUCH AS WAKEBOARDING, FISHING, AND KAYAKING

**Be sure everyone on board is wearing a PFD.**



**More than 700 people die each year in boating accidents. To mitigate and help prevent such accidents when you are on an outing afloat, be sure everyone onboard is wearing a PFD.**

If you find yourself on a snow slab or other avalanche danger spot, go straight downward or upward—not across. Move one person at a time. If you are likely to fall on your skis, it would be safer to remove them and not fall.

Experienced alpine skiers tie a 30-yard red cord to their belts and trail this behind them as they ski. If they are caught in a snowslide, the cord will float to the surface of the snow where rescuers can spot it.

If you are caught in a snowslide, try to get your skis off. When the snow hits, move your arms and legs in a swimming motion to keep yourself upright, and try to keep your head above the surface. As the avalanche settles, use every bit of strength you have to force your head to the surface. Push away any accumulation of snow from your face to form an air pocket that will allow you to breathe.

If you see others caught in a snowslide, watch carefully so you will be able to tell rescuers the general area where they disappeared. Also, keep an eye out for a second slide, which often follows the first.



When skiing or snowmobiling, stay off slopes that face the sun where its warmth can melt the snow.

If possible, run the engine and heater just long enough to remove the chill from the air—about 10 minutes each hour. Conserve gasoline. But be careful when running the engine, too: Do not let the exhaust pipe get clogged with snow. Blockage can cause deadly carbon monoxide to leak into the passenger compartment. For ventilation, open your window slightly on the side away from the wind. Occasionally, breathe deeply, and rapidly move your arms and legs to increase blood circulation.

The inside of a car can protect you for a time. At night, keep the inside dome light on. It uses only a small amount of current from the battery, and it will be easier for rescuers to see the car in the dark. However, if you are stuck for more than six hours and the cold in the car becomes unbearable, consider moving into a snow hole or snow shelter. The temperature inside a snow hole can be 15 to 20 degrees warmer than the air outside the hole. For more about cold-weather shelters, see the *Wilderness Survival* merit badge pamphlet.

Scouts are known for their resourcefulness. Look around and make do with what you have. You could use the flat, round top of the air filter in your car for digging in the snow. Use a cushion from the car as a seat in your snow hole, or cut branches from a tree to sit on. (You will need a seat so that you are not sitting in melted snow; stay as dry as possible.) As soon as you can, build a fire outside (*not* in the shelter). Use the car's spare tire or hubcaps as a fireplace, or place logs on top of the snow. You might be able to start a fire with the car's lighter. For tinder, tear up road maps or other paper you might have in the car, or strip fabric from the car seats. If you do not have fuel for a fire, look through the car again. Wooden handles of tools will burn, for example.

**You may have heard that the universal distress signal "SOS" stands for "Save Our Ship" or "Save Our Souls," but it turns out that this is just a myth. The Berlin Radiotelegraphic Conference of 1906 adopted SOS as a danger signal merely because the Morse code for SOS—three dots, three dashes, and three dots—was felt to be unmistakable when relayed by telegraph. These days, "three" can mean "distress" in other contexts, too, such as lighting three fires to indicate distress or arranging three piles of debris that searchers might see.**

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Try to avoid burning synthetic materials such as plastic and nylon. Doing so can emit toxic fumes.

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Make three small fires arranged in a triangle as a distress signal. If you cannot build a fire, stamp out a big “SOS” in the snow near your car. Make the letters deep so that shadows are cast into them, making them easier for rescuers to see.

If you are stuck with your car for more than a day, finding food and water could become a problem. You can get water by melting or eating clean snow. If you do not have any food, work slowly and rest often. In extremely cold weather, if you do not rest you will tire quickly and become exhausted.

### Stalled in the Desert

All deserts are dry, but deserts are not always hot. For example, salt flats in Utah that reach temperatures well over 100 degrees Fahrenheit during the day in summer will fall below freezing at night during the winter. Although the most common concern is dealing with excess heat, those stranded in deserts may also have to deal with low temperatures at night.



If your car stalls in a hot desert, stay *with* the car but *not in* it. If you are on a regularly traveled road, someone will come by soon to help. Raise the hood and trunk to indicate you need help. At night, attract attention any way you can: Set out an emergency light, turn on the car flashers or turn signals, leave the inside dome light on, or if possible build a fire outside.

### ROCKSLIDES

- Never throw rocks in high country, or worse yet, push boulders off a high cliff. Falling rocks will hit and loosen other rocks. Before you know it, a rockslide could be tumbling down.
- Loose rocks are most likely to fall when early morning sun melts any ice that held the rocks in place on rocky slopes.
- Heavy rains can weaken the soil that cements rocks together. During rainstorms, do not hike, stand, or camp in the fall zone of a cliff.
- Know the different types of rock. For example, shale breaks apart more easily than other types of rock.
- You will often find piles of rocks, called *talus*, at the base of cliffs. Avoid talus slopes when you can. If you must cross one, do so carefully. Do not walk directly behind someone else.
- As with all backcountry hiking, stick to trails. Do not take shortcuts or cut across switchbacks.



### SNOWSLIDES

According to FEMA, each year about 19 people die in snowslides (avalanches) in the United States. As skiing and snowmobiling become more popular in many areas, snowslides will become more common—unless people take precautions.

- Stay out of the mountains after a heavy snowfall or strong, windy storm. Let the snow settle for at least three days. Check state and local avalanche advisories before going out. The USDA Forest Service can help.
- Stay off slopes that face the sun, which will melt the snow and make it more dangerous. Sounds that suggest cracking or settling of the snowpack may indicate danger.
- If there is high avalanche risk, avoid the backcountry. Within ski area boundaries, the snowpack is carefully managed.
- Avoid the bottoms of narrow valleys, ravines, and gulches, especially if they are below steep slopes.
- Always use the buddy system, and carry a shovel, snow probe, and transceiver for communication. You can learn to judge the “character” of snow with the probe.

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If you will be traveling in snowy, mountainous areas, it may be wise to carry a rescue beacon. If you don't have one, an avalanche cord (30 feet long) will work, too.

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Along with the search method shown on the previous page, a simple search might involve a large number of small teams checking natural and artificial features in an area. This could include trail checks (hiking a trail to see whether the lost person is walking it), ridge-running (taking a quick route along high ground to search valleys from above), and checking buildings, drainage areas, caves, or other potential hazards. The emphasis is on making a quick check of the most obvious places a person may get lost.

### Avalanche

An avalanche is a mass of snow, earth, rock, or other material that sweeps down a mountainside or precipice. They are sometimes called snowslides, rockslides, or landslides. The best way to protect yourself against any kind of avalanche is to avoid climbing or skiing in dangerous high country without an experienced guide. Experienced climbers and hikers know how to identify and avoid places where snowslides or rockslides might start.

The force of a snow avalanche can snap tree trunks as though they were matchsticks.



Avoid steep terrain; avalanches usually happen on slopes of 40 to 60 degrees.

If you are stalled in a remote desert area, stay with the car. Sit in its shade on something, such as a car seat, that keeps you a foot or so off the ground. (The temperature of the ground can be 30 degrees higher than the air a foot off the ground.) Stay calm and think; do not act hastily. You will need water and you will need to protect yourself from the heat. Stay covered; do not throw away clothing, no matter how hot it gets. Clothing will guard against the sun, blowing sand, and insects.

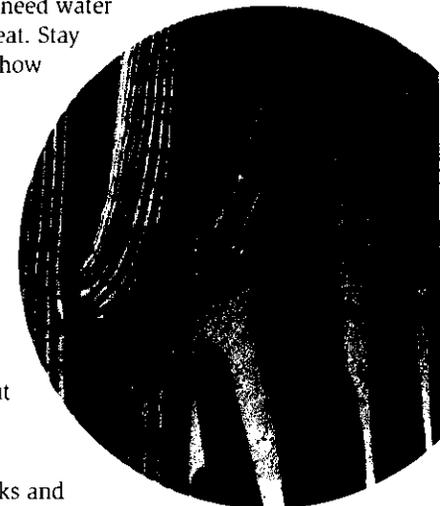
Water is the most important thing. Know these potential sources of water:

- **Dew.** If the night is cold, in the morning you can collect the dew that forms on cars, rocks, and plants.
- **Cactus.** Cut off cactus sections and mash them in a container. Eat the cactus pulp. Slice off the top of big barrel cactuses and scoop out the water inside.
- **Water holes.** In the evening and early morning, listen for birds and watch for circling flocks and freshly made animal tracks. Follow the birds or tracks—they could lead to water. **Caution:** Salty or soapy-tasting water may be poisonous.

If you must walk in search of things, leave a note at the car telling anyone who arrives the direction you went. Normally, you should not leave a car unless you know for certain that help is close by in a given direction. Walk only after sundown or in the early dawn if you need light to see. Rest during the day in any shade that you can find or make.

Use signal fires to attract the attention of planes or other desert travelers. A burning car tire, deflated to prevent explosion, should be visible during the day due to the smoke. Use the car mirror as a signaling device as described in the “Plane Signals” section later in this pamphlet. Spell out “SOS” on the ground with rocks, rags, or strips of car seat covering—anything you can find that contrasts in color with the ground.

**If you find water, drink it. Do not ration it. Trying to make water last longer does more harm than good. Do not eat food unless you drink at least a pint of water a day.**



Especially when you are traveling in or through remote areas, always be sure someone knows your travel plans.

## Emergency in the Outdoors

Many of the activities Scouting has to offer take place in the great outdoors. Here are some things to think about to keep your adventures as safe as possible and to be prepared should an emergency arise.

### Mountain/Backcountry Accident

Try to anticipate and recognize what hazards you might face *before* you leave on a wilderness trip by studying a map of the area where you are going. Know the terrain. Take the map with you, and always tell someone where and when you are going and when you will return.

The best way to help prevent injury or loss of life on a mountain or backcountry trip (or any hiking, for that matter) is to follow the “rule of three”:

Do not travel alone; one buddy is good, but three or more hiking together is better. If one person gets hurt, the second can perform first aid and stay with the victim while the third can get help. Following this guideline also will reduce your chances of getting lost.

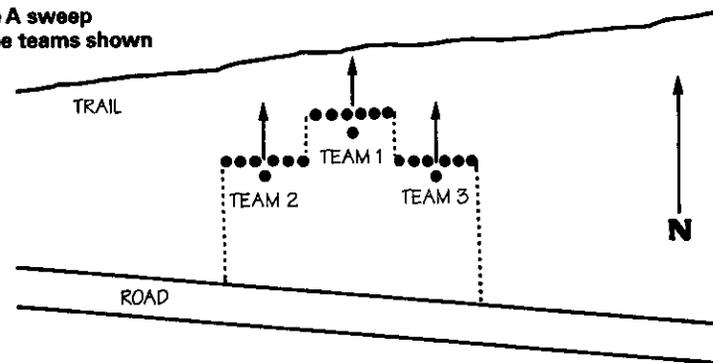
Carry a first-aid kit and a survival kit that has items such as hooks and lines, emergency food, and a plastic bag for water storage. Remember to bring basic hiking necessities, such as a pocketknife, compass (or a GPS with fresh batteries), matches (stored in a waterproof container), and adhesive bandages.

You can help prevent mountain accidents by having the right equipment and clothing—along with emergency supplies—before you set out.

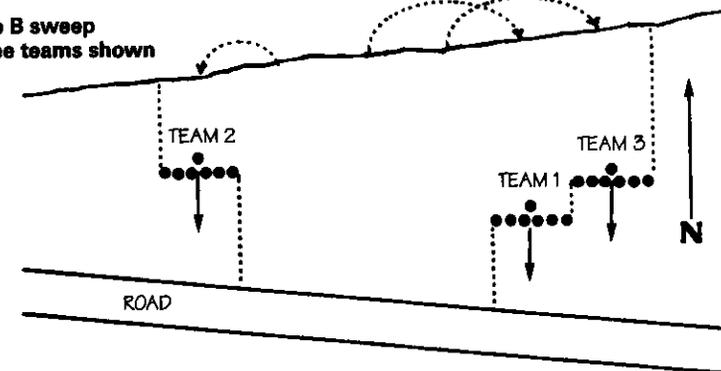


## Lost-Person Search Method

**Type A sweep**  
Three teams shown



**Type B sweep**  
Three teams shown



In these two diagrams, three teams are searching an area between a road and a trail. Team 1 lays ribbon lines (dotted lines) at the edges of its search lanes. Teams 2 and 3 pick up the ribbons and move them to the edges of their search lanes as they begin searching. The area behind the teams is therefore clearly identified as having been searched, and the area outside the ribbons is identified for the “pivot” and continuing search pattern.

When teams pivot to continue the search, they move to the sides (shown by the dotted arrows) to the outside of the ribbons. Teams move the ribbons again to the outside of the search pattern. As they continue “sweeping” in this way, the searched area will expand farther to the left and right.

## Search and Rescue

In places where people get lost frequently, such as in mountainous or wilderness areas, volunteer search-and-rescue teams have formed to meet the need. Searchers in helicopters and on horseback, as well as trained dogs, all try to find lost people. In some places, Scouts and Venturers have specialized search-and-rescue activities and participate actively in operations. If your troop is called to be part of a search-and-rescue team, you must be familiar with basic search tactics and detection methods.

### SEARCH TACTICS

A search director, such as a deputy sheriff or other official, handles the overall planning for a search. A basic search plan follows something similar to this five-step sequence.

1. **Preliminary.** Searchers receive their assignments and information about the lost person (or people): Where was the person last seen? Did he have wilderness experience? How was the person dressed, and what equipment did he have?
2. **Confinement.** It is important to keep the lost person from wandering outside of a known area. Barricades and string lines might be used. Searchers may be assigned to block roads or trails.
3. **Detection.** Searchers need to discover anything within the confined area that might help find the lost person. See the "Lost-Person Search Method" sidebar for one kind of structured grid sweep of an area.
4. **Tracking.** Dogs sometimes are used to track a lost person. Skilled searchers can follow footprints and know how to read other tracking signs.
5. **Evacuation.** When found, the lost person needs to be treated for possible injuries and evacuated.



## Watch Where You Step

**Do not travel after dark, and stay on trails. A hiker in Washington left a marked trail on Mount Si to follow a mountain goat. But mountain goats are better at off-trail hiking than people are. This hiker jumped to a ledge he could not escape and had to spend the night there—along with a lot of hungry mosquitoes.**

**Stay on Your Feet.** In the mountains or backcountry, the most common accident is a fall. Try to prevent falls. When going down a hill or a steep bank, control your center of gravity; that is, lean back slightly. If you fall, you will fall backward, and then you will be in a sliding, rather than a tumbling, position. Leaning forward and grabbing branches or other objects for support is not always a good idea. The support might give way, roll, break, or slide—and then you will tumble forward.

In rough-going areas, try to anticipate where you might fall. That way, if you do fall, you will at least fall in the safest place and manner.

Stay off fallen timber, which can be wet and mossy, making for a slippery surface. Likewise, wet rocks can be slick and dangerous. Even if you do not fall over, you can twist an ankle.



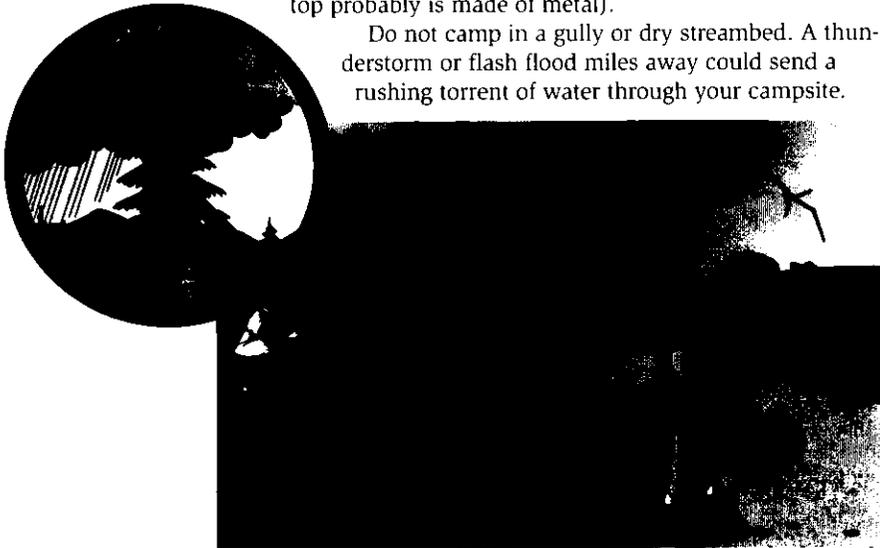
**If you must wade across a stream, study it carefully first, finding the safest place to cross. Carry a staff (hiker's pole), which you can use for support if the current is swift. Test the bottom of the stream with the pole as you cross. Loosen pack straps before you cross so that you can get the pack off easily if trouble develops.**

Bradford Angier, author of *How to Stay Alive in the Woods*, says, "Never step on anything you can step over, and never step over anything you can step around"—simple advice that may prevent an emergency situation.

**Be Weather Alert.** Watch for lightning and thunderstorms. Take shelter in a low area under a thick growth of small trees, ideally away from the direction of the approaching storm. Do not stand under a tall, isolated tree in an open space. Avoid bodies of water and metal fences, too, and anything else that might conduct electricity.

If you are in a meadow, head for the lowest spot of the nearest forest cover. If you get caught in a storm where you cannot quickly get to a low, safe spot, be a small target: Until the storm passes, crouch low with only the soles of your shoes (tiptoe if possible) touching the ground. Place your hands over your ears. Do not lie flat on the ground—which will make you a larger target—and do not wear a baseball cap (the button on top probably is made of metal).

Do not camp in a gully or dry streambed. A thunderstorm or flash flood miles away could send a rushing torrent of water through your campsite.



### Lost or Marooned

If you become lost or marooned with a group, such as your patrol, be a leader. Stay calm and help others stay calm. Tell everyone to sit and think. Clear an area on the ground and “build” a map to help you estimate where you are. Mark landmarks that you can see. Try to reconstruct your trail on the map. How long have you been gone? Can anyone remember when and where he last saw something familiar—a scarred tree? a creek or pond? a fence? Put it on your map. Discuss every detail about your hike that anyone can remember.

## Standard Body Signals



PICK US UP, AIR-CRAFT ABANDONED.



DO NOT TRY TO LAND HERE.



ALL OK; DO NOT WAIT.



AFFIRMATIVE (YES).



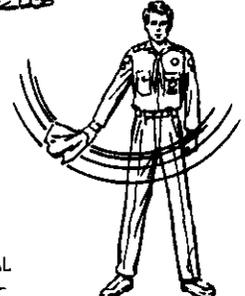
USE DROP MESSAGE.



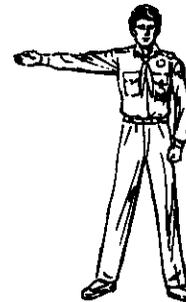
OUR RECEIVER IS OPERATING.



NEED MECHANICAL HELP OR PARTS—LONG DELAY.



NEGATIVE (NO).



CAN PROCEED SHORTLY; WAIT IF PRACTICAL.



URGENTLY NEED MEDICAL ASSISTANCE.



LAND HERE (POINT IN DIRECTION OF LANDING).

You can also “talk” to a pilot with body signals. Most pilots know this universal language. Learn the 11 standard body signals illustrated in this chapter.

Practice signaling before you need to use it.

Know how to “read” a pilot, too. A pilot says “yes” by dipping the nose of the plane up and down. Zigzagging—or fishtailing—the plane means “no.” If your message has been understood, the pilot will rock the plane from side to side or flash green lights with a signal lamp. If your message has not been understood, the pilot will make a complete right-hand circle or flash red lights.

**Ground-Air Visual Code for Use by Survivors**

<b>V</b>	<b>X</b>	<b>N</b>	<b>Y</b>	<b>↑</b>
REQUIRE ASSISTANCE	REQUIRE MEDICAL ASSISTANCE	NO	YES	PROCEEDING IN THIS DIRECTION

**Ground-Air Visual Code for Use by Search Parties**

<b>LLL</b>	<b>LLL</b>	<b>+++</b>	<b>XX</b>
OPERATION COMPLETED.	WE HAVE FOUND EVERYONE.	WE HAVE FOUND ONLY SOME PEOPLE.	WE ARE NOT ABLE TO CONTINUE; RETURNING TO BASE.

<b>↔</b>	<b>→ →</b>	<b>NN</b>
HAVE DIVIDED INTO TWO GROUPS, EACH PROCEEDING IN DIRECTION INDICATED.	INFORMATION RECEIVED THAT AIRCRAFT IS IN THIS DIRECTION.	NOTHING FOUND; WILL CONTINUE SEARCH.

Rest and consider your options. Usually, it is best to stay put. People searching can find you easier than you can find them.

If you must travel and everyone agrees to it, walk in a straight line. Use the sighting system: If you can get to a high point safely, go up and look over the land below, find a familiar landmark, and head toward it. Leave a note or otherwise indicate your direction of travel for searchers.

If there is any possibility that you will have to stay out overnight, find a good campsite before dusk. Do not travel at night, except in the desert with good visibility.



You can help prevent getting lost by always using the buddy system when you hike and knowing how to use a map and compass.

**Plane Signals**

If you are lost, you might need to get the attention of a rescue plane or helicopter. Fire and smoke get a pilot’s attention; however, also be aware of the hazards of wildfire in your area if a drought situation is in effect.

Three fires arranged in a triangle convey a universal SOS. Build fires in an open area where they can be seen. Keep a pile of fuel (brush, twigs, leaves, or grass) nearby so that you can quickly make the fires bigger. If you are short of fuel, lay a fire and be ready to light it when you first hear a plane. During the day, use green wood, damp leaves, rubber, or oil to produce visible smoke. Smoky fires show wind direction. This could be helpful to a pilot who has a chance to land.

Three of anything—visual or audible—repeated at regular intervals is a distress signal. The distress answer is two of anything.

With a smoky fire, you can send smoke signals. Cut off the smoke with a wet blanket (or something similar). Release it, but quickly cut off the smoke again. Do this so that you send three short puffs in a row. Pause and repeat.

**“Three” means “distress.” A pilot might spot three piles of debris when looking for a lost person. Three piles of cut branches or rocks might work. Flashing SOS using Morse code—three short flashes, three long flashes (twice as long as the short ones), three short flashes—is another way to attract help, night or day.**

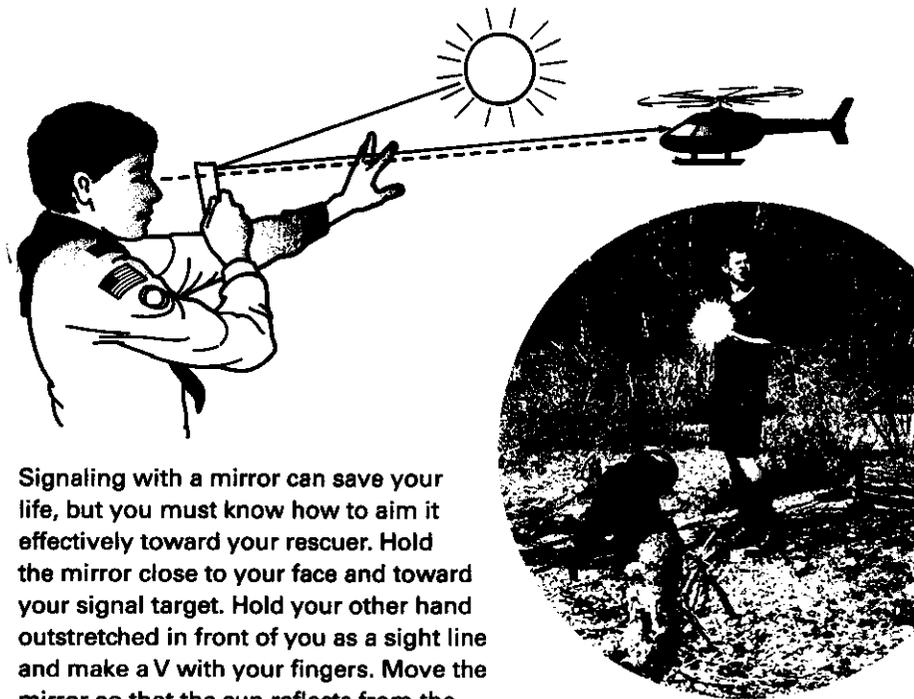


**An arrow is the ground-to-air visual code meaning “proceeding in this direction.”**

A ground-level “sign language” of symbols can attract an aircraft and communicate with the pilot. Make the symbols with strips of cloth, rocks, or branches. Use any available material that will contrast with the background that it is placed on. Make the symbols big—10 feet wide or wider—in an open area where they can be seen. You can also stamp the symbols in sand or snow. If possible, line the bottom of such tracks with something dark, such as leafy green branches. Pile sand or snow on one side so that the sun will throw a shadow onto the symbols. When in doubt, use the international distress symbol, SOS.

One way to get the attention of a rescue aircraft is to use a mirror to aim a beam of reflected sunlight at the plane or helicopter (see the sidebar on signaling with a mirror). If you do not see or hear an aircraft, sweep the horizon with your reflected sunbeam anyway. This tiny flash of light can be seen for 50 or more miles.

You can make a signaling mirror with a knife and an empty can. Cut out the lid or bottom of the can, punch a hole in the center, and you are ready to signal. You can also use the blade of your knife. If you are lost and have none of this equipment, you could use a smooth, wet piece of wood, a flat rock, or anything that will reflect some sunlight.



**Signaling with a mirror can save your life, but you must know how to aim it effectively toward your rescuer. Hold the mirror close to your face and toward your signal target. Hold your other hand outstretched in front of you as a sight line and make a V with your fingers. Move the mirror so that the sun reflects from the mirror onto your outstretched hand and through the V, and then move your hand and the mirror together and point them toward your target.**

**Take time to practice signaling with a mirror. Try it with a buddy in the distance as your “rescuer” and signal to each other.**